CITY OF CAPE TOWN
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STAD KAAPSTAD

Making progress possible. Together.

MEMORANDUM OF AGREEMENT

FOR THE

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

MADE AND ENTERED INTO BETWEEN

CITY OF CAPE TOWN METROPOLITAN MUNICIPALITY

AND

H&I JV

CONTRACT NO. 295Q/2021/22

FILE 1 OF 3

SECTIONS OF M.O.A. INCLUDED IN THIS FILE:

- **PARTS:**
  - **1: Form of Offer and Acceptance (Agreement)**
  - **2: General Conditions of Contract**
  - **3: Contract Specific Data**
  - **4: Pricing Data**
- **PAGES (1 – 480)**

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MEMORANDUM OF AGREEMENT

Contract No. 295Q/2021/22

FILE 1 OF 3

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[redacted]

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MEMORANDUM OF AGREEMENT

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

MADE AND ENTERED INTO BETWEEN

CITY OF CAPE TOWN METROPOLITAN MUNICIPALITY

And

H&I JV

Contract No: 295Q/2021/22

[redacted]

PREAMBLE

WHEREAS Tender **295Q/2021/22** was awarded to **H&I JV** in line with resolution **SCMB 97/10/22** dated **3 November 2022** for the **CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT,** in the amount of **R1 030 956 521.74 (including contingency, excluding VAT)** and **R1 185 600 000.00 (including VAT)** plus an allowance for Contract Price Adjustment of R155 000 000.00 (excluding VAT) and from the date of commencement for a period of 55 months and terminates on 30 June 2028 excluding the 12 months defects liability period.

AND WHEREAS in line with resolution **SCMB 97/10/22** the conclusion of this Contract between the City of Cape Town and **H&I JV** is subject to the conclusion of the process prescribed by Section 33 of the Local Government: Municipal Finance Management Act 56 of 2003, Council adopting a resolution in which it approves the entire contract exactly as it is to be executed, budget being made available during the mid-year Adjustment Budget review (Contract cannot be entered into until budget provision is made available) and the commencement of 146Q/2021/22: DESIGN-BUILD OF MECHANICAL AND ELECTRICAL WORKS FOR THE UPGRADE AND EXPANSION OF THE POTSDAM WASTEWATER TREATMENT PLANT

AND WHEREAS it is recorded that this Contract will be governed by the **General Conditions of Contract for Construction Works, Third Edition, 2015** prepared by the South African Institution of Civil Engineering (SAICE), read with the Contract Specific Data ("**CSD**") annexed hereto marked "**PART 3 CONTRACT SPECIFIC DATA**".

NOW THEREFORE THE PARTIES AGREE AS FOLLOWS:

1. PARTIES

The Parties to this Contract are:

1.1. **The City of Cape Town**, a metropolitan municipality, established in terms of the Local Government: Municipal Structures Act. 117 of 1998 read with the Province of the Western Cape: Provincial Gazette 5588 dated 22 September 2000, as amended ("**the Employer**"), herein represented by the **Executive Director: Water and Sanitation duly** authorised hereto;

1.2. **H&I JV** a JV of private companies registered in terms of the laws of the Republic of South Africa, with its chosen domicilium situated at [redacted] he "**Contractor**", herein represented by its duly authorised representative, [redacted] n his capacity as **Authorised signatory**; hereinafter jointly referred to as "Parties" and in singular, a "Party".

2. INTERPRETATION

[redacted]

2.1. In the event of any conflict between the provisions of this Contract, the GCC and any Part attached hereto, or any other document incorporated by reference to this Contract, save to the extent expressly stated to the contrary, such conflict will be resolved by giving precedence to such different parts of this Contract in the following order of precedence:

2.1.1. first, the Form of Offer and Acceptance.

2.1.2. second, the Contract Specific Data within the Contract Data,

2.1.3. third, the General Conditions of Contract for Construction Works, Third Edition, 2015,

2.1.4. fourth, the Scope of Work,

2.1.5. fifth, the Drawings,

2.1.6. sixth, the Pricing Data

2.1.7. seventh, the conditions of tender, the tender data and the tender schedules

2.2. The provisions of this Contract supersede and replace the provisions of any previous agreement entered into between the Parties relating to the same subject matter.

2.3. The Contractor shall accept that a maximum of 40% of the monetary construction value (excluding provisional sums) is allowed to be subcontracted as per Clause C.2.1.4.3.3 of Part T1.2 Tender Data. The T2.2 Returnable Schedules and Volume. 3A, 3B and 4 from the Tender Document, including all attachments and references therein submitted by the Contractor for tender ***295Q/2021/22***, are incorporated into this Contract by mere reference thereto. Pertinent sections of the Returnable Schedules are included hereafter as Parts to the MOA.

3. APPOINTMENT AND DURATION

3.1. The Employer hereby appoints the Contractor to perform the Scope of Work for the Employer from the Commencement Date.

3.2 Unless terminated earlier or unless an extension of time for completion is granted to the Contractor in accordance with the provisions as set out in the GCC or any other provision in terms of this Contract, this Contract shall commence on the Commencement Date for a duration of 55months after the Commencement Date and shall terminate on 30 June 2028 which excludes the 12 month defects liability period.

4. MUTUAL GOOD FAITH / CO-OPERATION

[redacted]

4.1. The Parties represent and undertake to do all such things, perform all such acts and take all steps to procure the doing of all such things and the performance of all such acts, as may be necessary or incidental to give effect to the execution of this Contract.

4.2. The Parties shall at all times during the continuance of this Contract observe the principles of good faith towards one another in the performance of their obligations in terms of this Contract.

5. OBLIGATIONS OF THE EMPLOYER

5.1. The Employer undertakes to perform its obligations in accordance with the Contract, including but not limited to the Scope of Work (**PART 6: SCOPE OF WORK**), subject to the satisfactory fulfilment of the obligations by the Contractor as set out in this Contract.

5.2. The Employer shall monitor and evaluate the Contractor's performance in respect of the Scope of Work.

6. OBLIGATIONS OF THE CONTRACTOR

6.1. The Contractor hereby agrees and undertakes to perform the Services to the Employer as set out in Scope of Work (**PART 6: SCOPE OF WORK**).

6.2. The Contractor will perform the Works as expeditiously as possible and furthermore agrees and undertakes to perform the services in accordance with the operational requirements of the Employer.

6.3. The Contractor will ensure that the Works will be of a satisfactory quality and fit for purpose.

6.4. The Contractor shall, ensure that its employees, agents, representatives, sub-contractors and suppliers comply with this Contract and all applicable Laws in the execution of the Works.

6.5. The Contractor will not conduct any activity of whatsoever nature which may be detrimental to the Employer's reputation and goodwill.

7. PRICING DATA

7.1. The Contract Price for the Works shall be as set out in the Pricing Data annexed marked "**PART 4: PRICING DATA**

7.2. The Contractor shall not be entitled to any other consideration for the rendering of the Works other than as provided for in this Contract.

[redacted]

DETAILS OF CONTRACTOR

[redacted]

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

SCHEDULE 1: COMPULSORY ENTERPRISE QUESTIONNAIRE

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.

Section 1: Name of enterprise: H.T. CIVIL ENGINEERING (PTY) LTD.

Section 2: VAT registration number, if any: [redacted]

Section 2a: National Treasury Central Supplier Database registration number : [redacted]

Section 2b: SARS Tax Compliance Status PIN : [redacted]

Section 3: cidb registration number, if any: [redacted]

Section 4: Particulars of sole proprietors and partners in partnerships

N/A.

** Complete only if sole proprietor or partnership and attach separate page if more than 3 partners*

Section 5: Particulars of companies and close corporations

Company registration number . [redacted]

Close corporation number .....

Tax reference number . . . [redacted]

Section 6: Foreign Bidding Suppliers	
Is tenderer the accredited representative in South Africa for the Goods / Services / Works offered?	☑ Yes ☐ No If yes, enclose proof
Is tenderer a foreign based supplier for the Goods / Services / Works offered?	☐ Yes ☑ No If yes, answer the Questionnaire to Bidding Foreign Suppliers (below)
Questionnaire to Bidding Foreign Suppliers	
a) Is the tenderer a resident of the Republic of South Africa or an entity registered in South Africa?	☐ Yes ☐ No
b) Is the tenderer a resident of the Republic of South Africa or an entity registered in South Africa?	☐ Yes ☐ No
c) Does the tenderer have a permanent establishment in the Republic of South Africa?	☐ Yes ☐ No
d) Does the tenderer have any source of income in the Republic of South Africa?	☐ Yes ☐ No
e) Is the tenderer liable in the Republic of South Africa for any form of taxation?	☐ Yes ☐ No

[redacted]

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise:

i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;

ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004 or Database of Restricted Suppliers;

iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;

iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and

iv) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed [redacted] Date 18 05 22

Name [redacted] Position DIRECTOR

Enterprise name H3I CIVIL ENGINEERING (Pty) LTD

[redacted]

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

SCHEDULE 1: COMPULSORY ENTERPRISE QUESTIONNAIRE

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.

Section 1: Name of enterprise: H.F. CONSTRUCTION (PTY) LTD

Section 2: VAT registration number, if any: [redacted]

Section 2a: National Treasury Central Supplier Database registration number [redacted]

Section 2b: SARS Tax Compliance Status PIN : [redacted]

Section 3: cidb registration number, if any: [redacted]

Section 4: Particulars of sole proprietors and partners in partnerships

N/A

** Complete only if sole proprietor or partnership and attach separate page if more than 3 partners*

Section 5: Particulars of companies and close corporations

Company registration number [redacted]

Close corporation number

Tax reference number [redacted]

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Is tenderer a foreign based supplier for the Goods / Services / Works offered?	☐ Yes ☑ No If yes, answer the Questionnaire to Bidding Foreign Suppliers (below)
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a) Is the tenderer a resident of the Republic of South Africa or an entity registered in South Africa?	☐ Yes ☐ No
b) Is the tenderer a resident of the Republic of South Africa or an entity registered in South Africa?	☐ Yes ☐ No
c) Does the tenderer have a permanent establishment in the Republic of South Africa?	☐ Yes ☐ No
d) Does the tenderer have any source of income in the Republic of South Africa?	☐ Yes ☐ No
e) Is the tenderer liable in the Republic of South Africa for any form of taxation?	☐ Yes ☐ No

[redacted]

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i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;

ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004 or Database of Restricted Suppliers;

iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;

iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no oth[redacted] any of the tenderers or those responsible for compiling the scope of work that could c[redacted]ed as a conflict of interest; and

iv) confirms that the contents of t[redacted]re within my personal knowledge and are to the best of my belief both true and correct.

Signed [redacted] Date 18.05.22

Name [redacted] Position DIRECTOR

Enterprise name H3I CONSTRUCTION (Pty) LTD

[redacted]

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

SCHEDULE 1: COMPULSORY ENTERPRISE QUESTIONNAIRE

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.

Section 1: Name of enterprise: H3T CIVIL 3 BUILDING (PTY) LTD

Section 2: VAT registration number, if any: [redacted]

Section 2a: National Treasury Central Supplier Database registration number : .....

Section 2b: SARS Tax Compliance Status PIN : [redacted]

Section 3: cidb registration number, if any: [redacted]

Section 4: Particulars of sole proprietors and partners in partnerships

** Complete only if sole proprietor or partnership and attach separate page if more than 3 partners*

Section 5: Particulars of companies and close corporations

Company registration number . [redacted]

Close corporation number .....

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e) Is the tenderer liable in the Republic of South Africa for any form of taxation?	☐ Yes ☐ No

[redacted]

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i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;

ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004 or Database of Restricted Suppliers;

iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;

iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and

iv) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct;

Signed [redacted] Date 18.05.22.

Name [redacted] Position DIRECTOR

Enterprise name H3I CIVIL & BUILDING (PTY) LTD.

[redacted]

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[redacted]

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 295Q/2021/22

BUILD OF CIVIL WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLAN CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

C1.1 Form of Offer and Acceptance

Offer

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of:

CONTRACT NO. 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, 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:

Rand ONE BILLION ONE HUNDRED AND EIGHTY FIVE MILLION SIX HUNDRED THOUSAND RAND ONLY (in words);

R 1 185 600 000.00 (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.

Signature(s) [redacted]

Name(s) [redacted]

Capacity AUTHORISED SIGNATORY

for the tenderer

(Name of organization/tenderer) H3I JV

(Address of organization/tenderer) [redacted]

Name and signature of witness [redacted]

Date 15.06.22

For official use.		
INITIALS OF CITY OFFICIALS AT TENDER OPENING		
1.	2.	3.

[redacted]

[redacted]

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 any amounts 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:

The Preamble including Clauses 1 to 7, and the sub-clauses, cited in pages 1 to 4 above
Part 1: Form of Offer and Acceptance (which includes this agreement)
Part 2: General Conditions of Contract
Part 3: Contract Specific Data
Part 4: Pricing Data
Part 5: Returnable Schedules Submitted
Part 6: Scope of Work
Part 7: Site Information

and together with any drawings and documents or parts thereof, which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the returnable 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 form of offer and acceptance. No amendments to or deviations from said documents are valid unless contained in this schedule.

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 securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. 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 parties have signed the table below and the Contractor confirms receipt from the employer of one fully completed original copy of this agreement, including the schedule of deviations (if any). The tenderer (now contractor) shall within five working days of the agreement coming into effect notify the employer in writing of any reason why he cannot accept the contents of this agreement as a complete and accurate memorandum thereof, failing which the agreement presented to the contractor shall constitute the binding contract between the parties.

The Parties	Employer	Contractor
Business Name	**CITY OF CAPE TOWN**	**H and I JV**
Business Registration	N/A	[redacted]
Tax number (VAT)	[redacted]	[redacted]
Physical Address	Tower Block 12 Hertzog boulevard Cape Town 8001	[redacted]
Accepted contract sum including tax	R 1 185 600 000-00 (inclusive of VAT)	R 1 185 600 000-00 (inclusive of VAT)
Accepted contract duration	55 months from Commencement Date	55 months from Commencement Date
Signed – who by signature hereto warrants authority	[redacted]	[redacted]
Name of signatory	[redacted]	[redacted]
Signed: Date	17.4.2023	13.04.2023
Signed: Location	CAPE TOWN	[redacted]
Signed: Witness	[redacted]	[redacted]
Name of Witness		

[redacted]

Schedule of Deviations

Notes:

1. The extent of deviations from the tender documents issued by the employer before 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: **NOTICE TO TENDERERS NO.1**, DATED 14 APRIL 2022,
   CONTRACT NO. 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

   Details: SEE ATTACHED

2. Subject: **NOTICE TO TENDERERS NO.2**, DATED 01 JUNE 2022,
   CONTRACT NO. 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

   Details: SEE ATTACHED

3. Subject: **NOTICE TO TENDERERS NO.3**, DATED 06 JUNE 2022,
   CONTRACT NO. 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

   Details: SEE ATTACHED

4. Subject: **NOTICE TO TENDERERS NO.4**, DATED 13 JUNE 2022,
   CONTRACT NO. 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

   Details: SEE ATTACHED

5. Subject: **TENDER CLARIFICATION NO.1 AND RESPONSE FROM H& I JV** DATED 18 AUGUST 2022 AND 24 AUGUST 2022 RESPECTIVELY.
   CONTRACT NO. 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

   Details: SEE ATTACHED

6. Subject: **TENDER CLARIFICATION NO.2 AND RESPONSES FROM H&I JV** DATED 29 SEPTEMBER 2022 AND 4 OCTOBER 2022 RESPECTIVELY.
   CONTRACT NO. 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

   Details: SEE ATTACHED

7. Subject: **TENDER CLARIFICATION NO.3 AND RESPONSES FROM H&I JV** DATED 6 OCTOBER 2022 AND 6 OCTOBER 2022 RESPECTIVELY.
   CONTRACT NO. 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

   Details: SEE ATTACHED

8. Subject: **H&I JV COMMENTS ON THE M.O.A DOCUMENT** AND **CCT RESPONSE TO THE M.O.A. COMMENTS RECEIVED FROM H&I JV** DATED 13 JANUARY 2023 AND 17 JANUARY 2023 RESPECTIVELY.
CONTRACT NO. 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

   Details: SEE ATTACHED

All Addenda, Clarification and Responses are attached hereafter.

By the duly authorised representatives signing this agreement, the employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the returnable schedules, as well as any confirmation, clarification or changes 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.

[redacted]

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

FINANCE
SUPPLY CHAIN MANAGEMENT
[redacted]
Supply Chain Management

T: 021 400 4706
[redacted]
tendersandcontracts.enquiries@capetown.gov.za

NOTICE TO TENDERERS NO: 1 **14 April 2022**

TENDER NUMBER: 295Q/2021/22
TENDER DESCRIPTION: CIVIL, BUILIDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

ISSUE DATE: 14 APRIL 2022
CLOSING DATE: 17 JUNE 2022

Dear Sir/Madam,

This Notice to Tenderers forms an integral part of the Contract and is an addendum which must be recorded in **Schedule 24: Record of Addenda to Tender Documents** and bound within the "Returnable Schedules".

Tenderers should note the following:

The advert placed on the 14 April 2022 in the newspaper, The Cape Times and Die Burger omitted the CIDB grading.

The tender has an estimated CIDB contractor grading of a 9CE.

Yours faithfully,

[redacted]

.....

For: [redacted]

Director: Supply Chain Management

WRITTEN ACKNOWLEDGEMENT OF RECEIPT OF NOTICE 1– 295Q/2021/22

Signature..... **Date**.....

Legal and full name of tendering entity:

.....

[redacted]

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

FINANCE
SUPPLY CHAIN MANAGEMENT

Rochelle Arendse
Supply Chain Management

T : 021 400 4706
E: RochelleEdwina.Arendse@capetown.gov.za

01 JUNE 2022

NOTICE TO TENDERERS NO. 2
(Pages 7)

TENDER NO: 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

ADVERT DATE: 14 April 2022

BOX NUMBER: 175

CLOSING DATE: 17 June 2022

Your attention is specifically drawn to the tender document for the following clarifications and amendments which are to be incorporated in the tender document for the abovementioned tender in terms of Clause C.3.2 of Part T1.2 of the Standard Conditions of Tender and you will be deemed to have made any allowance necessary to provide for these amendments in your tender offer.

Kindly be advised that tenderers must complete Schedule 24, page 129 in Part T2.2 of Volume 2 (DOCUMENT B) of the Contract Document.

QUESTIONS AND RESPONSES RECEIVED FROM THE CLARIFICATION MEETING HELD ON 4 MAY 2022

The following table lists the questions with associated answers raised during the clarification meeting (FOR INFORMATION PURPOSES ONLY):

Ref.	Question	Response
Q1	Should the Civil Contractor include in their programme site hand-over to the Mechanical Contractor?	Refer to Document B, Volume 3, Part C3.5, Clause 3.5.5.2, Clause 3.5.5.3 & Clause 3.5.5.5. Note that complete access to the site for the M&E contractor is on the Civil Contractor's Practical Completion date for that portion.
Q2	Are days listed in the programme as calendar days?	This is defined in the relevant sub-clauses. References indicate that days stipulated are inclusive of non-working days and special non-working days.
Q3	What is the anticipated start- date of the Civil Contract?	It is difficult to predict at this stage due to several unknown factors. It is anticipated that the contract commencement will be in July 2023. Note that the estimated start date is for tender purposes only.
Q4	Access to site date- is this number of days after award or after site hand-over?	This is defined in sub-clause 1.1.1.30 of Part C1.2 Contract Data.
Q5	Is there a hand-over period between the Civil and M&E Contractor?	Key milestones shall be handled in terms of the Contract between the Employer and Contractor. The interface between the contractors on site shall be governed in terms of sub-clause 4.1 of Part C1.2 Contract Data.

[redacted]

Ref.	Question	Response
Q6	Is the Practical Completion Date when the portion is handed over to the Employer for the M&E Contractor to start work?	Key milestones shall be handled in terms of the Contract between the Employer and Contractor. The interface between the contractors on site shall be governed in terms of sub-clause 4.1 of Part C1.2 Contract Data. Some elements of the mechanical works may be required to be installed, for example cast in items, before Practical Completion.
Q7	Will the M&E Contractor's work influence the Civil Contractor's practical completion date status?	There are too many unknown factors to give official response to this question. It can be stated that special provision has been made in the Contract to promote effective co-ordination between the contractors on site (refer to sub-clause 4.1 of Part C1.2 Contract Data).
Q8	Will the Civil Tenderers be able to engage with the appointed M&E Contractor at the Tender stage to put together a program?	This is not possible nor practical given that this tender (295Q/2021) will be closed prior to the award of Contract 146Q/2021/22.
Q9	Are there any M&E works that precede Civil work?	This may vary subject to interaction required in terms of sub-clause 4.1 of Part C1.2 Contract Data. In terms of contractual requirements, the M&E contractor will have to finalise the detailed design associated with its Works and supply relevant cast in items to be built in. Also Portion C-Sub A requires special "changeover" protocol to ensure the existing Works remains operational. In addition, demolition activities can only take place after the M&E contractor has decommissioned and removed relevant equipment.
Q10	Are there timelines for the pre-emptive work of the M&E contractor? Or preliminary programs that the Civil Contractor can use to program their work?	Key milestones for various Portions of Work have been defined in the Contract Document.
Q11	Are the Demolition works a lump sum item, or is everything measured and quantified?	Refer to specification and relevant section in Bill of Quantities.
Q12	Is the removal of sludge from the ponds billed in m^3?	Refer to specification and relevant section in Bill of Quantities. Also refer to response provided in clarifications hereafter.
Q13	How is the client dealing with the release of guarantees/retention?	This is defined in the Part C1.2 Contract Data.
Q14	Will the sludge be disposed of at a high hazard waste site -Vissershok? Can it be highlighted in an addendum whether the waste is classified as 'high-hazardous' or 'hazardous' as there is a substantial price difference in the disposal of these two types?	Refer to specification and relevant section in Bill of Quantities. Also refer to response provided in clarifications hereafter.
Q15	The power supply is under M&E Contractor's package for the new management building. If the M&E contractor is late bringing the main supply, the Civil Contractor cannot commission the building.	Such an interpretation is fair if the reference applies to the building as a whole (i.e., inclusive of small power).
Q16	Does the Client supply power, or does the Contractor need to install meters?	The Contractor is responsible for service connections. Electricity and potable water shall be installed with metered connections supplied by Contractor.
Q17	Does the Contractor supply their own security?	No special arrangement is made in terms of protecting and safeguarding the works other than that specified in the Contract Document. Contractor remains responsible for security of its Site.
Q18	Can the Revit models be shared with the Tenderers?	This will not be possible.

Refer to attached documentation (FOR INFORMATION PURPOSES ONLY) included hereafter:
1. Clarification meeting presentation.
2. Compulsory site visit attendance register.
3. Compulsory clarification meeting attendance register

[redacted]

QUESTIONS AND RESPONSES RECEIVED SUBSEQUENT TO CLARIFICATION MEETING UP TO THE ISSUE OF THIS ADDENDUM:

The following table lists clarifications which have been communicated to the CCT via official communication channels. It should be noted that where questions or clarifications have been submitted and is not specifically addressed herein, the relevant party shall accept that the answer to the question or clarification shall be accepted as "specified in the tender document".

Tenderers shall note that these clarifications are FOR INFORMATION PURPOSES ONLY.

Item	Reference	Question/Clarification	Response
C1	General	What is the procedure for gaining access to the site to conduct assessments?	Access to site can be arranged by contacting the following CCT representatives: Plant Manager: janet.chunderduri@capetown.gov.za Regional Manager: graham.vanniekerk2@capetown.gov.za
C2	General	Request for tender closing date to be extended by five weeks.	An extension of time on the tender closing date will not be granted
C3	General	Request for site clarification meeting presentation and attendance registers to be issued to Tenderers.	Refer to attachments distributed with this Notice to Tenderers.
C4	General	Can the CIDB contractor grading designation of 9GB be considered for this tender?	Due consideration was made. CIDB designation will remain unchanged (i.e., 9CE).
C5	General	Are all environmental requirements in place?	CCT are in possession of the relevant environmental legislative authorisations. Contractor's obligation in terms of EMP is depicted in Part C3.6.3 of Contract Document.
C6	General	Can the anticipated project start date be provided?	Refer to response provided in Q3 in the clarification meeting Q&A recorded in the previous section of this Notice to Tenderers.
C7	General	Clause 1.3.9.1.1 refers to 21 days required for appeals lodged against the award of Contract 295Q/2021/22. The same is mentioned in Clause 1.3.9.1.3 (b) for Contract 146Q/2021/22. Will these two contracts be awarded at the same time?	Sub-clause 1.3.9 of Part C1.2 Contract Data is included to allow CCT to appoint both Contract 295Q/2021/22 and 146Q/2021/22 simultaneously.
C8	Document A, Volume 1, Part T1.2, Clause C.2.13.3, Page 17	Does the Tenderer have to submit an original of their submission and a copy, or just the original?	The sub-clause referenced states a separate copy of the information listed under Clause C.2.13.3 must be included.
C9	Document A, Volume 1, Part T1.2, Clause C.2.13.11, Page 17	Are Tenderers allowed only to submit a printed version of the Local Content (Annexure C) Schedules and Bill of Quantities (BoQs) with the electronic excel files of the BoQs?	Printed BoQ completed in electronic format (as distributed with the tender document) may be submitted as an attachment to the tender submission. Local content schedules may also be completed in electronic form and printed but must be on Annex C form as shown on relevant returnable schedule in the tender document and also as a separate attachment to the tender document.
C10	Document A, Volume 1, Part T1.2, Clause C.2.1.4.3.3, Table 2, Items 5.1,5.2,6.1,6.2,6.3,6.4,6.5&6.6	Points are available for a Reference Project (RP) at the minimum and maximum conditions. Can you score on the minimum and maximum category if the RP is above the minimum stated parameter?	Reference projects conforming to the relevant requirements and stipulations described in Table 2 under items 5.2, 6.2, 6.4 & 6.6 will also contribute to a score in items 5.1, 6.1, 6.3 & 6.5, respectively.
C11	Document A, Volume 1, Part T1.2,	As the Tender is a construction based contract incorporating Specialist	Refer to amended Table 3 in Addendum hereafter.

[redacted]

Item	Reference	Question/Clarification	Response
	Clause C.2.1.4.3.3, Table 3, Items 1,2&5	Project Management skills, can SACPCMP (Professional Project Management) Accreditation be considered?	
C12	Document A, Volume 1, Part T1.2, Clause C.2.1.4.3.3, Table 3, Items 1,2&5	It is unrealistic to expect a Contract Manager/Director, Construction Manager and Integration Manager in the construction industry to hold a BEng + MEng qualification. Can the requirements be relaxed or points redistributed?	After due consideration, no amendment to the qualifications and related point score will be effected.
C13	Document A, Volume 1, Part T1.2, Clause C.2.1.4.3.3, Table 3, Item 6	The existence of Foreman/Supervisors with a BEng degree and 20 years of experience is unrealistic. Can the relevant Qualifications for this role be re-considered to NQF4?	After due consideration, no amendment to the qualifications and related point score will be effected.
C14	Document A, Volume 2, Part C2.2, Bill no. C60,Item C60.380 – 402, Pages C60-20 – C60-22 & Document C, Volume 3B, Part C3.6.5	The BOQ refers to project specifications PSESEC-1 however this is not included in the Electrical Variations and additions to the standard specifications	The relevant section in the BoQ shall be removed. Refer to amended BoQ in Addendum hereafter.
C15	Document A, Volume 2, Part C2.2, Bill no. B1, Item B1.21, Pages B1-2 & Document C, Volume 3A, Part C3.6.1, Page C3.6.1-9, Clause PSA7.20	Lift bill item B1.21 in Prov sums & spec PSA7.20 refers to the lifts being a provisional amount however no amount stipulated in the BOQ	Tenderers to price this item based on specification provided under sub-clause PU 3.9 Passenger Lift included in Part C3.6.2 Particular Specifications (page C3.6.2-9). Refer to amended BoQ in Addendum hereafter.
C16	Document A, Volume 2, Part C2.2, Bill no. C49, Pages C49-1 - C49-10 & Document C, Volume 4,	The drawing register states that SUI is not in use, and there are no drawings in the tender pack. However, there are bill items for this building and items that refer to specific drawings which are not available.	Refer to relevant attachment titled *Drawings_SUI* distributed with this Notice to Tenderers to reference these drawings.
C17	Document B, Volume 2, Part T2.2,Schedule 9	Schedule 9 refers to "Reference Letters for each project shall be included. Are Certificates of Completion and detailed Scope of Works acceptable as "reference letters"?	Completion Certificates are acceptable and will be required in terms of sub-clause C.2.1.4.3.3 Table 2 Note "&" to obtain a score for reference projects listed.
C18	Document B, Volume 2, Part T2.2,Schedules 22.6 &22.7	Local content Schedules 22.6 and 22.7 for electrical items reference Section B10, which does not exist- this should be B9.	These schedules have been compiled to assist with the compilation thereof. However, it remains the Tenderers responsibility to make sure these references are correct. Refer to amended Returnable Schedule 22.6 and 22.7 in Addendum hereafter.
C19	Document B, Volume 3, Part C1.2, Clause 1.1.1.30, Page 142	Access to the site for Portion C Sub A is 90 days duration. Is it correct to interpret the 90 days between the Letter of Acceptance and access to the site for health & safety plan, works permit and site establishment?	The access to site references shall be accepted as stipulated in terms of the Contract. Period stated shall be from Commencement Date as defined in terms of the Contract Document.

[redacted]

Item	Reference	Question/Clarification	Response
C20	Document B, Volume 3, Part C1.2, Clause 1.1.1.30, 1.1.1.14 & 1.1.1.13	Can a bar chart indicating access dates, time for completion and defects liability period for each Portion of the works be provided? Can the milestone dates related to the structures in the scope of work also be provided?	Key milestone dates are defined in the Contract Document. Bar chart will not be distributed.
C21	Document B, Volume 3, Part C1.2, Clause 5.3.4, Page 147	What duration needs to be allowed for the Application for Construction Work Permit?	This is subject to comprehensiveness and completeness of documentation to be compiled and issued by Contractor. It is anticipated that this process can be finalised within 30 days from submission of application.
C22	Document B, Volume 3, Part C3.4, Clause 3.4.9, Page 194	What are the Main Contractor's requirements for wayleave applications?	Internal wayleaves (i.e., inter CCT department approval) will have to be obtained prior to excavation. No external wayleaves (i.e., outside of CCT departments) are envisaged for this Contract.
C23	Document C, Volume 3A, Part C3.6.1, Page C3.6.1-51, Clause PSG-7.2.6	Where will the water for water testing be sourced from, and who will pay for it?	Potable water will be obtained onsite via a metered connection and charged as specified. Treated effluent, where applicable, can be obtained at the outlet(s) free of charge (refer to Part C3 sub-clause C3.1.8.3).
C24	Document C, Volume 3A, Part C3.6.1, Page C3.6.1-20, Clause PSD-11.5	Where will the existing sludge be disposed?	CCT dispose of sludge at Vissershok landfill site. Tenders can accept that it shall have to adhere to the same requirement and price accordingly. Tenderers to consider special requirements that Vissershok has in terms of disposal (i.e. dry solids content) and allow for such requirements accordingly. The material to be disposed of will be considered as hazardous.
C25	Document C, Volume 3A, Part C3.6.1, Page C3.6.1-39, Clause PSG-5.5.1.7	The Variations and additions to Standard Specification refer to a concrete strength of W40MPa/20mm concrete with a crystalline waterproofing admixture with the tracing agent for all water retaining structures. However, in the Bill of Quantities items, all relevant water retaining structures refer to 35MPa/19mm. What is the correct concrete strength?	The specification will be amended to comply with the term 35MPa/19mm. Note that the term "W" refers to water retaining concrete as listed in the relevant BoQ headings. Refer to amended specification in Addendum hereafter.
C26	Document C, Volume 4, Drawing pack b. (2 of 10) General Drawing 14	General Drawing 14 is too large and has restricted the ability to view and print drawings 14 to 66. Can the drawing pack be re-sent without drawing 14 and drawing 14 sent as a dwg or CAD file?	A file transfer link will be shared with all tenders where separated drawings can be downloaded. Alternatively, tenderers can arrange to collect such a file at Bigen's Offices.
C27	Document C, Volume 4	Splitting up the 10 PDF packs into individual packages for subcontractors to price (i.e., electrical, roofing, steel etc.) is difficult and time-consuming. Can singular PDF drawings be sent instead of the combined PDFs issued?	A file transfer link will be shared with all tenders where separated drawings can be downloaded. Alternatively, tenderers can arrange to collect such a file at Bigen's Offices.
C28	Document C, Volume 4	Demo – bill items D3.25-39 refer to drawings which are not in the tender pack: - DWG 400361 CT 20Z, 21Z, 22Z - M112/Z/19 - DWG 100654/SDB-003 - DWG 100654/NIW/003, 006, 009 & 011 - DWG 100654/153a/03	Refer to relevant attachment titled *Drawings_Demolition* distributed with this Notice to Tenderers to reference these drawings.

[redacted]

Item	Reference	Question/Clarification	Response
		- DWG 1597/2/12/1 - DWG 1597/2/4/1	
C29	Document C, Volume 4	Electrical – bill items B9.21-B9.26 - DB -PV & DB-SOL - refers to drawings not in tender pack: - 3089.30.01.SUA.23.K302 - 3089.30.01.SUA.23.K303	Refer to relevant attachment titled *Drawings_Elect.PV* distributed with this Notice to Tenderers to reference these drawings.
C30	Document C, Volume 4	Section C46 – refers to drawing for reference to all trades in this section however this drawing is a joinery schedule only: - 3089.92.00.WHA.F001	Where reference is made to a drawing code (i.e., WHA), tenderers are to reference all associated drawings with code in drawing number. Refer to Addendum below on Part C2.1 Pricing Assumptions.
C31	Document C, Volume 4	Aluminium shopfronts – bill items C46.63-65 refers to drawing which was not issued in the tender pack: - CT1397 6201	For detail regarding item specified tenders can refer to drawing 3089.92.00.SUA.16.F006 (ISF001-2) and price accordingly. Refer to amended BoQ in Addendum hereafter.
C32	Document C, Volume 4	Section C10 – refers to drawing for roof cladding however this is a furniture schedule only: - 3089.92.00.WOB.16.D001	Detail on roof cladding and sheeting can be found under drawings: 3089.92.00.WLA.16.U001/U002/X001/X002/X003. Refer to amended BoQ in Addendum hereafter.
C33	Document C, Volume 4	Can the following Landscaping Drawings as per BOQ be provided? - 536-OvP-WWTW-402 Rev 0 - 536-OvP-WWTW-403 Rev 0 - 536-OvP-WWTW-404 Rev 0 - 536-OvP-WWTW-400 /401 Rev 0	Drawing references to Landscaping can be found under drawing code AAD. Ref: 536-OvP-WWTW-400 /401 Actual: 3089.30.30.AAD.11.D001/D002 Ref: 536-OvP-WWTW-402 Actual: 3089.30.30.AAD.11.D003 Ref: 536-OvP-WWTW-403 Actual: 3089.30.30.AAD.11.D004 Ref: 536-OvP-WWTW-404 Actual: 3089.30.30.AAD.11.D005 Refer to amended BoQ in Addendum hereafter.
C34	Document C, Volume 4	There are Distribution Boards in the BOQ that are not on the single lines, can these single-line drawings be distributed: <u>Bill No.B9</u> - DB-SOL : Roof Top : IP67 Frame - DB-PV : PV-Room - DB-PV: First Floor Roof <u>Bill No.C57</u> - DB-Flush Mounted (Orange) <u>Bill No.C59</u> - DB-WB Flush Mounted (white) -	Refer to relevant attachment titled *Drawings_Elect.PV* & Drawings_Distribution_Boards distributed with this Notice to Tenderers to reference these drawings.
C35	Document C, Volume 4	Can the following drawings be provided: - New Generator sets - Harmonics Yard	No drawings will be made available for these items as it is subject to finalisation of mechanical design. Generator yard will entail construction of a concrete slab to serve as a plinth for equipment housed in containers.

[redacted]

Item	Reference	Question/Clarification	Response
C36	Document A, Volume 2, Part C2.2, Bill of Quantities	What version of the electronic BoQ has to be submitted with the tender document?	A new electronic BoQ shall be distributed with Addendum No.1 which contains the changes applied. Tenders are to submitted this version with their tender offer. Tenderers should note this version has selected cells locked as part of quality assurance.
Note: CCT City of Cape Town			

[redacted]

DOCUMENT A
VOLUME 1: TENDERING PROCEDURES
Part T1.2 Tender Data
Page 12 to 13

Add the term "or SACPCMP (PrCM or PrCPM)" next to the professional accreditation type listed for Items 1, 2 and 5 in Table 3 as follows:

"

Item No.	Key Personnel Role	Qualification[&]		Professional Accreditation[^]		Relevant Experience[$]		Max. Points per category
		Type	Points	Type	Points	Years	Points	
1	Contract Manager/Director	BEng + MEng	7	ECSA (Pr Eng) **or SACPCMP (PrCM or PrCPM)**	3	>20	20	30
						>15	15	
						>10	10	
		BEng	4	ECSA (Pr Eng) **or SACPCMP (PrCM or PrCPM)**	2	>25	20	
						>20	15	
						>15	10	
		BTech	1	ECSA (Pr Technolo-gist) **or SACPCMP (PrCM or PrCPM)**	1	>25	15	
						>20	10	
						>15	5	
2	Construction Manager (in terms of Clause 4.12 of the GCC)	BEng + MEng	7	ECSA (Pr Eng) **or SACPCMP (PrCM or PrCPM)**	3	>20	15	25
						>15	10	
						>10	5	
		BEng	4	ECSA (Pr Eng) **or SACPCMP (PrCM or PrCPM)**	2	>20	15	
						>15	10	
						>10	5	
		BTech	1	ECSA (Pr Tech) **or SACPCMP (PrCM or PrCPM)**	1	>25	15	
						>20	10	
						>15	5	
5	Integration Manager (Design and program co-ordinator in terms of Clause 1.3.9 of the Contract Data provided by Employer)	BEng + MEng	7	ECSA (Pr Eng) **or SACPCMP (PrCM or PrCPM)**	3	>20	15	25
						>15	10	
						>10	5	
		BEng	4	ECSA (Pr Eng) **or SACPCMP (PrCM or PrCPM)**	2	>25	15	
						>20	10	
						>15	5	
		BTech	1	ECSA (Pr Technolo-gist) **or SACPCMP (PrCM or PrCPM)**	1	>25	10	
						>20	7	
						>15	5	

"

Strike through and replace pages 12 to 13 with 12 (R.1) to 13 (R.1)

[redacted]

DOCUMENT A
VOLUME 1: TENDERING PROCEDURES
Part C2.2 Bill of Quantities
Schedule B1: Provisional Sums and Prime Cost Items
Page B1-2

Remove the payment reference for item B1.21 and replace with PU 8.22 as shown in the table below:
"

Item	Pay. Ref	Description	Unit	Qty	Rate	Amount
	~~8.5~~					
B1.21	~~PSA7.20~~ **PU 8.22**	.1 Passenger lift installation	Sum	-	-	

"

Strike through and replace page B1-2 with B1-2 (R.1)

DOCUMENT A
VOLUME 1: TENDERING PROCEDURES
Part C2.2 Bill of Quantities
Schedule C10: Dewatering Building
Page C10-4

Remove the reference to the drawing before item C10.32 and replace with the term "Dwg CODE WLA" as shown in the table below:
"

Item	Pay. Ref	Description	Unit	Qty	Rate	Amount
	SANS	CLADDING AND SHEETING				
	1200 HB					
		Supply, deliver to site and fix cladding and sheeting including all necessary approved fasteners, closures, seals, etc and cutting and nothing complete (colour Pebble Grey)				
		~~Dwg 3089.92.00.WOB.16.U001 &U002 & D001~~				
		Dwg CODE WLA				
		ROOF SHEETING				
	8.2.2	0.58mm Klip-Lok 700 Chromadek Z200 galvanised, and colour coated bothy sides roof sheeting fixed to				
C10.32		1. Timber purlins	m^2	90		

"

Strike through and replace page C10-4 with C10-4 (R.1)

DOCUMENT A
VOLUME 1: TENDERING PROCEDURES
Part C2.2 Bill of Quantities
Schedule C46: Membrane plant
Page C46-8

Remove the reference to the drawing before item C46.63 as shown in the table below:
"

[redacted]

Item	Pay. Ref	Description	Unit	Qty	Rate	Amount
	8.28.2	Purpose made powder coated aluminium glazed shopfronts supplied and installed complete with glazing, ironmongery, etc to manufacturers specification, and sealing all round frames, adjoining walls, ceilings, floors, etc with approved sealant				
		Type ISF001 & 002				
		~~Dwg CT1397-6201~~				
C46.63		.1 Shopfront size 920 x 2440mm high	no	10		

"

Strike through and replace page C46-8 with C46-8 (R.1)

DOCUMENT A
VOLUME 1: TENDERING PROCEDURES
Part C2.2 Bill of Quantities
Schedule C60: Electrical Installation
Page C60-20 to C60-22

Strike through the wording included in items C60.380 up to and including items C60.402 as shown in the table below:

"

Item	Pay. Ref	Description	Unit	Qty	Rate	Amount
		SECURITY				
	ESEC	DESIGN, DRAWINGS AND GENERAL				
~~C60.380~~	~~PSESEC~~	~~Provide designs, calculations as stipulated in the~~	~~Sum~~			
	-	~~contract (refer to project specifications PSESEC-1)~~	-			
	-	-				-
~~C60.381~~	~~ESEC~~	~~Provide operating all maintenance manuals and~~	~~Sum~~			
		~~"as-built" drawings~~				
		.....				
~~C60.401~~	~~ESEC~~	~~Commissioning of an complete 316~~	~~No.~~	~~16~~		
	~~6.3 (b)~~	~~stainless steel gooseneck (refer to particular~~				
		~~specifications)~~				
~~C60.402~~	~~ESEC~~	~~Commissioning of an complete that is~~	~~No.~~	~~16~~		
	~~6.3 (b)~~	~~equal or similar to Centurion G-Speak (refer~~				
		~~to particular specifications)~~				

" (Note: Table provides indicative reflection of amendment requirements, for detailed overview refer to replacement pages)

Strike through and replace pages C60-20 to C60-22 with C60-20 (R.1) to C60-22 (R.1)

DOCUMENT A
VOLUME 1: TENDERING PROCEDURES
Part C2.2 Bill of Quantities
Schedule D7: Landscaping
Page D7-11

Remove the drawing references shown next to items D7.188 to D7.191 and replace with the term Dwg CODE AAD as shown in the table below:

[redacted]

"

Item	Pay. Ref	Description	Unit	Qty	Rate	Amount
		Street furniture				
		Supply & install per drawings				
D7.188		Pergola and Seat Wall Planter (~~DWG 536-OvP-WWTW-400 /401 Rev 0~~ **Dwg CODE AAD**)	sum	-	-	
D7.189		Bins (~~DWG 536-OvP-WWTW-402 Rev 0~~ **Dwg CODE AAD**)	sum	-	-	
D7.190		Bollard (~~DWG 536-OvP-WWTW-403 Rev 0~~ **Dwg CODE AAD**)	sum	-	-	
D7.191		Bicycle rack (~~DWG 536-OvP-WWTW-404 Rev 0~~ **Dwg CODE AAD**)	sum	-	-	

"

Strike through and replace page D7-11 with D7-11 (R.1)

DOCUMENT B
VOLUME 2: RETURNABLE DOCUMENTS
Part T2.2: Returnable Schedules
Returnable Schedule 22.6
Page 110

Replace the tender item no's references that refers to bill B10 and replace with B9 as shown in the table below:

"

Tender item no's	**List of items**	**Tender price per UoM (excl VAT)**	**Exempted imported value**	**Tender value net of exempted imported content**	**Imported value**
(8)	*(9)*	*(10)*	*(11)*	*(12)*	*(13)*
A21.371	2.5mm² 1C PVC Green / Yellow Cu Cable				
~~B10.27~~ **B9.27**	16mm² x 4core Cu, SWA, PVC (1000V)				
~~B10.30~~ **B9.30**	6mm² x 4core Cu, SWA, PVC (1000V)				
~~B10.33~~ **B9.33**	10mm² x 1core Cu, PVC, black ECC				
~~B10.36~~ **B9.36**	4mm² x 1core Cu, PVC, black ECC				

" (Note: Table provides indicative reflection of amendment requirements, for detailed overview refer to replacement pages)

Strike through and replace pages 110 to 113 with 110 (R.1) to 113 (R.1)

DOCUMENT B
VOLUME 2: RETURNABLE DOCUMENTS
Part T2.2: Returnable Schedules
Returnable Schedule 22.7
Page 120

[redacted]

Replace the tender item no's references that refers to bill B10 and replace with B9 as shown in the table below:

"

Tender item no's	List of items	Tender price per UoM (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value
(8)	(9)	(10)	(11)	(12)	(13)
~~B10.1~~ **B9.1**	330W Solar PV panel with all connectors, equal or approved similar to MONO PERC (Jinko 60M-V)				
~~B10.3~~ **B9.3**	Mounting Structure: aluminium (AlSiMg 6063, high strength, corrosion resistant) PV array fixed inclination (1 panel single landscape) complete with drilled footings and all minor materials for the amount of 80 x PV panel installations according to the standard specifications and PV layout				
~~B10.5~~ **B9.5**	25kW inverter (string type IP67) complete with DC Isolators, Latest Inverter Firmware, South African Grid Code Settings equal or approved similar to SMA (SUNNY TRIPOWER 25000TL-30)				
~~B10.7~~ **B9.7**	Cluster Controller with all accessories to complete installation equal or approved similar to SMA				

" (Note: Table provides indicative reflection of amendment requirements, for detailed overview refer to replacement pages)

Strike through and replace pages 120 to 121 with 120 (R.1) to 121 (R.1)

DOCUMENT B
VOLUME 2: RETURNABLE DOCUMENTS
Part T2.2: Returnable Schedules
Page 123

In lieu of completing Annex C included in Schedule 22.8 on page 126 and 127 for the designated cement sector the Tenderer shall submit a letter on the bidding company's letterhead that certifies that only local cement will be used. The bidder can refer to the attached undertaking and not declare the % where called for on page 123 to 125 (i.e., declaration certificate). This letter must be included in the tender's submission, as called for under amended Returnable Schedule 27.

DOCUMENT B
VOLUME 2: RETURNABLE DOCUMENTS
Part T2.2: Returnable Schedules
Page 136

Add the following item to the list on Returnable Schedule 27of information to be provided with the tender:

"f. a letter on the bidding company's letterhead that certifies that only local cement will be used."

Strike through and replace page 136 with 136 (R.1).

DOCUMENT B
VOLUME 3: DRAFT CONTRACT
Part C2.1 Pricing Assumptions

[redacted]

Page 171

Add a new item No.15 to the end of the list of pricing assumptions which shall read as follow:

*"15. Where a drawing code is referenced in the Bill of Quantities such a reference shall apply to all drawings with the stated drawing code. The Tenderer shall familiarise itself with all the drawings relevant to a specific structure and make sure it refers to the applicable drawing when pricing the described item in the bill. If the Contractor does not find a drawing that suits the Bill of Quantity description, it shall notify the Engineer and request clarification. The structure code refers to the three-letter included in the drawing number. For example, if the drawing number is 3089.00.00.**AAA**.01.A002, the structure code associated with this drawing is **AAA**."*

Strike through and replace page 171 with 171 (R.1)

DOCUMENT B
VOLUME 3: DRAFT CONTRACT
Part C1.2 Contract Data
Page 142

Add the term "and special non-working days" to the second paragraph after sub-clause 1.1.1.30 as follow:

*"Access to Site shall be given in portions as defined below which is inclusive of the 14 day period referred to in Clause 5.3.2 below and inclusive of non-working days **and special non- working days** referred to in Clause 5.8.1 below:"*

Strike through and replace page 142 with 142 (R.1)

DOCUMENT C
VOLUME 3A: DRAFT CONTRACT
Part C3.6.1 Additions and Variations to Standard Specifications
Page C3.6.1-40

Replace the concrete strength reference in the first, second and fifth underlined paragraph shown as W40MPa/20mm, W35MPa/20mm and 20MPa/20mm with W35MPa/19mm, W35MPa/19mm and 15MPa/19mm, respectively. Specification shall read as follow:

*"... The following elements in the works shall be **W35MPa/19mm** concrete without a crystalline waterproofing admixture with tracing agent:*

a) Foundations
b) All building structures

*The following elements in the works shall be **W35MPa/19mm** concrete with a crystalline waterproofing admixture with tracing agent:*

a) All water retaining structures
b) Valve chambers
c) Miscellaneous structures associated with the water retaining structures
d) -

The following elements in the works shall be W50MPa/20mm concrete without a crystalline waterproofing admixture with tracing agent:

a) -
b) -

[redacted]

The following elements in the works shall be W20MPa/13mm concrete with Sikacem 810 admixture to improve durability, workability, impermeability and abrasion and chemical resistance:

a) Screeds
b) Benching

The following elements in the works shall be **15MPa/19mm** *concrete: ..."*

Strike through and replace page C3.6.1-40 with C3.6.1-40 (R.1)

DOCUMENT C
VOLUME 3A: DRAFT CONTRACT
Part C3.6.1 Additions and Variations to Standard Specifications
Page C3.6.1-58

Replace the paragraph under sub-clause PSHA 2.1.2: Handrails (Clause 5.2.6) with the following:

"Handrails shall conform to all relevant requirements stipulated in in City of Cape Town's GENERAL STANDARDS AND GUIDELINES FOR GUARD-RAIL INSTALLATIONS AND MAINTENANCE AT WASTEWATER TREATMENT WORKS (hereafter referred to as CCT's Handrail Specification), distributed with Addendum No.1 of tender 295Q/2021/22. CCT's Handrail Specification shall take precedence over SANS 1200HA where any conflicting information is specified related to handrails.

Handrails, stanchions and holding down bolts shall be of Grade 316L material, and all stanchion anchors shall be 12 mm diameter unless otherwise indicated in CCT's Handrail Specification."

Strike through and replace page C3.6.1-58 with C3.6.1-58 (R.1)

Yours Faithfully:

[redacted]

.....
On behalf of: [redacted]
Director: Supply Chain Management

ACKNOWLEDGEMENT OF RECEIPT OF NOTICE 2 - FOR AND ON BEHALF OF THE TENDERER: TENDER No. 295Q/2021/22

At ..... on this ..... Day of ..... 20.....

Signature: .....

Name of Signatory: .....
(In ink and capitals)

TENDERER: .....
(Name of firm in ink and capitals)

[redacted]

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

FINANCE
SUPPLY CHAIN MANAGEMENT
[redacted]
Supply Chain Management

T: 021 400 9240
Email: [redacted]

NOTICE TO TENDERERS NO: 3 **6th June 2022**

TENDER 295Q/2021/2022: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

ISSUED DATE: 14 APRIL

CLOSING DATE OF TENDER: 17 June 2022

BOX NUMBER: 175

Dear Sir/Madam

Your attention is specifically drawn to the tender document for the following clarifications and amendments which were sent via notice no.2 and are to be incorporated in the tender document for the abovementioned tender in terms of Clause C.3.2 of Part T1.2 of the Standard Conditions of Tender and you will be deemed to have made any allowance necessary to provide for these amendments in your tender offer.

Please note that the files in the link distributed with notice 2 did not include the file titled '295Q_Addendum_1_ReplacementPages_22_05_30". This file includes all the replacement pages to the Tender Document. Attached is the missing file that was not distributed hereto.

Tenderers are to return a signed copy of this notice/addendum with the submission of their Tender. Failure to return a signed copy of the Addendum may result in the Tender being declared Non-Responsive.

Yours faithfully,
[redacted]
.....
For: [redacted]

Director: Supply Chain Management

WRITTEN ACKNOWLEDGEMENT OF RECEIPT OF NOTICE 3 – 295Q/2021/22

Signature ..... **Date** .....

Legal and full name of tendering entity:

.....

[redacted]

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

FINANCE
SUPPLY CHAIN MANAGEMENT

Rochelle Arendse
Supply Chain Management

T : 021 400 4706
E: [redacted]

13 JUNE 2022

NOTICE TO TENDERERS NO. 4
(Pages 4)

TENDER NO: 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

BOX NUMBER: 175

CLOSING DATE: 17 June 2022 @ 10h00

Your attention is specifically drawn to the tender document for the following clarifications and amendments which are to be incorporated in the tender document for the abovementioned tender in terms of Clause C.3.2 of Part T1.2 of the Standard Conditions of Tender and you will be deemed to have made any allowance necessary to provide for these amendments in your tender offer.

Kindly be advised that tenderers must complete Schedule 24, page 129 in Part T2.2 of Volume 2 (DOCUMENT B) of the Contract Document.

QUESTIONS AND RESPONSES RECEIVED SUBSEQUENT TO NOTICE TO TENDERERS No. 2 AND UP TO THE ISSUE OF THIS NOTICE:

The following table lists clarifications which have been communicated to the CCT via official communication channels. It should be noted that where questions or clarifications have been submitted and is not specifically addressed herein, the relevant party shall accept that the answer to the question or clarification shall be accepted as "specified in the tender document".

Tenderers shall note that these clarifications are FOR INFORMATION PURPOSES ONLY.

Item	Reference	Question/Clarification	Response
C1	General	Can the specification for the geotubes be provided?	The type and specification of Geotubes shall be done in strict accordance with the suppliers' recommendations.
C2	General	Can the type of sludge in each pond be confirmed?	All sludge associated with the ponds at the Potsdam WWTW can be accepted as un-stabilised (i.e., hazardous).
C3	General	Is the stockpile material available for use by the Contractor?	Available stockpile material is measured as "STOCKPILE TO FILL WITH MATERIAL STOCKPILED ON SITE". Available quantity of stockpiled material has been measured in the BoQ. Contractor to accept that no additional material will be made available from this stockpile.
C4	Document A, Volume 1, Part T1.2, Clause C.2.1.4.3.3, Table 2, Page 10	Will the Tendering Entity score points for projects done by its parent company in other countries?	Scores will only be provided to the tenderer (companies submitting the tender), its JV partners (if any) and sub-contractors listed in Returnable Schedule 18. To be eligible for points

[redacted]

Item	Reference	Question/Clarification	Response
			under functionality criteria, a copy of the relevant completion certificates must be submitted, and the certificate must reflect the listed company name (i.e. either the tenderer, JV partner or sub-contractor).
C5	Document A, Volume 2, Part C2.2, Bill no. A16, Item A16.12, Page A16-2 & Document C, Volume 4, Drawing EAM-EE-GS-045	Purpose made doors and frames: The BOQ states, 'hot dip galvanised steel' material. However, the drawings display 3CR12 material, which is stainless steel. Which material of construction should be used?	Purpose made doors and frames to be manufactured with 3CR12. Refer to addendum below.
C6	Document A, Volume 2, Part C2.2, Bill no A21 & C60, Items A21.316, A21.327,C60.356 & C60.367, Pages A21-17 & C60-19	Fire Panel: Does the line item 'Gas release Panel and all accessories' account for the gas cylinders required for the fire detection and suppression system?	Allowance for gas cylinders is covered in item B1.7 as a provisional sum. Provision in BoQ for Gas release panel and accessories shall be struck through and ignored. Refer to addendum below.
C7	Document A, Volume 2, Part C2.2, Bill no. B7, Items B7.277-B7.279, Page B7-22 & Document C, Volume 4, Drawing 3089.92.00.SUA.16.X001	Management building skylights: The product codes in the BOQ refer to square Velux Skylights. However, on drawing 3089.92.00.SUA.16.X001 and others, skylights are shown as segmented circular skylights. Please advise?	Contractor can accept that domed circular skylights shall be used. Refer to addendum below.
C8	Document A, Volume 2, Part C2.2, Bill no. C3, Items C3.328 – C3.335, Page C3-23	Must the clear and grubbed material from the ponds be disposed at Vissershok High Hazard Landfill?	Vegetation cleared from the ponds can be accepted as non-hazardous. Contractor to identify suitable disposal site.
C9	Document A, Volume 2, Part C2.2, Bill no. C3, Items C3.336 – C3.342, Pages C3-23 & C3-24	Is the sludge from the ponds disposed at Vissershok High Hazard Landfill or can it be used for agricultural purposes?	Sludge from the reedbeds is to be disposed at Vissershok. Refer to Notice 2's item C24. Refer to the response in item C2 above for other requirements on remaining ponds.
C10	Document A, Volume 2, Part C2.2, Bill no. C60, Items C60.4-C60.7, Page C60-1	The BOQ refers to 'Supply and delivery to site complete DB' for: - PSPMC-6.A: Substation No.1 ['24 Head of Works] - PSPMC-6.B: Substation No.2 ['24 Primary Sedimentation, Ultra-fine Screens and '24 BNR Reactor Substation] - PSPMC-6.C: Substation No.3 [Sludge Management Substation] - PSPMC-6.D: Substation No. 4A ['24 Membrane Reactor and UV Substation] - PSPMC-6.E: Substation No.4B [x2]['24 Membrane Reactor Re-use Pump Station]	No drawings will be provided for substation DB's. Refer to referenced electrical specification for detailed description of what must be allowed for.

[redacted]

Item	Reference	Question/Clarification	Response
		Can these DB drawings be provided?	
C11	Document A, Volume 2, Part C2.2, Bill no D5, Items D5.17, D5.18 & D5.40, Pages D5-2, D5-3 & D5-5	What is the depth to which the bill items D5.17, D5.18 and D5.40 must be applied?	Thickness of wet to dry epoxy shall be applied strictly in accordance with suppliers' recommendations. Concrete depth is not considered here.
C12	Document A, Volume 2, Part C2.2, Bill no D7, Item D7.51, Page D7-5	Can the Landscape specification and Detail 1 for plant support be provided?	Refer to revised dwg. 3089.30.30.AAD.11.U004 for detail on tree support. This drawing is distributed with this Notice 4.
C13	Document A, Volume 2, Part C2.2, Bill no D7, Items D7.184 – D7.186, Page D7-11	Does the unit 'No.' refer to the number of pavers or is this meant to be m^2?	Measured as "No". Refer to drawing 3089.30.30.AAD.11.D003 to D005.
C14	Document A, Volume 2, Part C2.2, Bill no D7, Item D7.191, Page D7-11 & Document C, Volume 4, Drawing 536-OvP-WWTW-404 Rev 0	Can a more detailed drawing for the pavers around the bicycle racks be provided?	No additional detail will be provided. Allowance made to price special activity of casting units in paved area (i.e., making hole for post in paving, etc.).
C15	Document A, Volume 2, Part C2.2, Bill no D7, Items D7.189, D7.190 &D7.191, Page D7-11	Can the quantities of the bill items D7.189, D7.190 &D7.191 be provided?	Contractor to accept same quantities as specified in BoQ items D7.184, D7.185, D7.186.
C16	Document C, Volume 4, Drawing 3089.00.00.AAB.10.U001, Item No.1	Is there sufficient power at the Intake sub-station to supply Tower Cranes?	Contractors can accept that the current Eskom supply is sufficient for temporary construction installations.
C17	Document C, Volume 4, Drawing 3089.30.01.AAC.01.U001	Engineer's establishment: Detail C2 on the drawing shows a 12m x 3m mobile office split into three. The notes, however, say the unit must be divided into two offices. Please advise?	The building shall consist of 3 offices. Refer to updated drawing distributed with this Notice for correct note.
C18	Document C, Volume 4, Drawing 3089.0.11.WIA.14.ST10	Construction joints in Bioreactor: Bill items C22.61-C22.70 refer to drawing 3089.0.11.WIA.14.ST10, which is not in the tender pack. Can this drawing be provided?	The drawing reference in the BoQ should be read as 3089.30.40.WIA.14.U001. Please refer to addendum below. This drawing is distributed with this Notice.
C19	Document C, Volume 4	Bill Items B8.49, B8.106, C61.61, D4.267 and D4.279 refer to Block out roller blinds in respective drawings: - 3089.92.00.SUA.16.D001 - 3089.92.00.SUA.16.D002 - 3089.92.00.WHA.16.D001 - 3089.92.00.SUF.16.D001 However, no dimensions are given for the roller blinds in these drawings. Can this detail be provided?	Contractor to reference openings shown in tender drawings. Refer to windows as shown or the relevant door and window schedules.
C20	Document C, Volume 4	Solar PV: Bill items B9.11 and B9.12 refer to supply and installation of smart meter in drawing which is not in drawing pack:	Refer to attachment Drawings_Elect.PV distributed with Notice 2 drawing. 3089.30.01.SUA.23.A301. Refer to

[redacted]

Item	Reference	Question/Clarification	Response
		- 3089.30.01.SUA.23.K304 Can this drawing be provided?	correction of reference in addendum below.
C21	Document A, Volume 2, Part C2.2, Bill of Quantities		A new electronic BoQ shall be distributed with Notice 4 which contains the changes applied. Tenders are to submit this version with their tender offer. Tenderers should note this version has selected cells locked as part of quality assurance.

[redacted]

ADDENDUM NO. 2
(Pages 4)

TENDER NO: 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

BOX NUMBER: 175

CLOSING DATE: 17 June 2022 @ 10h00

Your attention is specifically drawn to the tender document for the following clarifications and amendments which are to be incorporated in the tender document for the abovementioned tender in terms of Clause C.3.2 of Part T1.2 of the Standard Conditions of Tender and you will be deemed to have made any allowance necessary to provide for these amendments in your tender offer.

Kindly be advised that tenderers must complete Schedule 24, page 129 in Part T2.2 of Volume 2 (DOCUMENT B) of the Contract Document.

DOCUMENT A
VOLUME 2: RETURNABLE DOCUMENTS
Part C2.2 Bill of Quantities
Schedules A16, A17, A19, A20, C10, C11, C44, C45,C46,C47,C51,C52,C53,C54 & C55
Pages A16-2, A17-6, A19-3, A20-6 C10-8, C11-6, C44-2, C45-2, C46-7, C47-2, C51-5, C52-6, C53-6, C54-2 & C55-2

Remove the reference to "Hot dip galvanized steel" listed under the description "PURPOSE MADE DOORS AND FRAMES" and replace it with "3CR12 steel", as shown in the table below:

Item	Payment Reference	Description	Unit	Qty	Rate	Amount
	PU	PURPOSE MADE DOORS AND FRAMES				
	8.8	PURPOSE MADE DOORS AND FRAMES Purpose made doors and frames supplied and built into brickwork, etc complete Dwg EAM-EE-GS-045 ~~(Hot dip galvanized steel)~~ **3CR12 steel**				
A16.12		Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete	no	1		

(Note: Table provides indicative reflection of amendment requirements, for detailed overview refer to replacement pages)

Strike through and replace the following pages:

A16-2 with A16-2(R.1)
A17-6 with A17-6(R.1)
A19-3 with A19-3(R.1)
A20-6 with A20-6(R.1)
C10-8 with C10-8(R.2)
C11-6 with C11-6(R.1)
C44-2 with, C44-2(R.1)
C45-2 with C45-2(R.1)
C46-7 with C46-7(R.2)
C47-2 with C47-2(R.1)
C51-5 with C51-5(R.1)
C52-6 with C52-6(R.1)

[redacted]

C53-6 with C53-6(R.1)
C54-2 with C54-2(R.1)
C55-2 with C55-2(R.1)

DOCUMENT A
VOLUME 2: RETURNABLE DOCUMENTS
Part C2.2 Bill of Quantities
Schedules A21 & C60
Pages A21-17 & C60-19

Remove the line item "Gas release Panel and all accessories" in all sections, which include "Fire Detection and Suppression" as shown in the table below:

Item	Payment Reference	Description	Unit	Qty	Rate	Amount
		FIRE DETECTION AND SUPPRESSION				
	EPFD 1.1	SUPPLY AND DELIVERY TO SITE				
A21.315		Fire Panel complete with operating and LCD display unit with panel controller, universal power supply, batteries, housing, rails, battery controller module, analogue addressable line module, zone modules, annunciator modules, relay modules, input/output modules, communication module, interface module, all other modules required to successfully commission the Fire detection system [To City of Cape Town Specification]	No	1		
~~A21.316~~		~~Gas release Panel and all accessories~~	~~No~~	~~1~~		

(Note: Table provides indicative reflection of amendment requirements, for detailed overview refer to replacement pages)

Strike through and replace pages A21-17 & C60-90 with A21-17(R.1) and C60-19(R.2)

[redacted]

DOCUMENT A
VOLUME 2: RETURNABLE DOCUMENTS
Part C2.2 Bill of Quantities
Schedule B7 MANAGEMENT BUILDING
Pages B7-21& B7-22

In the Skylights section of the bill, add the reference drawing "Ref dwg 3089.92.00.SUA.16.U002 and 16 X001", add to the product code description "domed skylights", and amend the sizes of the skylights in line items B7.277, B7.278 and B7.279 as shown in the table below:

Item	Payment Reference	Description	Unit	Qty	Rate	Amount
	PU	**SKYLIGHTS**				
	8.20	Velux CFP white PVC fixed flat roof skylight - or similar approved - with laminate glass inner and acrylic protective dome installed to manufacturers specifications **Ref dwg 3089.92.00.SUA.16.U002 and 16 X001** Product code: CFP150150 and 73UT **(domed skylights)**				
B7.277		.1 Skylight size ~~(800 x 800mm)~~ **R=670mm**	no	1		
B7.278		.2 Skylight size ~~(1200 x 1200mm)~~ **R=2280mm (Segmented)**	no	4		
B7.279		.3 Skylight size ~~(1500 x 1500mm)~~ **R=1200mm**	no	6		

Strike through and replace pages B7-21& B7-22 with B7-21(R.1) and B7-22(R.1)

DOCUMENT A
VOLUME 2: RETURNABLE DOCUMENTS
Part C2.2 Bill of Quantities
Schedule B9 MANAGEMENT BUILDING
Page B9-2

Remove the Smart Meter reference drawing "DWG.3089.30.01.SUA.23.K304" and replace it with reference drawing "DWG.3089.30.01.SUA.23.K301" as shown in the table below:

Item	Payment Reference	Description	Unit	Qty	Rate	Amount
	PSRPV.7.7	Smart meter complete with CT's and wiring, equal or approved similar to Janitza (compatible 4Q UMG 103) ~~(DWG.3089.30.01.SUA.23.K304)~~ **DWG.3089.30.01.SUA.23.K301**				
B9.11		i) Supply	no	1		
B9.12		ii) Install	no	1		

Strike through and replace page B9-2 with B9-2(R.1)

[redacted]

DOCUMENT A
VOLUME 2: RETURNABLE DOCUMENTS
Part C2.2 Bill of Quantities
Schedule C22 BIOREACTOR
Page C22-5

Remove the reference to dwg 3089.10.11.WIA.14.ST10 and replace it with 3089.30.40.WIA.14.U001 as shown in the table below:

Item	Payment Reference	Description	Unit	Qty	Rate	Amount
		CONSTRUCTION JOINTS				
		Floor slabs, walls, duct, slabs, and walls are to be cast in panels with certain sections cast 28 days later. The following items are for stop ends to form open strips where concrete is cast later. ~~(Ref dwg.3089.30.40.WIA.14.U001)~~ **Ref dwg.3089.30.40.WIA.14.U001** 1. Formwork to edges of slabs, walls, etc cut to fit around reinforcing and other services. Later removed and edge of concrete scabbled and cleaned and approved bonding agent applied before new adjoining concrete cast, complete				

Strike through and replace page C22-5 with C22-5(R.1)

[End of Notice]

Thanking you

[redacted]

.....
On behalf of: Basil Chinasamy
Director: Supply Chain Management

NOTICE No. 4

ACKNOWLEDGEMENT OF RECEIPT OF NOTICE 4- FOR AND ON BEHALF OF THE TENDERER: TENDER No. 295Q/2021/22

At ..... on this ..... Day of ..... 20.....

Signature: .....

Name of Signatory: .....
(In ink and capitals)

TENDERER: .....
(Name of firm in ink and capitals)

[redacted]

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

FINANCE
SUPPLY CHAIN MANAGEMENT

Rochelle Arendse
Senior SCM Practitioner
T: 021 400 4706
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E: tendersandcontracts.enquiries@capetown.gov.za

18 August 2022

H&I Joint Venture
Tygerberg Valley Road
Hillcrest Estate
Durbanville
7551

Attention: Brett Ellis **Email:** tenders@hiconstruction.co.za

Dear Sir

TENDER NO: **295Q/2021/22**
DESCRIPTION: **CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT**

TENDER CLARIFICATION NO. 1

The City of Cape Town (CCT) is currently busy with the evaluation process for the above tender, and in terms of clauses C.2.17 and C.3.10 of the Contract Document, please clarify the following items in order for the CCT to proceed with the evaluation of this Tender.

This clarification does not constitute as a second opportunity of the tendering process, it is merely for clarification purpose.

You are required to provide the following details pertaining to the particulars requested, refer to **Annexure 1** and **Annexure 2** which provides the specific items to be substantiated and/or clarified in terms of Clause C.2.1.4.3.3 i) Table 2 and Clause C.2.1.4.3.3 ii) Table 3, respectively.

Please provide your response via e-mail by **16h00 Thursday, 25 August 2022** via e-mail to RochelleEdwina.Arendse@capetown.gov.za and Chantelle.Arnolds@capetown.gov.za

Yours Faithfully,

For: Basil Chinasamy
Director: Supply Chain Management

H&I JV

Our Ref: Potsdam295/ak/001/2022

24 August 2022

CITY OF CAPE TOWN
Supply Chain Management

ATTENTION: [redacted]

TENDER NO: 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT.

With reference to your letter dated 18 August 2022 (TENDER CLARIFICATION NO. 1), please see below our response.

1. ANNEXURE 1 - Please see response, and requested information in Annexure 1 attached.

Further to the above, and attached, your Clarification letter makes numerous requests for provision of a Completion Certificate as per **Clause 5.14.4** of the GCC (2015) or equivalent version thereof, which has been signed by the **relevant Employer**.

General Conditions of Contract 2015, and 2010 – Clause 5.14.4

Clause 5.14.4 of the GCC states that "the **Employers Agent shall deliver** to the Contractor and the Employer a Certificate of Completion". Please see attached extracts from the GCC. (Annexure 1 – Attachments 1, and 2).

Further to this, The Guide to the General Conditions of Contract 2015, as published by the South African Institution of Civil Engineering (SAICE), provides a Pro Forma Certificate of Completion, in which there is only provision for signature by the Employers Agent. Please see attached Pro Form Certificate. (Annexure 1 – Attachment 3).

It is therefore evident, that it is not a requirement for the Certificate of Completion to be signed by the relevant Employer, and that signature by the Employers Agent is in line with the Contractual Requirements, as set out in the GCC.

General Conditions of Contract 2004 – Clause 51.4

Clause 51.4 of the GCC states that "the **Engineer shall issue** to the Contractor and the Employer a Certificate of Completion". Please see attached extract from the GCC. (Annexure 1 – Attachment 4).

It is therefore evident, that it is not a requirement for the Certificate of Completion to be signed by the relevant Employer, and that signature by the Employers Agent is in line with the Contractual Requirements, as set out in the GCC.

[redacted]

The Joint Building Contracts Committee (JBCC)

JBCC 2014

Clause 21.6 of the JBCC states that "the **Principal Agent shall inspect the works and within ten working days Issue** the certificate of final completion to the contractor with a copy to the employer". Please see attached extract from the JBCC. (Annexure 1 – Attachment 5)

It is therefore also evident, that it is not a requirement for the Certificate of Completion to be signed by the relevant Employer, and that signature by the Principal Agent is in line with the Contractual Requirements, as set out in the JBCC.

JBCC 2007

Clause 25.2.1 of the JBCC states that "the **Principal Agent shall forthwith Issue** a certificate of works completion to the contractor with a copy to the employer". Please see attached extract from the JBCC. (Annexure 1 – Attachment 6)

It is therefore also evident, that it is not a requirement for the Certificate of Completion to be signed by the relevant Employer, and that signature by the Principal Agent is in line with the Contractual Requirements, as set out in the JBCC.

2. ANNEXURE 2 - Please see requested information in Annexure 2 attached.

We trust the attached supporting documents, and clarifications, meets with your approval. Should you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully,

[redacted]

CONTACT DETAILS

[redacted]

POSTAL ADDRESS

Private Bag X3,

[redacted]

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

FINANCE
SUPPLY CHAIN MANAGEMENT

[redacted]
Senior SCM Practitioner
T: 021 400 4706
E: [redacted]
E: tendersandcontracts.enquiries@capetown.gov.za

29 September 2022

H&I Joint Venture
[redacted]

Attention: [redacted]

Email: [redacted]

Dear Sir

TENDER NO: **295Q/2021/22**
DESCRIPTION: **CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT**

TENDER CLARIFICATION NO. 2

The City of Cape Town (CCT) is currently busy with the evaluation process for the above tender, and in terms of clauses C.2.17 and C.3.10 of the Contract Document, please clarify the following items in order for the CCT to proceed with the evaluation of this Tender.

This clarification does not constritute as a second opportunity of the tendering process, it is merely for clarification purpose.

Your declarations for local production and content has been duly completed however where designated sectors include sub sectors, declaration per sub sector is required for record purposes. The sectors required include:

1. Schedule 22.2: Conveyance Pipes,
2. Schedule 22.3: Plastic Pipes,
3. Schedule 22.7: Solar PV Components

For this purpose we have included the following documentation to be completed with this correspondence:

4. Declarations of local content and production for each of the sub sectors,
5. A revised Annex C which seperates the sub sector items in Excel format,
6. Extracts of your submitted shedules listed above for reference purposes,
7. With reference to you Schedule 22.5 Furniture, a value of imported content has been declared however no rate of exchange has been included in your submission. Please complete the required declaration and Annex C.

Please complete and sign the documentation in full and provide your response via e-mail by **16h00 Thursday, 06 October 2022** via e-mail to RochelleEdwina.Arendse@capetown.gov.za and Chantelle.Arnolds@capetown.gov.za

Yours Faithfully [redacted]

For: Basil Chinasamy
Director: Supply Chain Management

[redacted]

H&I JV

Our Ref: Potsdam295/ak/002/2022

04 October 2022

CITY OF CAPE TOWN
Supply Chain Management

ATTENTION: Rochelle Arendse

TENDER NO: 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT.

We refer to your letter dated 29 September 2022 - TENDER CLARIFICATION NO. 2.

Please see attached updated and amended declarations for local productions, which now include sub sectors, as per your request.

We trust the attached supporting documents, and clarifications, meets with your approval. Should you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully,

[redacted]

CONTACT DETAILS
[redacted]

POSTAL ADDRESS
[redacted]

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

FINANCE
SUPPLY CHAIN MANAGEMENT

[redacted]
Senior SCM Practitioner
T: 021 400 4706
E: [redacted]
E: [redacted]

06 October 2022

H&I Joint Venture
[redacted]

Attention: [redacted] **Email:** [redacted]

Dear Sir

TENDER NO: **295Q/2021/22**
DESCRIPTION: **CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT**

With reference to the your response regarding Tender Clarification No.2 dated 04 October 2022, we have gone through the attachments and have the following query.

In your clarification response we compared your original tender submission local content sector (Schedule 22.7) for "Solar PV Components" Annex C to that of the clarification response local content Annex C for the sub-sector "Inverter" (Schedule 22.7.5) and noted that the local content value and percentage reduced from your original submission. See excerpts below.

Please clarify why the values has been changed?

Complete and sign the documentation in full and provide your response via e-mail by **12h00 Friday, 07 October 2022** via e-mail to RochelleEdwina.Arendse@capetown.gov.za and Chantelle.Arnolds@capetown.gov.za

Yours Faithfully,

For: [redacted]
Director: Supply Chain Management

[redacted]

SATS 1286.2011

Annex C

Local Content Declaration - Summary Schedule

(C1)	Tender No.	295Q/2021/22
(C2)	Tender description:	Build - Upgrade and expension Potsdam WWTP
(C3)	Designated product(s)	Solar PV Components
(C4)	Tender Authority:	City of Cape Town
(C5)	Tendering Entity name:	H&I JV
(C6)	Tender Exchange Rate:	Pula EU GBP
(C7)	Specified local content %	15-90%

Note: VAT to be excluded from all calculations

		Calculation of local content					
Tender item no's	List of items	Tender price per UoM (excl VAT)	Exempted imported value	Tender value- net of exempted imported content	Imported value	Local value	Local content % (per item)
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)
B9.1	335W Solar PV panel with all connectors, equal or approved similar to MONO PERC (Jinko JKM-V)	2680,04	0	2680,04	0	2680,04	100%
B9.3	Mounting Structure: aluminium (AlSiMg 6063, high strength, corrosion resistant) PV array fixed inclination (1 panel single landscape) complete with drilled footings and all minor materials for the amount of 80 x PV panel installations according to the standard specifications and PV layout	2238,63	0	2238,63	0	2238,63	100%
B9.6	25kW inverter (string type IP67) complete with DC isolator, Local inverter Firmware, South African Grid Code Settings equal or approved similar to SMA (SUNNY TRIPOWER 25000TL-30)	59138,46	0	59138,46	18483,1	40655,36	69%
B9.7	Cluster Controller with all accessories to complete installation equal or approved similar to SMA	18854,07	0	18854,07	0	18854,07	100%

Tender summary			
Anticipated Annual Tender Qty (m)	Total tender value	Total exempted imported content	Total imported content
(C16)	(C17)	(C18)	(C19)
64	225123,36	0	0
23	51488,49	0	0
1	59138,46	0	18483,1
1	18854,07	0	0

(C20)	Total tender vala	354 604,38	
(C21)	Total Exempt Imported content	0,00	
(C22) Total	Tender value net of exempt Imported content	354 604,38	
			18 483,10
			336 121,28
			95%

Signature of tenderer from Annex B

[redacted]

Date [redacted] 10/06/2022

SATS 1286.2011

Annex C

Local Content Declaration - Summary Schedule

(C1)	Tender No.	295Q/2021/22
(C2)	Tender description:	Build - Upgrade and expansion Potsdam WWTP
(C3)	Designated product(s)	Inverter
(C4)	Tender Authority:	City of Cape Town
(C5)	Tendering Entity name:	
(C6)	Tender Exchange Rate:	Pula: EU: GBP:
(C7)	Specified local content %	

		Calculation of local content					
Tender item no's	List of items	Tender price per UoM (excl VAT)	Exempted imported value	Tender value- net of exempted imported content	Imported value	Local value	Local content % (per item)
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)
B9.5	25kW Inverter (string type IP67) complete with DC Isolators, Latest Inverter Firmware, South African Grid Code Settings equal or approved similar to SMA (SUNNY TRIPOWER 25000TL-30)	59138.46	0	59138.46	35483.08	23655.38	40%

Tender summary			
Anticipated Annual Tender Qty (m)	Total tender value	Total exempted imported content	Total imported content
(C16)	(C17)	(C18)	(C19)
	59138.46	0	35483.076

(C20) Total tender value	59138.46	
(C21) Total Exempt Imported content	0	
(C22) Total Tender value net of exempt imported content	59138.46	
(C23) Total imported content		35483.076
(C24) Total local content		23655.384
(C25) Average local content % of tender		40%

Signature of tenderer from Annex B

[redacted]

Date: 29/09/22

C:\Users\bellis\Desktop\My Documents\Potsdam Civils\H&I Annexure C 290922

1

[redacted]

H&I JV

Our Ref: Potsdam295/ak/003/2022

06 October 2022

CITY OF CAPE TOWN
Supply Chain Management

ATTENTION: [redacted]

TENDER NO: 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT.

We refer to your letter dated 06 October 2022 – Annexure C: Schedule 22.7.5

Please see corrected Annexure 22.7.5. Please ignore the previous submission.

In our haste to submit the requested documentation, we made a simple clerical error in our updated submission to yourselves.

Further to this, all the information submitted with our Original Tender remains valid and binding.

We trust the attached supporting documents, and clarifications, meets with your approval. Should you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully,

[redacted]

CONTACT DETAILS
[redacted]

POSTAL ADDRESS
[redacted]

Zandile Matutu

From: Sameeh Johaadien <Sameeh.Johaadien@capetown.gov.za>
Sent: Friday, 13 January 2023 14:35
To: Gideon de Villiers; Marco Slabbert; Zandile Matutu
Subject: FW: 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WWTP: Draft MOA
Attachments: S Kotze Authorised Signatory.pdf

Afternoon guys,

FYI, see attached and below.

Kind regards

Sameeh Johaadien
Principal Professional Office: Wastewater Branch – Water and Sanitation Department; Water and Waste Directorate; City of Cape Town
Tel: 021 400 1097 | **Cell:** 072 491 7161

From: Gerardo Cirillo <gcirillo@hiconstruction.co.za>
Sent: Friday, 13 January 2023 13:23
To: Sameeh Johaadien <Sameeh.Johaadien@capetown.gov.za>
Cc: Keith Olsen <Keith.Olsen@capetown.gov.za>; Clint Coleridge <Clint.Coleridge@capetown.gov.za>; Tasneem Salie <Tasneem.Salie2@capetown.gov.za>; Hein Esau <Hein.Esau@capetown.gov.za>; Yaasin Naidoo <Muhammad.Naidoo@capetown.gov.za>; 'Stephan Kotze' <skotze@hiconstruction.co.za>
Subject: RE: 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WWTP: Draft MOA

CAUTION: This email originated outside of the City of Cape Town's network. Please do not click on any links or open attachments unless you know and trust the source. **STOP. THINK. VERIFY.**

Dear Sameeh,

Herewith our comments associated with the MOA:

Inclusion of the Preamble

Clause 1.2: Reference to Brett Ellis needs to be removed and replaced with Stephan Kotze. (We have attached a copy of the document authorising Stephan Kotze as the Authorised Signatory).

Clause 3.2: This clause is ambiguous. We believe that it should be drafted to make it clear that the contract will terminate 55 months from the actual commencement date (Excluding any approved extension of time and excluding the 12 month defects notification period). It does not make sense to us that a termination date is specified without knowing the date of the actual commencement date.

Clause 6.3: We have no issue with this clause from a quality of work point of view, but we would just like to highlight that the concept of fit for purpose is a function of the design of the plant for which we are not fundamentally responsible. The principle of fit for purpose is more aligned to a design and construct contract. Please ask your legal team to consider this and help us to understand your thoughts or interpretation of this clause from a fit for purpose point of view in relation to a contractor that is not responsible for the fundamental design?

Replacement Pages

[redacted]

We have no issue with your inclusion of the replacement pages issued during the tender period.

Tender Notices, Addendums and Clarification Correspondence

We have no issue with your inclusion of the tender notices, addendums and clarification correspondence under the Schedule of Deviations under Part 1: Form of Offer and Acceptance.

Additional Clauses have been included under the Part 3: Contract Specific Data (See Clauses 11 to 13)

We have no issue with the inclusion of clauses 11, 12 and 13 as part of the Contract Specific Data as instructed by National Treasury.

We trust the above to be in order and look forward to your response.

Kind Regards,

[redacted]

The information contained in this e-mail transmission is confidential and may be subject to legal privilege. Access to this e-mail and any attachments by anyone other than the intended addressee is unauthorised and any use, dissemination, distribution, publication or copying of the information contained herein is strictly prohibited. Whilst every effort has been made to ensure that no viruses are present in this email or its attachments H&I can take no responsibility of whatever nature for loss or damage howsoever arising from this e-mail or its attachment/s. We strongly recommend that you subject this email and all of its attachments to your own virus checking procedures prior to the opening of any attachments.

From: Sameeh Johaadien <Sameeh.Johaadien@capetown.gov.za>
Sent: Thursday, 12 January 2023 15:01
To: Gerardo Cirillo <gcirillo@hiconstruction.co.za>
Cc: Keith Olsen <Keith.Olsen@capetown.gov.za>; Clint Coleridge <Clint.Coleridge@capetown.gov.za>; Tasneem Salie <Tasneem.Salie2@capetown.gov.za>; Hein Esau <Hein.Esau@capetown.gov.za>; Yaasin Naidoo <Muhammad.Naidoo@capetown.gov.za>; 'Stephan Kotze' <skotze@hiconstruction.co.za>
Subject: RE: 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WWTP: Draft MOA

Dear Gerardo,

Your e-mail is noted. We will direct all future correspondence as indicated.

I will await your response by COB tomorrow.

Kind regards

Sameeh Johaadien
Principal Professional Office: Wastewater Branch – Water and Sanitation Department; Water and Waste[redacted]
Directorate; City of Cape Town

Tel: 021 400 1097 | **Cell**: 072 491 7161

From: Gerardo Cirillo <gcirillo@hiconstruction.co.za>
Sent: Thursday, 12 January 2023 14:49
To: Sameeh Johaadien <Sameeh.Johaadien@capetown.gov.za>
Cc: Keith Olsen <Keith.Olsen@capetown.gov.za>; Clint Coleridge <Clint.Coleridge@capetown.gov.za>; Tasneem Salie <Tasneem.Salie2@capetown.gov.za>; Hein Esau <Hein.Esau@capetown.gov.za>; Yaasin Naidoo <Muhammad.Naidoo@capetown.gov.za>; 'Stephan Kotze' <skotze@hiconstruction.co.za>
Subject: FW: 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WWTP: Draft MOA

CAUTION: This email originated outside of the City of Cape Town's network. Please do not click on any links or open attachments unless you know and trust the source. **STOP. THINK. VERIFY.**

Dear Sameeh,

With reference to your email below.

Thank you for providing us with the links to the MOA document.

We have downloaded and reviewed the document and will provide you with our comments by no later than close of business tomorrow (13 January 2023).

Furthermore, would you kindly direct all future correspondence pertaining to this project to:

1. [redacted]
2.

Brett Ellis will be leaving H&I at the end of February 2023 and will therefore no longer play a role in the management of this project.

We are really looking forward to the successful completion of this project with the City of Cape Town.

Kind Regards,

H&I | [redacted]

The information contained in this e-mail transmission is confidential and may be subject to legal privilege. Access to this e-mail and any attachments by anyone other than the intended addressee is unauthorised and any use, dissemination, distribution, publication or copying of the information contained herein is strictly prohibited. Whilst every effort has been made to ensure that no viruses are present in this email or its attachments H&I can take no responsibility of whatever nature for loss or damage howsoever arising from this e-mail or its attachment/s. We strongly recommend that you subject this email and all of its attachments to your own virus checking procedures prior to the opening of any attachments.

From: Sameeh Johaadien <Sameeh.Johaadien@capetown.gov.za>
Sent: Friday, 23 December 2022 16:24

[redacted]

To: [redacted]
Cc: Keith Olsen <Keith.Olsen@capetown.gov.za>; Clint Coleridge <Clint.Coleridge@capetown.gov.za>; Tasneem Salie <Tasneem.Salie2@capetown.gov.za>; Hein Esau <Hein.Esau@capetown.gov.za>; Yaasin Naidoo <Muhammad.Naidoo@capetown.gov.za>
Subject: 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WWTP: Draft MOA

Dear [redacted]

With reference to the above mentioned project, please follow the links below to the respective draft MOA for the above mentioned project for your review. Due to file limitations, the MOA has been separated into four parts and the respective hyperlinks are using our BigFiles large data share tool. It should be noted that there is a time limit for the download of the files from the listed links (13/01/2023).

- Part 1:https://web1.capetown.gov.za/web1/BigFilesAccess/DownloadBigFile.aspx?file=cbd0efad-d138-4d52-82eb-1eceb911470a
- Part 2:https://web1.capetown.gov.za/web1/BigFilesAccess/DownloadBigFile.aspx?file=e8794daa-3e88-4fd8-a1ce-2423e1861c04
- Part 3:https://web1.capetown.gov.za/web1/BigFilesAccess/DownloadBigFile.aspx?file=d9e89733-62f0-4265-b342-908de32a22b4
- Part 4:https://web1.capetown.gov.za/web1/BigFilesAccess/DownloadBigFile.aspx?file=1f5177ac-20f9-4337-a435-5fd5b3a64d1e

In brief, the MOA is a reformulation of your tender submission with the following amendments:

1. Inclusion of the "Preamble" to the MOA,
2. All replacement pages issued during the tender period forms part of the MOA and included with the visible R/R1, etc. listed page number,
3. Tender Notices, addendums and clarification correspondence have been include under the Schedule of Deviations under Part 1: Form of Offer and Acceptance,
4. Additional clauses have been included under the Part 3: Contract Specific Data (See Clauses 11 to 13) as included by our Legal Services and instruction by National Treasury.

Please note that we are planning to make the Council meeting in March 2023 for final award and hence require your feedback in a short time frame in order to keep within our programme. We require your feedback of your review and acceptance by the 13 January 2023 of the draft MOA or any comment thereto.

In addition, I will be on leave from this afternoon and will return to the office on the 9 January 2023. During this time, you can contact Keith Olsen (CC'ed into this email) should you have any queries.

Kind regards

Sameeh Johaadien
Principal Professional Officer: Wastewater Branch – Water and Sanitation Department; Water and Waste Directorate
4th Floor, Water and Sanitation Head Office, 8 Voortrekker Road, corner of Mike Pienaar Boulevard, Bellville, 7535
Tel: 021 400 1097 | **Cell:** 072 491 7161 | **Email:** sameeh.johaadien@capetown.gov.za | **Web:** www.capetown.gov.za
CCT Contacts | **Report Water Issues - Email:** Water@capetown.gov.za | **Call Center:** 0860 103 089 | **SMS:** 31373

[redacted]

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[redacted]

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

BULK WATER DEPARTMENT
WATER AND SANITATION DIRECTORATE

Keith Olsen
Head: Projects and Implementation

T: +27 21 400 2651 **M:** +27 84 609 8668
E: Keith.Olsen@capetown.gov.za

REFERENCE NO: 295Q/2021/22 MOA

DATE: 17/01/2023

H&I Joint Venture

Attention: [redacted] **per Email:** [redacted]

Dear Sirs

RE: 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT: MOA RESPONSE

We refer to your response email dated 13 January 2023 which included comments to the draft MOA for the above mentioned project forwarded per email to you on 23 December 2022.

With reference to the comments in your email forwarded, we respond below per section of your comments to the MOA as follows:

Inclusion of the Preamble:

1. General: While not raised in your correspondence, we noted that the joint venture is titled as "H&I JV" as per the Joint Venture Agreement included under Schedule 3 of your tender submission, however the MOA includes different naming conventions made to the JV in the Preamble. This will be reviewed and replaced with "H&I JV" which will be made in the final version of the MOA.
2. Clause 1.2: We note the removal of Mr Brett Ellis and inclusion of Mr Stephan Kotze as the Authorised Signatory.
3. Page 3, Clause 3.2:
   - 3.1 We note that the letter of award (subject to provisions stated therein) issued by our Supply Chain Management (SCM) and the draft MOA refers to the Contract Duration as 55 months as opposed to the 1645 days stated in the Contract Specific Data Clause. To clarify, the accurate conversion of 1645 days to months is 54.0822 months. Hence for brevity, the rounded up figure of 55 months was utilised, included as such in the SCMBAC resolution issued and used in the formulation of the MOA. The correct Contract Duration is 1645 days which will be utilised in determining the actual contractual completion date once the Commencement Date has been finalised.
   - 3.2 While we note that it is nonsensical that a Termination Date is specified without knowing the actual Commencement Date, the termination date stated in the

SCMBAC resolution and letter of award issued by our SCM is linked to the financial budgeting plan of the project which ends on 30 June 2028.

3.3 Page 3 par 3.2: We propose to amend the clause to read, "Unless terminated earlier or unless an extension of time for completion is granted to the Contractor in accordance with the provisions as set out in the GCC or any other provision in terms of this Contract, this Contract shall commence on the Commencement Date and shall terminate on 55 months after the Commencement Date and terminate on 30 June 2028 which excludes the 12 month defects liability period". The termination date stated in the table on Page 15 in the row titled "Accepted contract duration", will be removed under both heading columns of "Employer" and "Contractor". With the clarification provided above and the proposed amended of Clause 3.2 of the Preamble, please confirm your agreement.

4. Page 3, Clause 3.2: While not raised in your email, we noted the heading for Section 4 of the Preamble title, "MUTUAL GOOD FAITH / CO-OPERATION" had erroneously been shown as the last sentence of the Clause. This will be amended and shifted as the heading, "4. MUTUAL GOOD FAITH / CO-OPERATION" above Preamble Clause 4.1.
5. Page 4, Clause 6.3: Concept of "fit for purpose": Clause 6.3 is utilised in all MOA compilations by the City of Cape Town for either "design-build" or "employer design" type construction projects. In the case of this project which is of employer design construction project utilising the GCC 2015 Conditions of Contract, the "fit for purpose" is related to the Contractors area of responsibility in terms of the Contract. An example could be water tightness of a water retaining structure. We trust this clarifies your query.

Replacement Pages:

1. We note you have no issues with the inclusion of the replacement pages included in the MOA.

Tender Notices, Addendums and Clarification Correspondence:

1. We note that you have no issues or comments with the inclusion of the tender notices, addendums and clarifications under the Schedule of Deviations of Part 1 Form of Offer and Acceptance (Agreement).

Additional Clauses included under Part 3: Contract Specific Data (Clauses 11 to 13):

1. Addition of Clause 11, 12 and 13 under Part 3 Contract Specific Data: We note that you have no issues or comment regarding the inclusion of the new clauses.

Thank for your feedback regarding the draft MOA forwarded. As per our email on 23 December 2022, we are planning to make the Council meeting in March 2023 for final award and hence require your feedback in a short time frame in order to keep within our programme. To assist us, we would like to request response in writing regarding the above by the close of business on 17 January 2023.

[redacted]

Yours sincerely,

[redacted]

.....

FOR REPORTING/ QUERIES:
Phone: *0860 103 089* | ***WhatsApp:*** *060 018 1505* | ***SMS:*** *31373 (max 160 characters)* |
Email: water@capetown.gov.za | ***Online:*** www.capetown.gov.za/servicerequests
Visit *a walk-in Customer Interaction Center, see* www.capetown.gov.za/facilities |

PART 2: GENERAL CONDITIONS OF CONTRACT

[redacted]

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

C1.2 Contract Data

Part 1: Contract Data provided by the Employer

GENERAL CONDITIONS OF CONTRACT

The following standardised General Conditions of Contract:

General Conditions of Contract for Construction Works, Third Edition, 2015

prepared by the South African Institution of Civil Engineering (SAICE) shall apply to and form the General Conditions of Contract for this contract. Copies of these conditions of contract are obtainable from the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, e-mail: civilinfo@saice.org.za.

Copies of the General Conditions of Contract are available for inspection and scrutiny at the offices of the Employer.

The Pro-formas bound with the General Conditions of Contract 2015, on pages 96 to 113 shall not apply to this Contract and shall be replaced with the documents bound into this Contract Document.

The General Conditions of Contract make several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the general conditions of contract.

The General Conditions of Contract shall be read in conjunction with the variations, amendments and additions set out in the Contract Specific Data below. Each item of data given below is cross-referenced to the clause in the General Conditions of Contract to which it mainly applies.

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

a) the Form of Offer and Acceptance,
b) the Contract Specific Data within the Contract Data,
c) the General Conditions of Contract for Construction Works, Third Edition, 2015,
d) the Scope of Work,
e) the Drawings,
f) the Pricing Data, and
g) the conditions of tender, the tender data and tender schedules

If an ambiguity or discrepancy is found in the documents, the Employer's Agent shall issue any necessary clarification or instruction.

CONTRACT SPECIFIC DATA

The following contract specific data, referring to the General Conditions of Contract for Construction Works, Third Edition, 2015, are applicable to this Contract:

Clause 1.1.1.2:

Add the following after "Bill of Quantities":

, also referred to as Bills of Quantities,

Clause 1.1.1.13:

The Defects Liability Period for each Portion shall be as follow:
Portion A 365 days

[redacted]

PART 3: CONTRACT SPECIFIC DATA

[redacted]

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

C1.2 Contract Data

Part 1: Contract Data provided by the Employer

GENERAL CONDITIONS OF CONTRACT

The following standardised General Conditions of Contract:

General Conditions of Contract for Construction Works, Third Edition, 2015

prepared by the South African Institution of Civil Engineering (SAICE) shall apply to and form the General Conditions of Contract for this contract. Copies of these conditions of contract are obtainable from the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, e-mail: civilinfo@saice.org.za.

Copies of the General Conditions of Contract are available for inspection and scrutiny at the offices of the Employer.

The Pro-formas bound with the General Conditions of Contract 2015, on pages 96 to 113 shall not apply to this Contract and shall be replaced with the documents bound into this Contract Document.

The General Conditions of Contract make several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the general conditions of contract.

The General Conditions of Contract shall be read in conjunction with the variations, amendments and additions set out in the Contract Specific Data below. Each item of data given below is cross-referenced to the clause in the General Conditions of Contract to which it mainly applies.

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

a) the Form of Offer and Acceptance,
b) the Contract Specific Data within the Contract Data,
c) the General Conditions of Contract for Construction Works, Third Edition, 2015,
d) the Scope of Work,
e) the Drawings,
f) the Pricing Data, and
g) the conditions of tender, the tender data and tender schedules

If an ambiguity or discrepancy is found in the documents, the Employer's Agent shall issue any necessary clarification or instruction.

CONTRACT SPECIFIC DATA

The following contract specific data, referring to the General Conditions of Contract for Construction Works, Third Edition, 2015, are applicable to this Contract:

Clause 1.1.1.2:

Add the following after "Bill of Quantities":

, also referred to as Bills of Quantities,

Clause 1.1.1.13:

The Defects Liability Period for each Portion shall be as follow:
Portion A 365 days

[redacted]

Portion B	365 days
Portion C	450 days (inclusive of Portion C-Sub-section A)
Portion C Sub-section A	The period ending on the end date of the Defects Liability Period of Portion C as a whole

Clause 1.1.1.14:

The time for achieving Practical Completion for the respective portions of work as set out in the Scope of Work shall be as defined below, which is inclusive of the 14 day period referred to in Clause 5.3.2 below, and inclusive of non-working days and special non-working days referred to in Clause 5.8.1:

a) For Portion A within four hundred and eighty (480) days.
b) For Portion B within one thousand one hundred and ninety (1190) days.
c) For Portion C Sub-section A within four hundred and fifty (450) days.
d) For Portion C within nine hundred and twenty (920) days.
e) For the whole of the Works (i.e., all Portions) within one thousand six hundred and forty five (1645) days.

Clause 1.1.1.15:

The **Employer** is the CITY OF CAPE TOWN, represented by the Director : BULK SERVICES and/or such other person or persons duly authorised thereto by the Employer in writing.

The name of the Employer is: CITY OF CAPE TOWN
Bulk Services: The Water and Sanitation Department

and is referred to in the Contract documents by the terms "Employer", "City of Cape Town" or "Council" as the context provides.

Clause 1.1.1.16:

The **Employer's Agent**, referred to in the Contract documents, is the firm of Bigen Africa Services (Pty) Ltd acting through a director, an associate or an official authorised thereto in writing.

The name of the Employer's Agent is: Bigen Africa Services (Pty) Ltd

The name of the Employer's Agent's Representative is: [redacted]

Clause 1.1.1.26:

The Pricing Strategy is a Re-measurement Contract.

Clause 1.1.1.30:

Add the following Clauses after Clause 1.1.1.30:

Access to Site shall be given in portions as defined below which is inclusive of the 14 day period referred to in Clause 5.3.2 below and inclusive of non-working days **and special non- working days** referred to in Clause 5.8.1 below:

a) For Portion A within one hundred and twenty (120) days.
b) For Portion C Sub-section A within ninety (90) days (only partial access inclusive storage tanks area).
c) For Portion D after RFBO, expected to be within one thousand four hundred and thirty (1430) days.
d) For Portion C, excluding Portion C Sub-section A, within two hundred and ten (210) days.
e) For Portion B after five hundred and sixty (560) days.

Add the following Clauses after Clause 1.1.1.34:

1.1.1.35 "**Drawings**" means all drawings, calculations and technical information forming part of the Contract Documents and any modifications thereof or additions thereto from time to time approved in writing by the Employer's Agent or delivered to the Contractor by the Employer's Agent.

1.1.1.36 "**Letter of Notification**" means the letters of formal notification, signed by the Employer, of the decision of the Supply Chain Management Bid Adjudication Committee sent to all tenderers. The notification of the decision does not form part of the Employer's Acceptance of the successful tenderer's Offer and no rights shall accrue.

1.1.1.37 **"Intellectual Property"** means any and all intellectual property rights of any nature anywhere in the world whether registered, registerable or otherwise, including patents, trademarks, registered designs and domain names, applications for any of the foregoing, trade or business names, copyright and rights in the nature of copyright, design rights, rights in databases, know-how, trade secrets and any other intellectual property rights which subsist in computer software, computer programs, websites, documents, information, techniques, business methods, drawings, logos, instruction manuals, lists and procedures and particulars of customers, marketing methods and procedures and advertising literature, including the "look and feel" of any websites

1.1.1.38 **"Ready for Beneficial Operation"** (RFBO) means the status of the Works at the point in time when the whole Works excluding Portion D can be certified by the Engineer as beneficially operatable by the Employer and after decommissioning of mechanical and electrical works of the '97 Plant.

Clause 1.2.1.2:

The address of the Employer is:

Physical address:	Tower Block, Civic Centre 12 Hertzog Boulevard Cape Town 8001
Postal address:	P O Box 298 Cape Town 8001
E-mail address:	[redacted]

Clause 1.2.1.2:

The address of the Employer's Agent is:

Physical address:	[redacted]
Postal address:	
E-mail address:	

Clause 1.3:

Delete Clause 1.3.5 in its entirety and replace with the following:

1.3.5 Intellectual Property

1.3.5.1 The Contractor acknowledges that it shall not acquire any right, title or interest in or to the Intellectual Property of the Employer.

1.3.5.2 The Contractor hereby assigns to the Employer, all Intellectual Property created, developed or otherwise brought into existence by it for the purposes of the contract, unless the Parties expressly agree otherwise in writing.

1.3.5.3 The Contractor shall be deemed to have given the Employer a non-terminable, transferable, non-exclusive, royalty-free licence to copy, use and communicate the Contractor's documents, including making and using modifications of such documents for further work required to the Works.

1.3.5.4 The Contractor shall, and warrants that it shall:

1.3.5.4.1 not be entitled to use the Employer's Intellectual Property for any purpose other than as contemplated in this contract;

1.3.5.4.2 not modify, add to, change or alter the Employer's Intellectual Property, or any information or data related thereto, nor may the Contractor produce any product as a result of, including and/or arising from any such information, data and Intellectual Property, and in the event that it does produce any such product, the product shall be, and be deemed in law to be, owned by the Employer;

1.3.5.4.3 not apply for or obtain registration of any domain name, trademark or design which is similar to any Intellectual Property of the Employer;

1.3.5.4.4 comply with all reasonable directions or instructions given to it by the Employer in relation to the form and manner of use of the Employer Intellectual Property, including without limitation, any brand guidelines which the Employer may provide to the contractor from time to time;

1.3.5.4.5 procure that its employees, directors, members and contractors comply strictly with the provisions of clauses 1.3.5.4.1 to 1.3.5.4.3 above;

unless the Employer expressly agrees thereto in writing after obtaining due internal authority.

1.3.5.5 The Contractor represents and warrants to the Employer that, in providing goods, services or both, as the case may be, for the duration of the contract, it will not infringe or make unauthorised use of the Intellectual Property rights of any third party and hereby indemnifies the Employer from any claims, liability, loss, damages, costs, and expenses arising from the infringement or unauthorised use by the contractor of any third party's Intellectual Property rights.

1.3.5.6 In the event that the contract is cancelled, terminated, ended or is declared void, any and all of the Employer's Intellectual Property, and any and all information and data related thereto, shall be immediately handed over to the Employer by the contractor and no copies thereof shall be retained by the contractor unless the Employer expressly and in writing, after obtaining due internal authority, agrees otherwise.

Add the following Clause after Clause 1.3.6:

1.3.7 The parties agree that this contract shall also be subject to the Employer's Supply Chain Management Policy ('SCM Policy') that was applicable on the date the bid was advertised, **save that if the Employer adopts a new SCM Policy which contemplates that any clause therein would apply to the contract emanating from this tender, such clause shall also be applicable to that contract.** Please refer to this document contained on the CCT's website.

1.3.8 Abuse of the supply chain management system is not permitted and may result in cancellation of the contract, restriction of the supplier, and/or the exercise by the Employer of any other rights and remedies available to it as described in the SCM Policy.

1.3.9 Conditions Precedent

1.3.9.1 This Contract 295Q/2021/22: CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT, the award of Contract 295Q/2021/22, the subsequent letter of appointment issued to the winning bidder (Contractor) and the appointment of the Contractor is subject to the fulfilment of the following conditions precedent:

1.3.9.1.1 A period of 21 (twenty one) days after the award of Contract 295Q/2021/22 has lapsed without an appeal lodged against the said award as contemplated in Section 62 of the Municipal Systems Act 32 of 2000;

1.3.9.1.2 The successful conclusion of a Section 33 of the Municipal Finance Management Act 32 of 2003 process pertaining to Contract 295Q/2021/22.

1.3.9.1.3 Pertaining to Contract 146Q/2021/22, DESIGN – BUILD OF MECHANICAL AND ELECTRICAL WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT:

a) Contract 146Q/2021/22 must be awarded to a winning bidder;

b) A period of 21 (twenty one) days after the award of Contract 146Q/2021/22 has lapsed without an appeal lodged against the said award as contemplated in Section 62 of the Municipal Systems Act 32 of 2000;

c) The successful conclusion of a Section 33 of the Municipal Finance Management Act 32 of 2003 process;

[redacted]

d) A letter of appointment must be issued to the winning bidder;

e) All conditions precedent in the letter of appointment must be fulfilled and the appointment of the winning bidder for Contract 146Q/2021/22 must be unconditional, binding and enforceable.

1.3.9.1.4 All other conditions precedent included in the letter of appointment to the Contractor for Contract 295Q/2021/22 must be fulfilled and the appointment of the Contractor must be unconditional, binding and enforceable.

1.3.9.2 The Parties shall (to the extent same falls within their power) use reasonable commercial endeavours to procure the fulfilment of these conditions precedent as soon as reasonably possible after the submission of the bid.

1.3.9.3 If all of these conditions precedent are not fulfilled or waived, this Contract 295Q/2021/22, the award of Contract 295Q/2021/22, the subsequent letter of appointment issued to the Contractor and the appointment of the Contractor shall be of no force or effect and no Party shall have any claim against any other party for anything done hereunder or arising here from.

1.3.9.4 The Conditions precedent in Clause 1.3.9.1 may not be waived unless by written agreement of the Employer.

Clause 3.1

Delete clause

Clause 3.2.2
Add the following at the end of the clause:

If, in exercising any discretion, the result of such decision would be to utilise the contingency allowance, increase the contract value or granting of time for practical completion, the Employer's Agent must obtain approval from the Employer that such funding or time is available and granted by the Employer to be awarded prior to finalising such a decision.

Clause 3.2.3:

The Employer's Agent shall obtain the specific approval of the Employer before executing any of his functions or duties according to the following Clauses of the General Conditions of Contract or Contract Data:

a) Clause 3.3.1 Nomination of Employer's Agent's Representative
b) Clause 3.3.4 Employer's Agent's authority to delegate
c) Clause 5.8.1 Non-working times
d) Clause 5.11.2 Suspension of the Works
e) Clause 5.12.4 Acceleration instead of extension of time
f) Clause 6 All actions in terms of the clause subject to 3.2.2 of Contract Data.
h) Clause 6.10.10 Advance payment, for items not listed in the Advance Payment Schedule.
i) Clause 10.1.5 All actions in terms of the clause subject to 3.2.2 of Contract Data.

Clause 3.3.2.2.3:
Delete the words "oral or" from the clause

Clause 3.3.2.2.4:
Delete the words "oral or" from the clause

Clause 4.1:

Add the following Clause after Clause 4.1.2:

4.1.3 Where the Contract is based on an alternative tender offer submitted by the Tenderer/Contractor, he shall, notwithstanding acceptance of the offer by the Employer, be liable for any deficiency in the alternatives proposed, for any costs in ensuring that the alternatives meet the Employer's standards and requirements, and for any loss or damage arising out of such error or deficiency.

4.1.4 Co-operation and co-ordination of construction activities

The Site incorporates treatment processes and infrastructure that is in permanent use by the Employer plus construction activities of new infrastructure by other contractors. The Contractor shall accommodate the Employer and other contractors in this regard:

[redacted]

a) The main mechanical and electrical works including equipment, majority of the cast in items and main electrical supply will be carried out by a contractor employed by the Employer, hereafter referred to as the "Mechanical and Electrical contractor" or "M&E contractor".

b) The Contractor shall be responsible for providing all the necessary information and inputs to the Employer's Agent in a timely manner to avoid delays or re-work to the execution of the main civil works and main mechanical and electrical works.

c) Co-operation and communication between the Employer's Agent, Contractor and M&E contractor for purposes of co-ordinating the main M&E works activities and the Contractor's activities will take place as follows:

   i. The Employer's Agent (or his mandated representative) will establish and chair a Co-ordination Meeting that will meet at regular weekly intervals. The Contractor shall mandate the approved coordination personnel to attend this meeting who are technically proficient and competent in their specific fields of practice to review programmes, provide information and inputs so that activities can be effectively and expeditiously planned and coordinated and so that changes required during execution are minimised.

   ii. In addition to the abovementioned meeting the Contractor shall be responsible for on-going communicating with the M&E contractor and to monitor and inspect the M&E Contractor's installation activities on the Site in order to verify that setting out, dimensions, positions, sizes and quality of materials, etc. meet with the design specification and requirements, and to co-ordinate the timing of his own activities to comply with planned and contractual completion dates. Any discrepancies in the mechanical and electrical works that require remediation must be reported to the Employer's Agent promptly on a daily basis including any aspects that will have a time related impact on the Contractor's Programme.

d) The Contractor's programme and construction activities shall make provision to accommodate and give access to the Contractor's Work in a timely manner to the M&E Contractor for erection and installation of M&E Plant to comply with planned and contractual completion dates.:

4.1.5 Co-operation and communication for design finalisation

The preliminary design of the main civil works has been carried out by the Employer's Agent. These preliminary designs are to be finalised using inputs that shall be provided by the M&E Contractor, typically covering process sizing, technical requirements for housing the specific mechanical, electrical, electronic and process equipment to be supplied, the routing of electrical supply cables, etc.

The Contractor shall be responsible for providing all the necessary information and inputs to the Employer's Agent in a timely manner to avoid delays or re-work to the execution of the main civil works.

Co-operation and communication between the Employer's Agent, Contractor and M&E contractor for purposes of co-ordinating and finalising the design of the main civil works will take place as follows:

a) The Employer's Agent (or his mandated representative) will establish and chair a Design Co-ordination Meeting that will meet at regular weekly intervals. The Contractor shall mandate the approved design personnel to attend this meeting who are technically proficient and competent in their specific fields of practice, to provide information and inputs so that designs can be effectively and expeditiously finalised and so that changes required during execution are minimised.

b) After receiving the Contractor's design input the Employer's Agent will complete the civil construction drawings.

Clause 4.11:

Add the following to Clause 4.11.1:

In order to meet the requirements of this Sub-Clause the Contractor shall commit the named Key Personnel to each of the Key Personnel Roles identified in the Tender Offer, which personnel shall remain permanently assigned to the Contract and dedicated full-time at least until the Employer's Agent agrees that such personnel have completed their assignments. The exception to this will be the situation where any of the Key Personnel ceases to be employed by the Contractor for any reason, or decides to withdraw from the Contractor's team, for reasons beyond the Contractor's control. In such instances the Contractor will be required to submit to the Employer's Agent proposals to replace the Key Person, which will only be considered by the Employer's Agent if the Contractor can show that

the proposed replacement has qualifications and experience equivalent to, or better than, the original Key Person and scores the same or higher than the offered Key person in terms of the Functionality Criteria in the Tender Offer.

Clause 5.3.1:

The documentation required before commencement with Works execution is:

a) Approved Health and Safety Plan (Refer to applicable clause in the Health and Safety Specification in Part C3.5 in the Scope Work)
b) Initial programme (Refer to Clause 5.6)
c) Security (Refer to Clause 6.2)
d) Evidence of Insurance (Refer to Clause 8.6)
e) Occupational Health and Safety Agreement (Part C1.5 in Agreements and Contract Data)
f) Letter of good standing from the Compensation Commissioner, or a licensed compensation insurer (Refer to Clause 4.3)
g) Protection of the Environment Declaration (Part C1.6 in Agreements and Contract Data)
h) Proof of Registration / Letter of Good Standing with the Bargaining Council for the Civil Engineering Industry (BCCEI)

Add the following to Clause 5.3.1:

Such instruction shall, where applicable, also be subject to the issuing, by the Provincial Director of the Department of Labour, of a construction work permit to perform the intended construction work in terms of Clause 5.3.4 below.

Clause 5.3.2:

The time to submit the documentation required before commencement with Works execution is within **14** days.

Clause 5.3.3:

Add the following to Clause 5.3.3:

Notwithstanding the above, where a construction work permit from the Provincial Director of the Department of Labour is required, commencement of the Works shall not be deemed to take place until such construction work permit has been issued by the Provincial Director.

Clause 5.3.4:

Add the following Clause after Clause 5.3.3:

5.3.4 Application for Construction Work Permit

Where the Employer is required to apply to the Provincial Director of the Department of Labour for a construction work permit to perform the intended construction work, the employer shall do so as soon as possible after its Bid Adjudication Committee has awarded the contract, and the period that the Department of labour requires to issue the permit will run concurrently with the appeal period.

Should the issuing of a construction work permit delay the Employer's Agent's instruction to commence executing the Works and this in turn causes a delay to Practical Completion by more than 60days, then the Contractor shall be entitled to make a claim in accordance with Clause 10.1. Should, however, the issuing of a construction work permit be delayed by the submission of a unacceptable draft Health and Safety Plan, in the opinion of either the Employer's Health and Safety Agent, or the Provincial Director of the Department of Labour, no claim for an extension of time will be entertained.

Clause 5.4.2:

Access to and possession of the Site shall not be exclusive to the Contractor insofar as the provisions of Clause 4.8 apply, and where ongoing use by the general public is required.

Add the following Clause after Clause 5.4.3:

5.4.4 The Contractor shall bear all costs and charges for special and temporary rights of way required by it in connection with access to the Site.

Clause 5.6.2.3:

Insert the following after "...approvals,":

... permits,

Clause 5.8.1:

The non-working days are Sundays.

The special non-working days are:

a) All gazetted public holidays.
b) Year-end break(s) not exceeding 15 working days in duration.

Clause 5.12.2.2:

Add the following to Clause 5.12.2.2:

No extension of time will be granted in respect of any delays attributed to normal climatic conditions. Normal climatic conditions shall be deemed to include normal rainfall and associated wet conditions and materials, strong winds and extremes of temperature. However, in the event that delays to critical activities exceed the number of working days listed below for each month, then abnormal climatic conditions shall be deemed to exist, and an extension of time may be claimed in accordance with the provisions of Clause 5.12.

The number of days quoted below shall be regarded as a fair estimate of the delays to be anticipated and allowed for under normal climatic conditions where inclement weather prevents or disrupts critical work.

January	2 days
February	2 days
March	2 days
April	2 days
May	2 days
June	4 days
July	4 days
August	4 days
September	4 days
October	2 days
November	2 days
December	2 days

Claims for delays for abnormal climatic conditions shall be accompanied by substantiating facts and evidence, which shall be submitted timeously as each day or half-day delay is experienced.

It shall be further noted that where the critical path is not affected, no extension of time for abnormal climatic conditions or for any other reason will be entertained.

Clause 5.12.5:

Add the following new Clause after Clause 5.12.4

Clause 5.12.5 Notwithstanding anything to the contrary in the Contract, the Contractor shall not be entitled to an extension of the Time for Practical Completion where he has not used all reasonable endeavours to prevent, reduce or mitigate the delay, including providing such temporary measures as may be necessary to enable work to continue and the Works and Contractor's Equipment to be protected during exceptionally adverse climatic conditions.

Clause 5.13.1:

The penalty for failing to complete the Works shall applied in accordance with the following Table:

Description	Portions				
	A	B	C-Sub-section A	Whole of Portion C	Portion D
Practical Completion	R50,000	R30,000	R50,000	R80,000	R80,000
Note: Rates shown above shall be applied per calendar day and are cumulative.					

Insert the following after "actual date of Practical Completion":

... or, in the case of termination by the Employer in terms of Clause 9.2.1, the actual date of termination,

[redacted]

Clause 5.14.5.1:

Add the following to Clause 5.14.5.1:

...only after issue of a Certificate of Completion for the Whole of the Works.

Clause 5.14.7:

Add the following to Clause 5.14.7:

...with the exception of Clause 5.14.5.1.

Clause 5.16.3:

The latent defects period is **10** years.

Clause 6.2.1:

The security to be provided by the Contractor shall be a performance guarantee of **7%** of the Contract Sum. The performance guarantee shall contain the precise wording of the document included in Part C1.3 of the Contract Data: **Form of Performance Guarantee**, and it shall be issued by a financial institution approved by the Employer at the date when the guarantee is issued. The list of approved financial institutions current at the date of tender is attached to the **Form of Performance Guarantee**.

Clause 6.2.2:

Delete Clause 6.2.2 in its entirety.

Clause 6.2.3:

Delete Clause 6.2.3 in its entirety and replace with the following:

The Contractor shall ensure that the performance guarantee remains valid and enforceable until the Certificate of Completion of the whole of the Works is issued.

Clause 6.5.1.2.3:

The percentage allowance to cover overhead charges is **10%**

Clause 6.8.2:

Add the following to Clause 6.8.2:

The Contract Price shall be subject to contract price adjustment in accordance with Clause 6.8 of the General Conditions of Contract.

If special materials are specified in Part 2 of the Contract Data then the provisions of Clause 6.8.3 of the General Conditions of Contract shall apply to such special materials.

Where applicable, in terms of the foregoing, the value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values:

The value of "x" is 0,10.

The values of the coefficients are:

a = 0,20 b = 0,25 c = 0,50 d = 0,05

The base month is one month prior to the month in which the tender closed

[redacted]

The Contract Price shall be subject to contract price adjustment in accordance with Clause 6.8 of the General Conditions of Contract.

If special materials are specified in Part 2 of the Contract Data then the provisions of Clause 6.8.3 of the General Conditions of Contract shall apply to such special materials."

In addition, the paragraph above this Note to Compiler must be replaced with the following:

"The base month is one month prior to the month in which the tender closed."

Furthermore, the Contract Price Adjustment Schedule shall be amended as follows:

"L" is the "Labour Index" and shall be the Consumer Price Index (CPI) for "All items (CPI Headline)", as published in the Statistical News Release, P0141: Table A – Consumer Price Index: Main Indices of Statistics South Africa.

"P" is the "Plant Index" and shall be the Construction Materials Price Index for "Plant and Equipment" as published in the Statistical News Release P0151.1, Table 4 – Mining and construction plant and equipment price index of Statistics South Africa.

"M" is the "Materials Index" and shall be the Construction Materials Price Index for selected materials, Materials for "Civil Engineering material – roads, general," as published in the Statistical News Release P0151.1, Table 6 – Civil engineering material price indices of Statistics South Africa

"F" is the "Fuel Index" and shall be the Producer Price Index (PPI) for "Coal and Petroleum Products - Diesel", as published in the Statistical News Release P0142.1: Table 1 –PPI for final manufactured goods of Statistics South Africa.

Clause 6.8.3: Variation in the cost of special materials

Price adjustment for variations in the cost of special materials is provided for in the Special Materials Schedule at the end of this Part 1: Contract Data provided by the Employer.

Clause 4.2 of the Contract Price Adjustment Schedule

Delete the words "by the Contractor" that appear after "…. entered in the Contract Data"

Clause 6.8.4:

Add the following to Clause 6.8.4:

Notwithstanding the above, in the event that a public holiday is proclaimed after 28 days before the closing date for tenders, no costs other than those that can be claimed under Clause 5.12.3 shall be added to the contract price.

Add the following after Clause 6.8.4:

6.8.5. If price adjustment for variations in the cost of plant and materials imported from outside of South Africa is provided for in the contract data, such adjustment shall be based on the information contained on the schedule titled "**Price Basis for Imported Resources"** and as below. For the purposes of this clause the Rand value of imported Plant and Materials inserted on the schedule titled "**Price Basis for Imported Resources"** (column (F)) shall be the value in foreign currency (column (A)) converted to South African Rand (column (C)) by using the closing spot selling rate quoted by **Employer's** main banker, [redacted] on the Base Date (seven calendar days before tender closing date) rounded to the second decimal place (column(B)), to which shall be added any Customs Surcharge and Customs Duty applicable at that date (columns (D) and (E)).

6.8.5.1 Adjustment for variations in rates of exchange:

(a) The value in foreign currency inserted in column (A) shall be subject to clause (h) below when recalculating the Rand value.

(b) The rate of exchange inserted in column (B) shall be the closing spot selling rate quoted by **Employer's** main banker, [redacted] on the Base Date, rounded to the second decimal place, subject to sub-paragraph (c) below.

(c) If the rate of exchange inserted by the Tenderer differs from the [redacted] rate referred to above, then the [redacted] rate shall apply and the Rand value in columns (C) and (F) shall

be recalculated accordingly, without altering the price in the Schedules of Quantities for the relevant items.

(d) If a tender from a supplier or sub-contractor provides for variations in rates of exchange, the Contractor may **only** claim for variations in rates of exchange if he binds the supplier or sub-contractor to the same provision to take out forward cover as described in sub-paragraph (e) below.

(e) The Contractor (or supplier or sub-contractor) shall within five working days from the date of placing a firm order on an overseas supplier, cover or recover forward by way of a contract with a bank which is an authorised foreign exchange dealer, the foreign exchange component of the cost of any imported Plant and Materials inserted by the Tenderer on the schedule titled "**Price Basis for Imported Resources**".

(f) When the Contractor (or supplier or sub-contractor) so obtains forward cover, the Contractor shall immediately notify the Employer of the rate obtained and furnish the Employer with a copy of the foreign exchange contract note.

(g) Based on the evidence provided in sub-paragraph (f) above, the value in Rand inserted in column (C) on the schedule titled "**Price Basis for Imported Resources**" shall be recalculated using the forward cover rate obtained, and any increase or decrease in the Rand value defined in this clause shall be adjusted accordingly, subject to sub-paragraph (h) below. Failure to provide such evidence shall result in no such recalculation shall be considered by the Employer.

(h) The adjustments shall be calculated upon the value in foreign currency in the Contractor's (or supplier's or sub-contractor's) **forward cover contract**, provided that, should this value exceed the value in foreign currency inserted in column (A) of the schedule titled "**Price Basis for Imported Resources**", then the value in column (A) shall be used.

6.8.5.2 Adjustment for variations in customs surcharge and customs duty

(a) Any increase or decrease in the Rand value between the amounts of Customs Surcharge and Customs Duty inserted on the schedule titled "**Price Basis for Imported Resources**" and those amounts actually paid to the Customs and Excise Authorities, which are due to changes in the percentage rates applicable or to the foreign exchange rate used by the authorities, shall be adjusted accordingly.

(b) The Tenderer shall state the Customs Duty Tariff Reference applicable to each item and the Contractor shall advise the Employer's Agent of any changes which occur.

6.8.5.3 Adjustment for variation in labour and material Costs

If the prices for imported Plant and Materials are not fixed, the Contractor shall in his Tender specify the formula for calculating Contract Price Adjustments normally used in the country of manufacture and the indices and relative proportions of labour and material on which his Tender prices are based. Evidence of the indices applicable shall be provided with each claim. The indices applicable 42 days before contractual dispatch date from the factory will be used for the purposes of Contract Price Adjustment.

Failure to specify a formula in the Tender shall mean that the prices are fixed or shall be deemed to be fixed.

Clause 6.10.1.5:

Delete Clause 6.10.1.5 in its entirety and replace with the following:

6.10.1.5 The value of Plant and materials:

6.10.1.5.1 up to a percentage limit of **80%** for the Plant and materials referred to in Clause 6.9.1.1 brought on to the Site but not yet built into the Permanent Works;

Provided that the Contractor has produced documentary evidence of ownership of such Plant and/or materials and has delivered to the Employer an indemnity, approved in writing by the Employer, against any claim to or in respect of such Plant and/or materials by reason of the Contractor's sequestration or liquidation, or of any defect in the Contractor's title to the Plant and/or materials;

6.10.1.5.2 which have been manufactured and are stored at places other than the Site, in respect of which the Employer has indicated, on the Advance Payment Schedule, that advance payment will be permitted;

[redacted]

6.10.1.5.3 for which a deposit with order is required from the Contractor by a manufacturer/supplier, only in respect of which the Employer has indicated, on the Advance Payment Schedule, that advance payment will be permitted;

The terms and conditions for advance payment are set out in Clause 6.10.10 and in the Advance Payment Schedule at the end of this Part 1: Contract Data provided by the Employer.

Clause 6.10.1.7:

Add the following after the words "Clause 5.13":

or any other fines or penalties that become due under the Contract.

Clause 6.10.3:

Add the following to Clause 6.10.3:

Notwithstanding the provision of a performance guarantee in terms of Clause 6.2.1, interim payments to the Contractor shall be subject to a retention by the Employer of an amount of **5%** of the said amounts due to the Contractor, with no limit. A guarantee in lieu of retention is not permitted.

Clause 6.10.4:

Add the following to the last sentence of Clause 6.10.4:

…, dated as at the date of delivery of the Contractor's statement to the Employer's Agent.

Add the following to Clause 6.10.4:

Notwithstanding the above, the Employer's Agent shall be empowered to withhold the delivery of the payment certificate until the Contractor has complied with his obligations to report in terms of Clause 4.10.2 and as described in the Scope of Work.

The Contractor may submit a fully motivated application regarding more frequent payment to the Employer's Agent to be submitted to the Employer for consideration. Requests for more frequent payments will be considered at the sole discretion of the Employer and is not a right in terms of this contract.

Clause 6.10.10:

Add the following Clause after Clause 6.10.9:

6.10.10 Advance payment

Subject to Clauses 6.10.1.5.2 and 6.10.1.5.3, and the Advance Payment Schedule, the Employer shall make an advance payment for Plant and materials stored at places other than the Site, or in respect of which a deposit with order is required, only once the Contractor has submitted an advance payment guarantee in accordance with this Clause, the authenticity of which has been verified by the City's Treasury Department..

Unless and until the Employer receives this guarantee, the following paragraphs shall not apply.

The Employer's Agent shall issue an Interim Payment Certificate for, or including, advance payment after receiving a statement under Clause 6.10.1 and after the Employer has received a guarantee in an amount equal to the advance payment requested. This guarantee shall be issued by a financial institution approved by the Employer, as listed in the Annexure in Part C1.3 of the Contract Data, and shall be in the form of and shall contain the precise wording of the document included in Part C1.4: **Form of Advance Payment Guarantee** and shall come into force, be administered and expire in terms thereof**.**

The Employer shall return the guarantee to the Contractor within 14 days after the expiry date.

The provision of the Advanced Payment Guarantee shall be at the Contractor's cost.

The term "deposit" or "deposit with order" used in the context of this Clause and elsewhere by reference to this Clause, means a sum payable by the Contractor to a manufacturer/supplier prior to the manufacture of an item of Plant or material, required at the time of placing an order, the balance of the value of the item being payable later.

[redacted]

Clause 7.8:

Replace the last paragraph of Clause 7.8.1 with the following:

"In the case of any defect in the Plant for which the Contractor is liable which requires repair or replacement of the Plant or any part thereof the Defects Liability Period for such repaired or replaced Plant or part shall commence from the date on which such Plant or part has recommenced operation (and if necessary has passed any repeated Tests on Completion) and shall extend from such date for the period specified in the Contract Data.

The Contractor shall during the Defects Liability Period maintain and uphold the Works and check all Plant for correct operation and functioning at 3 months, 6 months, 9 months and 12 months after Completion. The Contractor shall submit reports to the Employer's Agent after each inspection."

Clause 8.6.1.1.2:

The value of Plant and materials supplied by the Employer to be included in the insurance sum is **R 0.00 (Nil)**.

Clause 8.6.1.1.3:

The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is **R0.00 (Nil).**

Clause 8.6.1.3:

The limit of indemnity for liability insurance is R20 000 000.00 for any single claim – the number of claims to be unlimited during the construction and defects liability periods.

Clause 8.6.1.5:

In addition to the insurances required in terms of General Conditions of Contract Clauses 8.6.1.1 to 8.6.1.4 the following insurance is also required:

a) Insurance of Construction Equipment (including tools, offices and other temporary structures and contents) and other things (except those intended for incorporation into the Works) brought onto the site for a sum sufficient to provide for their replacement.

b) Insurance in terms of the provisions of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.

c) Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger Liability Indemnity.

d) Where the contract involves manufacturing and/or fabrication of the works or part thereof at premises other than the Site, the Contractor shall satisfy the Employer that all materials and equipment for incorporation in the works are adequately insured during manufacture and/or fabrication. In the event of the Employer having an insurable interest in such works during manufacture or fabrication then such interest shall be noted by endorsement to the Contractor's Policies of Insurance.

Clause 8.6.5:

Delete the following from Clause 8.6.5:

"and the terms thereof shall be subject to the approval of the Employer's Agent, which approval shall not be unreasonably withheld."

Clause 8.6.6:

Replace clause 8.6.6 with the following:

The Contractor shall provide evidence in the form stated in the contract data to the Employer's Agent that the required insurances are effected and that all premiums thereunder have been paid.

Clause 9.1:

In Clause 9.1.6 replace "and 9.1.3" with:

, 9.1.3 and 9.1.7

[redacted]

Add the following Clause after Clause 9.1.6:

9.1.7 Death of Sole Proprietor/Member

Upon the death of the Contractor who was a Sole Proprietor, or a sole member of a Close Corporation, the Contract will terminate forthwith. The Employer shall pay to the Contractor's estate any money which it considers due under the Contract in terms of Clause 9.1.5, in full and final settlement thereof.

9.1.8 Material Irregularity during procurement process

The Employer may terminate the contract if a material irregularity vitiates the procurement process leading to the conclusion of the contract, rendering the procurement process and the conclusion of the resulting contract unfair, inequitable, non-transparent, uncompetitive or not cost-effective, provided the Employer follows the processes as described in its SCM Policy.

9.1.9 Reputational risk or harm to the Employer\

The Employer, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate the contract if the implementation of the contract may result in reputational risk or harm to the City as a result of (inter alia):

9.1.9.1 reports of poor governance and/or unethical behaviour;
9.1.9.2 association with known family of notorious individuals;
9.1.9.3 poor performance issues, known to the Employer;
9.1.9.4 negative social media reports; or
9.1.9.5 adverse assurance (e.g. due diligence) report outcomes.

Add the following Clause after Clause 9.2.3:

9.2.4 Employer's Elections in case of Insolvency

In addition to anything else contained in this contract, the Employer may make either of the following elections to ensure its rights are protected and any negative impact on service delivery is mitigated:

9.2.4.1 accept a contractor's proposal (via the trustee / liquidator) to render delivery utilising the appropriate contractual mechanisms; or

9.2.4.2 terminate the contract, as the liquidator proposed contractor is deemed unacceptable to the employer, at any time by giving written notice to the contractor (via the trustee / liquidator).

Clause 10.5.3:

The number of ad-hoc Adjudication Board Members to be appointed is 1(one).

ADDITIONAL CONDITIONS OF CONTRACT

Add the following Clause after Clause 10:

Clause 11 Details to be confidential

The Contractor shall treat the details of the Works comprised in this Contract as private and confidential (save in so far as may be necessary for the purposes hereof) and shall not publish or disclose the same or any particulars thereof in any trade or technical paper elsewhere without the prior written consent of the Employer's Agent.

11 Protection of Personal Information

Sub-Clause 11.1

The Contractor acknowledges that, for the purposes of this agreement, they may come into contact with or have access to personal information and other information that may be classified or deemed as private or confidential and for which Employer is responsible in terms of Protection of Personal Information Act ("POPIA"). Such personal information may also be deemed or considered as private and confidential as it relates to POPIA.

Sub-Clause 11.2

The Contractor agrees that they will at all times comply with POPIA and Employer's Privacy Notice, and that it shall only collect, use and process personal information it comes into contact with pursuant to this agreement in a lawful

[redacted]

manner, and only to the extent required to execute the services, or to provide the goods and to perform their obligations in terms of the service level agreement.

Sub-Clause 11.3

The Contractor agrees that it shall put in place, and at all times maintain, appropriate physical, technological and contractual security measures to ensure the protection and confidentiality of the personal information that it, or its employees, its contractors or other authorised individuals comes into contact in relation to the service level agreement.

Sub-Clause 11.4

The Contractor agrees that it shall notify the Employer immediately where there are reasonable grounds to believe that the personal information of a data subject has been accessed or acquired by any unauthorised person.

Sub-Clause 11.5

Unless so required by law, the Contractor agrees that it shall treat the personal information as confidential and further not disclose any personal information as defined in POPIA to any third party without the prior written consent of the Employer.

Sub-Clause 11.6

The Contractor hereby indemnifies and holds the Employer harmless against all claims, losses, damages and costs of whatsoever nature suffered by the Employer arising from or in relation to the Contractor's (and/or its employees', agents' and sub-contractors') non-compliance with applicable data protection laws and/or other legislation.

Sub-Clause 11.7

The Contractor agrees that the Employer may conduct regular data protection audits on the Contractor and undertakes to give its full co-operation in this regard

12 Review Clause

This Agreement is valid from the commencement date outlined herein and is valid until further notice. This Agreement shall be reviewed once every three years; however, in lieu of a review during any period specified, the current Agreement will remain in effect. The Employer reserves the right to reduce or increase the scope of works according to the dictates of the budget, to terminate this contract, and/or to review and terminate this contract as is contemplated in Section 116(1)(b)(iii) of the Local Government: Municipal Finance Management Act 56 of 2003, without adjustment to the agreed rates, sums or fees and without payment of any penalty or surcharge in this regard. The Contractor shall however be entitled to pro-rata payment for all services carried out in terms of any adjustment to the Scope of Work or, in the case of termination, payment for work done.

13 Performance Monitoring

As required by section 116(2)(b) of the Local Government: Municipal Financial Management Act 56 of 2003, the City shall monitor the performance of the contractor/Contractor on at least a monthly basis, and the Contractor agrees to provide the City with its full cooperation in this regard.

[redacted]

SPECIAL MATERIALS SCHEDULE

Each material dealt with as a special material in terms of Clause 4.1 of the Contract Price Adjustment Schedule of the General Conditions of Contract is stated in the list below. The provisions of Clause 6.8.3 of the General Conditions of Contract shall apply to such special materials. The base prices for the special materials (current at the time of tender) shall be as stated in the schedule below, or where required, shall be furnished by the tenderer/contractor. Only those materials listed by the Employer below shall be considered as special materials.

Special Material	Unit	Base Price
Steel reinforcing bars	ton	The ArcelorMittal prices, as published in their official price lists, current at the time of tender closing, will be used as the base prices for determining the adjustment in steel prices.
Structural steel	ton	

Conditions:

1) When called upon to do so, the contractor shall substantiate the prices to be used to determine the adjustment in respect of the special materials listed above with acceptable documentary evidence.
2) In the case of bituminous products, the Employer has provided, in the schedule above, a base rate for bitumen upon which the tendered rates will be deemed to be based, and which will be used for determining the adjustment in the price of such bituminous products.
3) Where an adjustment for the variation in the price of bituminous products is claimed, the claim must be substantiated by a declaration from the manufacturer, confirming the source of bitumen used in such bituminous products at the time in question.
4) Where the source of bitumen (the refinery) is located in the Western Cape Province, or where bitumen sourced from abroad is landed at a port in the Western Cape, the cost of transporting such bitumen within the boundaries of the Western Cape shall be included in the rate for bituminous products. Extra-over rates to cover the cost of transporting bitumen from beyond the borders of the Western Cape have been measured separately in the Bill of Quantities.
5) Where imported bitumen used in bituminous products is landed at a port beyond the borders of the Western Cape, the importers must clearly state whether or not their price is inclusive of transport to the Western Cape, which will determine whether extra-over transport costs are applicable, or not. The price of the imported bitumen itself must be expressed as a landed price in ZAR.

[redacted]

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

Form of Performance Guarantee

PERFORMANCE GUARANTEE

For use with the Conditions of Contract as described in C1.2: Contract Data Part 1: Contract Data provided by the Employer

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: .....

"Physical address: .....

"Employer" means: The City of Cape Town, WATER AND SANITATION.

"Contractor" means: .....

"Employer's Agent" means: .....

"Works" means: Contract No. **295Q/2021/22 CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT.**

"Site" means: The site as defined in the Contract Data.

"Contract" means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

"Contract Sum" means: The accepted amount inclusive of tax of R .....

Amount in words: .....

"Guaranteed Sum" means: The maximum aggregate amount of R .....

Amount in words: .....

"Expiry Date" means: The date of issue by the Employer's Agent of the Certificate of Completion of Works.

CONTRACT DETAILS

Employer's Agent issues: Interim Payment Certificates, Final Payment Certificate and the Certificate of Completion of the Works as defined in the Contract.

PERFORMANCE GUARANTEE

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.

2. The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.

3. The Guarantor hereby acknowledges that:

3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;

3.2 its obligation under this Performance Guarantee is restricted to the payment of money.

4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:

4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Employer's Agent in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;

4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;

4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.

5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or

5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and

5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.

7. Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

9. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

10. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.

11. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

12. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.

13. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at .....

Date .....

Guarantor's signatory (1) .....

Capacity .....

Guarantor's signatory (2) .....

Capacity .....

Witness signatory (1) .....

Witness signatory (2) .....

[redacted]

ANNEXURE

LIST OF APPROVED FINANCIAL INSTITUTIONS

The following financial institutions are currently (as at 12 October 2021) approved for issue of contract guarantees to the City:

National Banks:

[redacted]

[redacted]

Annexure B: Occupational Health and Safety Agreement

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

Occupational Health and Safety Agreement

AGREEMENT MADE AND ENTERED INTO BETWEEN THE CITY OF CAPE TOWN (HEREINAFTER CALLED THE "EMPLOYER") AND

H&I JV ,
(Contractor/Mandatary/Company/CC Name)

IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993 AS AMENDED.

I, [redacted], representing

H&I JV , as an employer

in its own right, do hereby undertake to ensure, as far as is reasonably practicable, that all work will be performed, and all equipment, machinery or plant used in such a manner as to comply with the provisions of the Occupational Health and Safety Act (OHSA) and the Regulations promulgated thereunder.

I furthermore confirm that I am/we are registered with the Compensation Commissioner and that all registration and assessment monies due to the Compensation Commissioner have been fully paid or that I/We are insured with an approved licensed compensation insurer.

COID ACT Registration Number: .....

OR Compensation Insurer: [redacted] Policy No.: [redacted]

I undertake to appoint, where required, suitable competent persons, in writing, in terms of the requirements of OHSA and the Regulations and to charge him/them with the duty of ensuring that the provisions of OHSA and Regulations as well as the Council's Special Conditions of Contract, Way Leave, Lock-Out and Work Permit Procedures are adhered to as far as reasonably practicable.

I further undertake to ensure that any subcontractors employed by me will enter into an occupational health and safety agreement separately, and that such subcontractors comply with the conditions set.

I hereby declare that I have read and understand the Occupational Health and Safety Specifications contained in this tender and undertake to comply therewith at all times.

I hereby also undertake to comply with the Occupational Health and Safety Specification and Plan submitted and approved in terms thereof.

Signed at BELLVILLE on the 13th day of APRIL 2023

[redacted]

Signed at CAPE TOWN on the 17 day of [redacted] 20 23

[redacted]

Witness

for and on behalf of
City of Cape Town

[redacted]

Annexure C: Protection of the Environment Declaration

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

Protection of the Environment Declaration

PROTECTION OF THE ENVIRONMENT DECLARATION

The Contractor will not be given right of access to the Site until this form has been signed

I/ we, H & I JV .....{Contractor} record as follows:

1. I/ we, the undersigned, do hereby declare that I/ we am/ are aware of the increasing requirement by society that construction activities shall be carried out with due regard to their impact on the environment.

2. In view of this requirement of society and a corresponding requirement by the Employer with regard to this Contract, I/ we will, in addition to complying with the letter of the terms of the Contract dealing with protection of the environment, also take into consideration the spirit of such requirements and will, in selecting appropriate employees, plant, materials and methods of construction, in-so-far as I/ we have the choice, include in the analysis not only the technical and economic (both financial and with regard to time) aspects but also the impact on the environment of the options. In this regard, I/ we recognise and accept the need to abide by the "precautionary principle" which aims to ensure the protection of the environment by the adoption of the most environmentally sensitive construction approach in the face of uncertainty with regard to the environmental implications of construction.

3. I/ we declare that I/ we have read and understood the contents of the Environmental Management Programme (which is comprised of the Environmental Management Specification and its Annexures) for this Contract, and that I/ we understand my/our responsibilities in terms of enforcing and implementing the Environmental Management Programme. I/ we also declare that I/ we have made appropriate provision in my/ our pricing of the Bills of Quantities items for the Environmental Management Programme.

4. I/ we acknowledge and accept the right of the Employer to deduct, should he so wish, from any amounts due to me/ us, such amounts (hereinafter referred to as fines) as the Employer's Agent shall certify as being warranted in view of my/ our failure to comply with the terms of the Contract dealing with protection of the environment, subject to the following:

4.1 The Employer's Agent, in determining the amount of such fine, shall take into account, *inter alia*, the nature of the offence, the seriousness of its impact on the environment, the degree of prior compliance/non-compliance, the extent of the Contractor's overall compliance with environmental protection requirements and, in particular, the extent to which he considers it necessary to impose a sanction in order to eliminate/reduce future occurrences

4.2 The Employer's Agent shall, with respect to any fine imposed, provide me/ us with a written statement giving details of the offence, the facts on which the Employer's Agent has based his assessment and the terms of the Contract (by reference to the specific clause) which has been contravened.

Signed [redacted] Date 13/4/2023

[redacted]

Annexure D: Insurance Broker's Warranty

Insurance Broker's Warranty

Pro Forma

Logo

Letterhead of Contractor's Insurance Broker

Date _____

CITY OF CAPE TOWN
City Manager
Civic Centre
12 Hertzog Boulevard
Cape Town
8000

Dear Sir

CONTRACT NO.: **295Q/2021/22**

CONTRACT TITLE: **CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT**

NAME OF CONTRACTOR: _____

I, the undersigned, do hereby confirm and warrant that all the insurances required in terms of the abovementioned contract have been issued and/or in the case of blanket/umbrella policies, have been endorsed to reflect the interests of the CITY OF CAPE TOWN with regard to the abovementioned contract, and that all the insurances and endorsements, etc., are all in accordance with the requirements of the contract.

I furthermore confirm that all premiums in the above regard have been paid.

Yours faithfully

Signed: _____

For: _____

[redacted]

Annexure E: Contract of Temporary Employment as Community Liaison Officer

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

Contract of Temporary Employment as Community Liaison Officer

Construction Contract No.: .....

PROJECT.....

AGREEMENT made between the CONTRACTOR .....

and the Community Liaison Officer....., hereafter referred to as the CLO, for the appointment and employment of a CLO for the duration of the work in respect of the above named construction contract.

1. **THE PARTIES HAVE AGREED THAT**

The CLO will be employed by the CONTRACTOR on a temporary basis for the duration of the work from the date of signing this agreement to the date of practical completion as defined in the Contract, subject to all the conditions set out below.

2. **THE DUTIES OF THE COMMUNITY LIAISON OFFICER SHALL BE:**

1. to keep the community informed on the progress of the project;
2. to keep the Contractor informed on relevant Community affairs and possible grievances;
3. to manage the recruitment of workers from the Sub-Council Job-Seekers Database;
4. to assist the Contractor's supervisory staff in the management of the workers.

3. **THE FOLLOWING CONDITIONS OF EMPLOYMENT SHALL APPLY:**

The Conditions of Temporary Employment as applicable on this Contract for the workers recruited from the Community shall apply equally to the CLO, except that the rate of remuneration shall be R..... per working day. These conditions that apply are listed below as they appear in the Contract of Temporary Employment:

3.1 If required to work on a statutory public holiday or Sunday the payment will be double the amount stated in the previous paragraph.

3.2 Maximum hours of work:

(i) 9¼ hours per day
(ii) 45 hours per week;
(iii) 5 days per week;
(iv) 5 hours without an interval, whereupon there shall be an interval of at least 30 minutes;
(v) A spread-over period of 12 hours.

3.3 The CLO shall be entitled to payment where he is prevented from working by reasons which are within the control of the Contractor.

3.4 On days when it is raining the Contractor may, before 9 a.m., decide not to open the site and there will be no pay.

If the Contractor closes the site between 9 a.m. and 1 p.m., the CLO will be paid half the daily wage.

If the site works later than 1 p.m., the CLO will be paid the full daily wage.

[redacted]

3.5 Workers and the CLO will not be permitted to work under conditions of:

(i) undisciplined or unruly behaviour;
(ii) insubordination to Team Leader, Supervisors or Management;
(iii) abuse of intoxicating substances;
(iv) criminal actions by the employee;
(v) strike action or political stayaways.

3.6 Workers, including the CLO, may be dismissed after two official written warnings for the following behaviour:

(i) undisciplined or unruly behaviour;
(ii) insubordination to Team Leader, Supervisors or Management;
(iii) abuse of intoxicating substances;
(iv) wilful or negligent damage to or loss of machines or equipment.

The Contractor shall ensure that he has statements from at least two witnesses concerning any of the above situations.
The Contractor shall inform the CLO within 24 hours of any warning issued to workers employed from the Job-Seekers Database.

3.7 The CLO will be paid on a Friday afternoon every two weeks, one week in arrears.

3.8 The CLO shall be given a statement with each payment on which is recorded:

(i) the name of the Contractor;
(ii) the CLO's name;
(iii) the number of days worked by the CLO;
(iv) the rate per day;
(v) the details of any deductions made;
(vi) the actual amount paid to the CLO.

3.9 No deduction shall be made from the remuneration except where the CLO consents in writing or unless the Contractor is permitted or required to do so by law or the order of any competent court.

3.10 The CLO shall be supplied free of charge with all health and safety equipment required by the Occupation Health and Safety Act. The equipment shall remain the property of the Contractor.

3.11 The Contractor must give the CLO at least one week's notice of the termination of the Contract of Temporary Employment. If this is not done, the CLO must be paid earnings for five days. This condition does not apply if the CLO is dismissed.

3.12 At the end of the period of temporary employment, the Contractor shall provide a Certificate of Service recording the Contractor's name, the CLO's name and address, the period of service, the type of work on which the CLO was engaged and the rate of remuneration on termination.

4. **TERMINATION OF AGREEMENT**

4.1 If the CLO can no longer perform and execute his/her duties as detailed in this agreement, this agreement will be terminated without prejudice to any rights under this agreement.

5. **THE CONDITIONS OF THIS AGREEMENT**

5.1 The parties expressly declare that this agreement contains all the conditions negotiated between them, and no condition or stipulation not contained herein shall be binding upon the parties.

6. **THUS AGREED AND SIGNED BY THE PARTIES**:

Contractor: .....

Community Liaison officer: .....

Date: .....

[redacted]

Part 4: Pricing Data

[redacted]

CITY OF CAPE TOWN

WATER AND SANITATION

CONTRACT NO. 295Q/2021/22

CIVIL, BUILDING AND DEMOLITION WORKS FOR THE UPGRADE AND EXPANSION OF POTSDAM WASTEWATER TREATMENT PLANT

C2.1 Pricing Assumptions

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. 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".

2. Descriptions in the Bills of Quantities are abbreviated and comply generally with those in the Standardised Specifications. Clause 8 of each Standardised Specification, read together with the relevant clauses of the Scope of Work, set out what ancillary or associated activities are included in the rates for the operations specified. Should any requirements of the measurement and payment clause of the applicable Standardised Specification, or the Scope of Work, conflict with the terms of the Schedule, the requirements of the Standardised Specification or Scope of Work, as applicable, shall prevail.

3. The measurement and payment clauses in a specification in which further information regarding the scheduled items is given, are referenced under "Item" (pay items) in the Bills of Quantities. The referenced clauses 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 digits which follow SANS in the SANS 1200 series of specifications, e.g. G for SANS 1200 G.

4. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.

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

7. A price or rate should be entered against each item in the Bills of Quantities, whether the quantities are stated or not. **An item against which no rate is/are entered, or if anything other than a rate or a nil rate (for example, a zero, a dash or the word "included" or abbreviations thereof) is entered against an item, it will also be regarded as a nil rate having been entered against that item, i.e. that there is no charge for that item.** The Tenderer may be requested to clarify nil rates, or items regarded as having nil rates; and the Employer may also perform a risk analysis with regard to the reasonableness of such rates.

8. 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.

[redacted]

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)
m^2	=	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	%	=	per cent
MPa	=	megapascal	kW	=	kilowatt

9. Where fractions of a cent occur in calculations of prices and amounts, they shall be rounded up/down to the nearest whole cent.

10. The Tenderer is referred to C.2.24 in Part T1.2 Tender Data regarding the pricing of Deviations and/or Qualifications.

11. Clause C.2.13.11 c) in Part T1.2 Tender Data shall be applicable to the submission of Bills of Quantities which have been priced electronically, and which the Tenderer wishes to submit as a printed version with his/her tender in the place of handwritten priced Bills of Quantities.

    If there is found to be any variance between the printed version and the original issued document, the original shall stand. However, where Addenda have been issued which amend the Bills of Quantities, then the printed Bills of Quantities shall take these into account.

    The pages of the issued Bills of Quantities should not be removed from the tender document.

12. Tenderers are referred to the Environmental Management (EM) Health and Safety Specification in Part C3.5 in the Scope of Work for the basic principles of measurement and pricing of these Specification.

13. Tenderers must note that wherever this document refers to any particular trade mark, name, patent, design, type, specific origin or producer, such reference shall be deemed to be accompanied by the words 'or equivalent".

14. Tenderers are referred to Clause 6.8.2 in Part C1.2 Contract Data regarding contract price adjustment.

15. Where a drawing code is referenced in the Bill of Quantities such a reference shall apply to all drawings with the stated drawing code. The Tenderer shall familiarise itself with all the drawings relevant to a specific structure and make sure it refers to the applicable drawing when pricing the described item in the bill. If the Contractor does not find a drawing that suits the Bill of Quantity description, it shall notify the Engineer and request clarification. The structure code refers to the three-letter included in the drawing number. For example, if the drawing number is 3089.00.00.AAA.01.A002, the structure code associated with this drawing is AAA.

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Bill of Quantities

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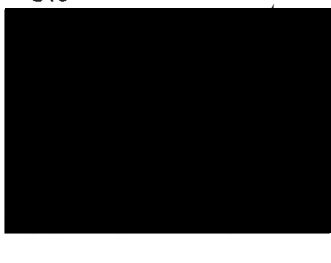

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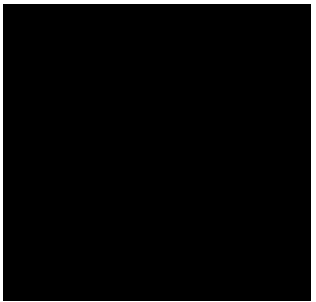

Bill of Quantities – Civil Works

[redacted]

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Preliminary and General

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PRELIMINARIES				
		CIVIL WORKS				
	SANS 1200 A	**BILL NO. 1** **PRELIMINARY AND GENERAL (CIVIL WORK)**				
		Note: P&G items applicable to the Building Work shall be priced under the Building Work P&G				
		ENTIRE CONTRACT				
		FIXED-CHARGE ITEMS				
1.1	8.3.1	Contractual Requirements	sum	-	6719319.64	6 719 319.64
		Establishment of Facilities on Site				
	8.3.2	.1 Facilities for the Engineer				
		Dwg 3089.30.01.AAC.01.U001 & U002				
1.2	PSAB2	(a,f,h) Furnished offices, latrines and carports	sum	-	268750	268 750.00
1.3		(b) Telephone (Telkom landline)	sum	-	0	Included
1.4	PSAB1	(c) Nameboards	no	2	26 875.00	53 750.00
1.5	PSAB5	(d) Survey assistant	sum	-	0	Included
1.6	PSAB6	(e) Survey equipment	sum	-	0	Included
1.7	PSAB4.2	(g) Laboratory equipment	sum	-	0	Included
	8.3.5	Occupational Health and Safety				
	PSA5	Compliance with Occupational Health and Safety Act (Act 85 of 1993) and its regulations and with the				
1.8		Employers Health and Safety Specification	sum	-	0	Included
	8.3.6	Environmental Management				
1.9	PSA6	Compliance with Environmental Management plan	sum	-	0	Included
		TIME-RELATED ITEMS				
1.10	8.4.1	Contractual requirements	month	67	-	Included
		Operation and maintenance of facilities on the Site for the duration of construction				
	8.4.2	.1 Facilities for the Engineer				
		Dwg 3089.30.01.AAC.01.U001 & U002				
1.11	PSAB2	(a,f,h) Furnished offices, latrines and carports	month	55	16 168.00	889 240.00
1.12		(b) Telephone (Telkom landline)	month	55	-	Included
1.13	PSAB1	(c) Nameboards	month	55	-	Included
1.14	PSAB5	(d) Survey assistant	month	55	-	Included
1.15	PSAB6	(e) Survey equipment	month	55	-	Included
1.16	PSAB4.2	(g) Laboratory equipment	month	55	-	Included
					Carried Forward	7 931 059.64

					Brought Forward	7 931 059.64
	8.4.6	Occupational Health and Safety				
	PSA5	Compliance with Occupational Health and Safety Act (Act 85 of 1993) and its regulations and with the				
1.17		Employers Health and Safety Specification	month	55	-	Included
	8.4.7	Environmental Management				
1.18	PSA6	Compliance with Environmental Management plan	month	55	-	Included
		Co-oordination meetings (Refer Sub-clause 4.1.4 of GCC)				
1.19		Attending and hosting program co-ordination meetings on site with M&E contractor for duration of Contract	Sum	-	0	Included
		TIME-RELATED ITEMS				
1.20	PSA5.3	.1 CLO No.1 remuneration for duration of the contract	month	55	13 707.54	753 914.70
1.21	PSA5.3	.2 CLO No.2 remuneration for duration of the contract	month	55	13 707.54	753 914.70
1.22	PSA5.3	.3 CLO No.3 remuneration for duration of the contract	month	55	13 707.54	753 914.70
1.23	PSA5.3	.4 CLO No.4 remuneration for duration of the contract	month	55	13 707.54	753 914.70
1.24	PSA5.3	.5 CLO No.5 remuneration for duration of the contract	month	55	13 707.54	753 914.70
	SANS 1200 A	**TEMPORARY WORKS**				
1.25	8.8.2 PSD5	Accommodation of traffic within the site	sum	-	0	Included
					TOTAL ENTIRE CONTRACT	11 700 633.14
		PORTION - A				
		FIXED-CHARGE ITEMS				
1.26	8.3.1	Contractual Requirements	sum	-	0	Included
		Establishment of Facilities on Site				
	8.3.2	.2 Facilities for the Contractor				
1.27		(a) Offices and storage sheds	sum	-	0	Included
1.28		(b) Workshops	sum	-	0	Included
1.29		(c) Laboratories	sum	-	0	Included
1.30		(d) Living accommodation	sum	-	0	Included
1.31		(e) Ablution and latrine facilities	sum	-	0	Included
1.32		(f) Tools and equipment	sum	-	0	Included
1.33		(g) Water supplies, power and communication	sum	-	0	Included
1.34		(h) Dealing with water (Sub-clause 5.5)	sum	-	0	Included
1.35		(i) Access (Sub-clause 5.8)	sum	-	0	Included
1.36		(j) Plant	sum	-	0	Included
1.37	8.3.3	Other fixed-charge obligations	sum	-	0	Included
					Carried Forward	11 700 633.14

					Brought Forward	11 700 633.14
1.38	8.3.4	Removal of Contractor's and Engineers site establishment on completion	sum	-	0	Included
		TIME-RELATED ITEMS				
1.39	8.4.1	Contractual requirements	month	28	-	Included
		Operation and maintenance of facilities on the Site for the duration of construction				
	8.4.2	.2 Facilities for the Contractor				
1.40		(a) Offices and storage sheds	month	16	299 495.38	4 791 926.08
1.41		(b) Workshops	month	16	-	Included
1.42		(c) Laboratories	month	16	-	Included
1.43		(d) Living accommodation	month	16	-	Included
1.44		(e) Ablution and latrine facilities	month	16	-	Included
1.45		(f) Tools and equipment	month	16	-	Included
1.46		(g) Water supplies, power and communication	month	16	-	Included
1.47		(h) Dealing with water (Sub-clause 5.5)	month	16	-	Included
1.48		(i) Access (Sub-clause 5.8)	month	16	-	Included
1.49		(j) Plant	month	16	-	Included
						Included
1.50	8.4.3	Supervision for duration of construction	month	16	1 512 833.31	24 205 332.96
					TOTAL PORTION - A	40 697 892.18
		PORTION - B				
		FIXED-CHARGE ITEMS				
1.51	8.3.1	Contractual Requirements	sum	-	0	Included
		Establishment of Facilities on Site				
	8.3.2	.2 Facilities for the Contractor				
1.52		(a) Offices and storage sheds	sum	-	0	Included
1.53		(b) Workshops	sum	-	0	Included
1.54		(c) Laboratories	sum	-	0	Included
1.55		(d) Living accommodation	sum	-	0	Included
1.56		(e) Ablution and latrine facilities	sum	-	0	Included
1.57		(f) Tools and equipment	sum	-	0	Included
1.58		(g) Water supplies, power and communication	sum	-	0	Included
1.59		(h) Dealing with water (Sub-clause 5.5)	sum	-	0	Included
1.60		(i) Access (Sub-clause 5.8)	sum	-	0	Included
1.61		(j) Plant	sum	-	0	Included
1.62	8.3.3	Other fixed-charge obligations	sum	-	0	Included
1.63	8.3.4	Removal of Contractor's and Engineers site establishment on completion	sum	-	0	Included
		TIME-RELATED ITEMS				
1.64	8.4.1	Contractual requirements	month	52	-	Included
		Operation and maintenance of facilities on the Site for				
					Carried Forward	40 697 892.18

[redacted]

					Brought Forward	40 697 892.18
		the duration of construction				
	8.4.2	.2 Facilities for the Contractor				
1.65		(a) Offices and storage sheds	month	40	29 949.54	1 197 981.60
1.66		(b) Workshops	month	40	-	included
1.67		(c) Laboratories	month	40	-	included
1.68		(d) Living accommodation	month	40	-	included
1.69		(e) Ablution and latrine facilities	month	40	-	included
1.70		(f) Tools and equipment	month	40	-	included
1.71		(g) Water supplies, power and communication	month	40	-	included
1.72		(h) Dealing with water (Sub-clause 5.5)	month	40	-	included
1.73		(i) Access (Sub-clause 5.8)	month	40	-	included
1.74		(j) Plant	month	40	-	included
1.75	8.4.3	Supervision for duration of construction	month	40	151 283.33	6 051 333.20
					TOTAL PORTION - B	47 947 206.98
		PORTION - C				
		FIXED-CHARGE ITEMS				
1.76	8.3.1	Contractual Requirements	sum	-	0	included
		Establishment of Facilities on Site				
	8.3.2	.2 Facilities for the Contractor				
1.77		(a) Offices and storage sheds	sum	-	0	included
1.78		(b) Workshops	sum	-	0	included
1.79		(c) Laboratories	sum	-	0	included
1.80		(d) Living accommodation	sum	-	0	included
1.81		(e) Ablution and latrine facilities	sum	-	0	included
1.82		(f) Tools and equipment	sum	-	0	included
1.83		(g) Water supplies, power and communication	sum	-	0	included
1.84		(h) Dealing with water (Sub-clause 5.5)	sum	-	0	included
1.85		(i) Access (Sub-clause 5.8)	sum	-	0	included
1.86		(j) Plant	sum	-	0	included
1.87	8.3.3	Other fixed-charge obligations	sum	-	0	included
	8.3.4	Removal of Contractor's and Engineers site				
1.88		establishment on completion	sum	-	0	included
		TIME-RELATED ITEMS				
1.89	8.4.1	Contractual requirements	month	46	-	included
		Operation and maintenance of facilities on the Site for the duration of construction				
	8.4.2	.2 Facilities for the Contractor				
1.90		(a) Offices and storage sheds	month	31	380 324.95	11 790 073.45
1.91		(b) Workshops	month	31	-	-
					Carried Forward	59 737 280.43

					Brought Forward	59 737 280.43
1.92		(c) Laboratories	month	31	-	included
1.93		(d) Living accommodation	month	31	-	included
1.94		(e) Ablution and latrine facilities	month	31	23 886.52	740 482.12
1.95		(f) Tools and equipment	month	31	-	included
1.96		(g) Water supplies, power and communication	month	31	-	included
1.97		(h) Dealing with water (Sub-clause 5.5)	month	31	-	included
1.98		(i) Access (Sub-clause 5.8)	month	31	-	included
1.99		(j) Plant	month	31	-	included
1.100	8.4.3	Supervision for duration of construction	month	31	1 921 106.69	59 554 307.39
					TOTAL PORTION - C SUB A	120 032 069.94
		PORTION - C - SUB A				
		FIXED-CHARGE ITEMS				
1.101	8.3.1	Contractual Requirements	sum	-	0	included
		Establishment of Facilities on Site				
	8.3.2	.2 Facilities for the Contractor				
1.102		(a) Offices and storage sheds	sum	-	0	included
1.103		(b) Workshops	sum	-	0	included
1.104		(c) Laboratories	sum	-	0	included
1.105		(d) Living accommodation	sum	-	0	included
1.106		(e) Ablution and latrine facilities	sum	-	0	included
1.107		(f) Tools and equipment	sum	-	0	included
1.108		(g) Water supplies, power and communication	sum	-	0	included
1.109		(h) Dealing with water (Sub-clause 5.5)	sum	-	0	included
1.110		(i) Access (Sub-clause 5.8)	sum	-	0	included
1.111		(j) Plant	sum	-	0	included
1.112	8.3.3	Other fixed-charge obligations	sum	-	0	included
1.113	8.3.4	Removal of Contractor's and Engineers site establishment on completion	sum	-	0	included
		TIME-RELATED ITEMS				
1.114	8.4.1	Contractual requirements	month	46	-	included
		Operation and maintenance of facilities on the Site for the duration of construction				
	8.4.2	.2 Facilities for the Contractor				
1.115		(a) Offices and storage sheds	month	15	314 387.09	4 715 806.35
1.116		(b) Workshops	month	15	-	included
1.117		(c) Laboratories	month	15	-	included
1.118		(d) Living accommodation	month	15	-	included
1.119		(e) Ablution and latrine facilities	month	15	-	included
1.120		(f) Tools and equipment	month	15	-	included
1.121		(g) Water supplies, power and communication	month	15	-	included
1.122		(h) Dealing with water (Sub-clause 5.5)	month	15	-	included
					Carried Forward	124 747 876.29

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					Brought Forward	124 747 876.29
1.123		(i) Access (Sub-clause 5.8)	month	15	-	included
1.124		(j) Plant	month	15	-	included
1.125	8.4.3	Supervision for duration of construction	month	15	1 588 055.40	23 820 831.00
					TOTAL PORTION - C SUB B	148 568 707.29
		PORTION - D				
		FIXED-CHARGE ITEMS				
1.126	8.3.1	Contractual Requirements	sum	-	0	included
		Establishment of Facilities on Site				
	8.3.2	.2 Facilities for the Contractor				
1.127		(a) Offices and storage sheds	sum	-	0	included
1.128		(b) Workshops	sum	-	0	included
1.129		(c) Laboratories	sum	-	0	included
1.130		(d) Living accommodation	sum	-	0	included
1.131		(e) Ablution and latrine facilities	sum	-	0	included
1.132		(f) Tools and equipment	sum	-	0	included
1.133		(g) Water supplies, power and communication	sum	-	0	included
1.134		(h) Dealing with water (Sub-clause 5.5)	sum	-	0	included
1.135		(i) Access (Sub-clause 5.8)	sum	-	0	included
1.136		(j) Plant	sum	-	0	included
1.137	8.3.3	Other fixed-charge obligations	sum	-	0	included
1.138	8.3.4	Removal of Contractor's and Engineers site establishment on completion	sum	-	0	included
		TIME-RELATED ITEMS				
1.139	8.4.1	Contractual requirements	month	67	-	included
		Operation and maintenance of facilities on the Site for the duration of construction				
	8.4.2	.2 Facilities for the Contractor				
1.140		(a) Offices and storage sheds	month	55	21 435.48	1 178 951.40
1.141		(b) Workshops	month	55	-	included
1.142		(c) Laboratories	month	55	-	included
1.143		(d) Living accommodation	month	55	-	included
1.144		(e) Ablution and latrine facilities	month	55	-	included
1.145		(f) Tools and equipment	month	55	-	included
1.146		(g) Water supplies, power and communication	month	55	-	included
1.147		(h) Dealing with water (Sub-clause 5.5)	month	55	-	included
1.148		(i) Access (Sub-clause 5.8)	month	55	-	included
1.149		(j) Plant	month	55	-	included
1.150	8.4.3	Supervision for duration of construction	month	55	108 276.50	5 955 207.50
					TOTAL PORTION - D	155 702 866.19
					Carried Forward	155 702 866.19

					Brought Forward	155 702 866.19
		BILL NO. 1 **PRELIMINARY AND GENERAL (CIVIL WORK)**				
		Carried forward to Summary of Bills			**TOTAL ALL PORTIONS**	155 702 866.19

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Preliminary and General

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PRELIMINARIES				
		BUILDING WORKS				
	SANS 1200 A	**BILL NO. 2** **PRELIMINARY AND GENERAL (BUILDING WORK)**				
		Note: Only P&G items applicable to the building work are to be priced under this section. The remaining P&G applicable to Civil and Mecanical Works are to be priced under the Civil Works P&G				
		ENTIRE CONTRACT				
		FIXED-CHARGE ITEMS				
2.1	8.3.1	All requirements	sum	-	0	included
	8.3.5	Occupational Health and Safety				
2.2	PSA5	Compliance with Occupational Health and Safety Act (Act 85 of 1993) and its regulations and with the Employers Health and Safety Specification	sum	-	0	included
	8.3.6	Environmental Management				
2.3	PSA6	Compliance with Environmental Management plan	sum	-	0	included
		TIME-RELATED ITEMS				
2.4	8.4.1	All requirements	sum	-	0	included
	8.4.6	Occupational Health and Safety				
2.5	PSA5	Compliance with Occupational Health and Safety Act (Act 85 of 1993) and its regulations and with the Employers Health and Safety Specification	sum	-	0	included
	8.4.7	Environmental Management				
2.6	PSA6	Compliance with Environmental Management plan	sum	-	0	included
					TOTAL ENTIRE CONTRACT	-
		PORTION - A				
		FIXED-CHARGE ITEMS				
2.7	8.3.1	All requirements	sum	-	0	included
		TIME-RELATED ITEMS				
2.8	8.4.1	All requirements	sum	-	3993271.78	3 993 271.78
					TOTAL PORTION -A	3 993 271.78
		PORTION - B				
					Carried Forward	3 993 271.78

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					Brought Forward	3 993 271.78
		FIXED-CHARGE ITEMS				
2.9	8.3.1	All requirements	sum	-	0	included
		TIME-RELATED ITEMS				
2.10	8.4.1	All requirements	sum	-	19966358.9	19 966 358.90
					TOTAL PORTION -B	23 959 630.68
		PORTION - C - SUB A				
		FIXED-CHARGE ITEMS				
2.11	8.3.1	All requirements	sum	-	0	included
		TIME-RELATED ITEMS				
2.12	8.4.1	All requirements	sum	-	7986543.56	7 986 543.56
					TOTAL PORTION - C - SUB A	7 986 543.56
		PORTION - C - SUB B				
		FIXED-CHARGE ITEMS				
2.13	8.3.1	All requirements	sum	-	0	included
		TIME-RELATED ITEMS				
2.14	8.4.1	All requirements	sum	-	7986543.56	7 986 543.56
					TOTAL PORTION - C - SUB B	7 986 543.56
		PORTION - D				
		FIXED-CHARGE ITEMS				
2.15	8.3.1	All requirements	sum	-	0	included
		TIME-RELATED ITEMS				
2.16	8.4.1	All requirements	sum	-	0	included
					TOTAL PORTION - D	-
					Carried Forward	39 932 717.80

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					Brought Forward	39 932 717.80
		BILL NO. 2 **PRELIMINARY AND GENERAL (BUILDING WORK)**				
		Carried forward to Summary of Bills			**TOTAL ALL PORTIONS**	39 932 717.80

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Schedule of Quantities
Provisional Sums and Prime Cost Items

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A1 - Provisional sums and Dayworks				
	SANS 1200 A	**BILL NO. A1** **PROVISIONAL SUMS AND PRIME COST ITEMS (CIVIL WORK)**				
	PSAB	**Note:** Provisional sums applicable to the Building Work are to be priced under relevant Building Works bills of quantities				
		Note: Expenditure under the following provisional sums is for work executed by the Contractor\Sub-contractor or Supplier during the construction phase of the contract. Values paid under these items shall be "nett values excluding discount and VAT". Invoices shall be supplied for each expenditure and attached to the payment certificates.				
		For work to be executed by the Contractor and valued in terms of the "Valuation of Variations" clause in the Conditions of Contract				
		ALLOWANCES				
	8.5	(a) .1 Community requirements				
A1.1	PSA7.3	.3 Accredited training courses for selected local and other labourers	Prov sum		260 000.00	260 000.00
A1.2		.4 Overheads, charges and profit on above	%		10%	26 000.00
A1.3	PSA7.4	.5 Wages and salaries of local and other labourers employed during training	Prov sum		260 000.00	260 000.00
A1.4		.6 Overheads, charges and profit on above	%		10%	26 000.00
		ENGINEERS REQUIREMENTS				
	8.5	(a) .2 Engineers requirements				
A1.5	PSA7.5	.1 Cellular phone costs	Prov sum		100 000.00	100 000.00
A1.6		.2 Overheads, charges and profit on above	%		10%	10 000.00
A1.7	PSA7.6	.3 Acceptance control testing	Prov sum		260 000.00	260 000.00
A1.8		.4 Overheads, charges and profit on above	%		10%	26 000.00
A1.9	PSA7.7	.5 Site office consumables and personal protective equipment	Prov sum		260 000.00	260 000.00
A1.10		.6 Overheads, charges and profit on above	%		10%	26 000.00
					Carried Forward	1 254 000.00

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					Brought Forward	1 254 000.00
A1.11	PSA7.8	.7 Electronic office equipment	Prov sum		100 000.00	100 000.00
A1.12		.8 Overheads, charges and profit on above	%		10%	10 000.00
		WORK TO EXISTING SERVICES				
	8.5	(a) .3 Existing services				
A1.13	PSA7.9	.1 Locating existing services	Prov sum		100 000.00	100 000.00
A1.14		.2 Overheads, charges and profit on above	%		10%	10 000.00
A1.15	PSA7.10	.3 Relocating existing services	Prov sum		260 000.00	260 000.00
A1.16		.4 Overheads, charges and profit on above	%		10%	26 000.00
A1.17	PSA7.11	.5 Handling of sewage in existing sewers	Prov sum		260 000.00	260 000.00
A1.18		6 Overheads, charges and profit on above	%		10%	26 000.00
		SPECIALIST SERVICES				
	8.5	(a) .4 Specialist services				
A1.19	PSA7.12	.1 Payment of specialist services	Prov sum		260 000.00	260 000.00
A1.20		.2 Overheads, charges and profit on above	%		10%	26 000.00
	8.5	(a) .5 Geotechnical investigation				
A1.21	PSA7.13	.1 Payment of specialist services	Prov sum		260 000.00	260 000.00
A1.22		.2 Overheads, charges and profit on above	%		10%	26 000.00
		PRIME COST ITEMS				
	8.6	Materials for dayworks				
A1.23	PSA8.1	(a) Materials used in the execution of dayworks	PC item		100 000.00	100 000.00
A1.24		(b) Overheads, charges and profit on above	%		10%	10 000.00
		BILL NO. A1 **PROVISIONAL SUMS AND PRIME COST ITEMS (CIVIL**				
		Carried forward to Summary of Bills			**Total**	2 728 000.00

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A1 - Provisional sums and Dayworks				
	SANS 1200 A	**BILL NO. A2** **DAYWORKS AND TEMPORARY WORKS (CIVIL WORK)**				
		Note: Dayworks executed on instruction of the Engineer only. Supervision of dayworks is not payable under this section and is deemed to be included under Preliminary and General items in 1200A Daywork sheets shall be delivered to the Engineer at the end of each day for approval, failing this, the Engineer may reject the dayworks.				
		DAYWORKS				
	8.7.1	**LABOUR**				
A2.1		(a) Skilled	hr	1000	87.31	87 310.00
A2.2		(b) Semi-skilled	hr	3000	86.00	258 000.00
A2.3		(c) Un-skilled	hr	5000	58.41	292 050.00
		PLANT HIRE (WORK RATES ON SITE)				
		TRUCKS				
	8.7.2	.1 Tipper trucks (specify capacity)				
A2.4		(a) Capacity_____m^3 (small)	hr	500	4.26	2 130.00
A2.5		(b) Capacity_____m^3 (medium)	hr	500	5.59	2 795.00
A2.6		(c) Capacity_____m^3 (large)	hr	500	6.58	3 290.00
	8.7.2	.2 Off highway dump trucks (specify capacity)				
A2.7		(a) Capacity_____m^3 (medium)	hr	500	7.32	3 660.00
A2.8		(b) Capacity_____m^3 (large)	hr	500	9.17	4 585.00
	8.7.2	.3 Flatbed trucks (specify capacity)				
A2.9		(a) Capacity_____m^3 (small)	hr	500	2.71	1 355.00
A2.10		(b) Capacity_____m^3 (medium)	hr	500	5.14	2 570.00
A2.11		(c) Capacity_____m^3 (large)	hr	500	6.58	3 290.00
		LDV'S				
	8.7.2	.4 LDV (specify size)				
A2.12		(a) LDV_____ton	km	5000	3.84	19 200.00
		WATER TANKERS				
	8.7.2	.5 Water tankers (specify capacity)				
A2.13		(a) Capacity_____liter (small, towable)	hr	500	0.87	435.00
A2.14		(b) Capacity_____liter (medium)	hr	500	4.26	2 130.00
					Carried Forward	682 800.00

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					Brought Forward	682 800.00
A2.15		(c) Capacity_____liter (large)	hr	500	5.48	2 740.00
		LOADERS				
	8.7.2	.6 Wheel loaders (specify capacity)				
A2.16		(a) Capacity_____m^3 (small)	hr	500	3.38	1 690.00
A2.17		(b) Capacity_____m^3 (medium)	hr	500	6.46	3 230.00
A2.18		(c) Capacity_____m^3 (large)	hr	500	6.46	3 230.00
		GRADERS				
	8.7.2	.7 Motor graders (specify model/kw)				
A2.19		(a) Model _____/_____kw	hr	500	14.43	7 215.00
		BULLDOZERS				
	8.7.2	.8 Bulldozers (specify model/mass/kw)				
A2.20		(a) Model____/_____/kg____kw (small)	hr	500	11.15	5 575.00
A2.21		(b) Model____/_____/kg____kw (medium)	hr	500	11.15	5 575.00
A2.22		(c) Model____/_____/kg____kw (large)	hr	500	11.15	5 575.00
		EXCAVATORS				
	8.7.2	.9 Crawler excavators (specify model/mass/kw)				
A2.23		(a) Model____/_____/kg____kw (small)	hr	500	3.29	1 645.00
A2.24		(b) Model____/_____/kg____kw (medium)	hr	500	7.79	3 895.00
A2.25		(c) Model____/_____/kg____kw (large)	hr	500	10.17	5 085.00
		TLB'S				
	8.7.2	.10 Tractor loader backhoe (TLB)(specify model)				
A2.26		(a) Model_____	hr	1000	4.50	4 500.00
		RIDE-ON ROLLERS				
	8.7.2	.11 Self propelled vibrating rollers (smooth drum) (specify mass)				
A2.27		(a) Mass_____kg (medium)	hr	500	2.13	1 065.00
A2.28		(b) Mass_____kg (large)	hr	500	5.48	2 740.00
	8.7.2	.12 Self propelled vibrating rollers (padfoot) (specify mass)				
A2.29		(a) Mass_____kg (medium)	hr	500	5.48	2 740.00
A2.30		(b) Mass_____kg (large)	hr	500	7.91	3 955.00
		WALK BEHIND ROLLERS				
	8.7.2	.14 Walk behind vibrating rollers (specify model)				
A2.31		(a) Model_____(BW 61) (small)	hr	500	1.15	575.00
A2.32		(b) Model_____(BW 76) (medium)	hr	500	1.27	635.00
					Carried Forward	744 465.00

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					Brought Forward	744 465.00
A2.33		(c) Model_____(BW 90) (large)	hr	500	1.43	715.00
		COMPACTORS				
	8.7.2	.15 Plate compactors (specify model)				
A2.34		(a) Model_____	hr	500	0.99	495.00
	8.7.2	.16 Wackers (specify model)				
A2.35		(a) Model_____	hr	500	1.33	665.00
		COMPRESSORS				
	8.7.2	.18 Portable diesel compressors (specify capacity)				
A2.36		(a) Capacity_____cfm (small)	hr	500	3.80	1 900.00
A2.37		(b) Capacity_____cfm (medium)	hr	500	7.39	3 695.00
A2.38		(c) Capacity_____cfm (large)	hr	500	14.78	7 390.00
		WATERPUMPS				
	8.7.2	.19 Waterpump (specify capacity)				
A2.39		(a) Capacity_____ liter/sec (small)	hr	500	1.17	585.00
A2.40		(b) Capacity_____ liter/sec (medium)	hr	500	1.72	860.00
A2.41		(c) Capacity_____ liter/sec (large)	hr	500	3.44	1 720.00
		GENERATORS				
	8.7.2	.21 Mobile generator set (specify KVA)				
A2.42		(a) _____KVA (small)	hr	500	1.15	575.00
A2.43		(b) _____KVA (medium])	hr	500	1.15	575.00
A2.44		(c) _____KVA (large)	hr	500	1.84	920.00
		TRANSPORT (COST TO AND FROM SITE)				
		Note: Distance shall be measured one way only (tender rates shall include for transport in both directions to and from site)				
	8.7.3	.1 Low bed				
A2.45		(a) Low-bed (suitable for the largest piece of equipment above)	km	5000	0.33	1 650.00
	8.7.3	.2 Tipper truck				
A2.46		(a) Small	km	500	0.21	105.00
A2.47		(b) Medium	km	500	0.23	115.00
A2.48		(c) Large	km	500	0.27	135.00
	8.7.3	.3 Flatbed truck				
A2.49		(a) Small	km	500	0.16	80.00
A2.50		(b) Medium	km	500	0.21	105.00
					Carried Forward	766 750.00

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					Brought Forward	766 750.00
A2.51		(c) Large	km	500	0.26	130.00
	8.7.3	.4 Water tanker				
A2.52		(a) Small	km	500	0.21	105.00
A2.53		(b) Medium	km	500	0.21	105.00
A2.54		(c) Large	km	500	0.21	105.00
		EXISTIG SERVICES				
		EXISTING SERVICES				
	8.8.4	Existing services				
A2.55		(a) Supply or hire specialist equipment for the detection of services	sum	-	0	included
A2.56		(b) The use of equipment referred to above	day	50	785.82	39 291.00
A2.57		(c) Excavation by hand in soft material to expose services	m³	3000	5.04	15 120.00
		BILL NO. A2 **DAYWORKS AND TEMPORARY WORKS (CIVIL WORK)**				
		Carried forward to Summary of Bills			**Total**	821 606.00

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A2 - Earthworks and pipework				
		BILL NO. A3 **EARTHWORKS - GZB**				
		CIVIL WORKS				
		CLEAR SITE				
	SANS 1200 C	**CLEAR SITE**				
	PSC 8.2.1.a	Clear and grub area for the following construction activity, and dispose of all material off site at a spoil site established by the Contractor				
A3.1		.3 Platforms (soil rafts)	m²	1800	2.94	5 292.00
		Clear and grub strips for (where not cleared within other clear and grub areas) and dispose of material off site at a spoil site established by the Contractor				
	8.2.1.b	Pipelines				
A3.2		(c) Pipeline 6 m wide	m	100	14.41	1 441.00
		REMOVE TREES				
	8.2.2	Remove and grub large trees and tree stumps, including filling in of holes, levelling of site and compaction, with trees of the following girth, and dispose of material off site at a spoil site established by the Contractor				
A3.3		a) Exceeding 1 m and up to and including 2 m girth	no	15	541.46	8 121.90
A3.4		b) Exceeding 2 m and up to and including 3 m girth	no	2	789.27	1 578.54
	SANS 1200 C	**TOPSOIL**				
	PSC 5.2	**TOPSOIL**				
	8.2.10.a	Remove topsoil to a depth of 150 mm and				
A3.5		.1 Stockpile on site and maintain	m³	100	59.55	5 955.00
A3.6		.2 Spoil off site at spoil site established by the Contractor	m³	100	120.55	12 055.00
	SANS 1200 D	**FINISHING**				
	8.3.10	Topsoiling with material from stockpiles on site				
A3.7		a) Spread over site, etc	m³	100	62.65	6 265.00
		Grassing or other vegetation cover				
					Carried Forward	40 708.44

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					Brought Forward	40 708.44
		Hydroseeding				
	8.3.11.a.1	Provide seed mix				
A3.8		.1 Approved type grass seed mix	kg	50	516.00	25 800.00
	8.3.11.a.2	Hydroseeding				
A3.9		.1 Hydroseeding	ha	2	12 900.00	25 800.00
	8.3.11.b	Provide and lay approved sodding type				
A3.10		.1 Kikuju	m²	200	51.60	10 320.00
	SANS 1200 C	**REMOVE EXISTING STRUCTURES**				
		REMOVAL OF EXISTING STRUCTURES				
		Take down existing structures and stockpile usable material to be re-used on site designated by the Engineer and protect from damage and theft (re-erection measured elsewhere). Unsuitable material to be spoiled off site at a site established by the Contractor				
A3.11	8.2.12	a) Precast concrete palisade fence 1,8m high	m	60	181.46	10 887.60
	SANS 1200 C	**REMOVE EXISTING SERVICES**				
		REMOVE EXISTING SERVICES				
		Removal of underground services as follows				
	8.2.7.a	Dismantle remove and spoil pipelines, powerlines, cables, etc (excavation, backfilling and removal of concrete, etc measured elsewhere) including necessary precautions applying to hazardous materials, etc				
A3.12		.1 100 mm uPVC water pipeline	m	10	64.40	644.00
A3.13		.2 160 mm Asbestos cement sewer pipeline	m	45	81.08	3 648.60
A3.14		.3 450 mm Concrete stormwater pipeline	m	140	165.01	23 101.40
		REMOVE EXISTING STRUCTURES				
		Demolish and spoil material for structures, buildings, etc at a spoil site established by the Contractor				
	8.2.8.a	Sundry structures, etc				
A3.15		.3 Mass concrete structures	m³	5	792.45	3 962.25
A3.16		.4 Reinforced concrete structures	m³	5	914.69	4 573.45
A3.17		.5 150 mm thick concrete paving	m²	10	118.87	1 188.70
A3.18		.6 150 mm thick reinforced concrete paving	m²	10	137.20	1 372.00
					Carried Forward	152 006.44

[redacted]

					Brought Forward	152 006.44
A3.19		.7 Concrete kerbing (all types and sizes)	m	20	73.28	1 465.60
A3.20		.8 Mass brickwork structures	m³	5	792.45	3 962.25
A3.21		.9 Sewer manholes (all sizes)	no	2	802.18	1 604.36
A3.22		.10 Stormwater manholes, kerb inlets, etc (all sizes)	no	5	802.18	4 010.90
A3.23		.11 Building rubble, trees, etc	m³	150	124.03	18 604.50
	SANS 1200 DM	**ROADBED IN POOR SOIL CONDITIONS**				
	PSDM	**ROADBED IN POOR SOIL CONDITIONS**				
	PSDM5	Roadbed preparation and compaction of material consisting of roller compaction with Note: scarifying 200 mm deep, watering up to saturation 10 Roller pass compaction with 10 ton padfoot vibratory roller below filling for soil mattressess, etc				
A3.24		.1 Micro screen installation	m²	560	8.46	4 737.60
A3.25		.2 UF feed pumpstation	m²	450	8.46	3 807.00
A3.26		.3 UF building and compressor room	m²	920	8.46	7 783.20
A3.27		.4 UV & CIP pump sump	m²	300	8.46	2 538.00
A3.28		.5 UF re-use pump station	m²	860	8.46	7 275.60
A3.29		.6 UF reject return pump station	m²	150	8.46	1 269.00
A3.30		.7 Ultra filtration substation	m²	180	8.46	1 522.80
A3.31		.8 Main substation	m²	180	8.46	1 522.80
	SANS 1200 D	**EARTHWORKS**				
	PSD	**Shoring:** Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service, Refer to the Project Specification in this regard. **Dewatering:** Dewatering of earthworks will not be measured seperately and shall be included in SANS 1200A reference 8.3.2.2.(h) in the Preliminary and General bill **CUT TO SPOIL**				
					Carried Forward	212 110.05

					Brought Forward	212 110.05
		Note: Material excavated needs to be selected and all re-usable material stockpiled on site or used as fill, and un-suitable material are to be spoiled off site. No additional payment will be made for this selection process.				
	8.3.2.a.1	Excavate in all materials and spoil off site at a site established by the Contractor for				
		.1 Platforms (soil rafts)				
A3.32		.1 Micro screen installation	m³	246	126.55	31 131.30
A3.33		.2 UF feed pump station	m³	228	126.55	28 853.40
A3.34		.3 UF building and compressor room	m³	200	126.55	25 310.00
A3.35		4 UV & CIP pump sump	m³	65	126.55	8 225.75
A3.36		.5 UF re-use pump station	m³	75	126.55	9 491.25
A3.37		.6 UF reject return pump station	m³	305	126.55	38 597.75
A3.38		.7 Ultra filtration substation	m³	40	126.55	5 062.00
A3.39		.2 Levelling over site	m³	20	126.55	2 531.00
A3.40		.3 Open channels	m³	10	126.55	1 265.50
		CUT TO STOCKPILE				
	8.3.2.a.2	Excavate in all materials and stockpile on site for				
		.1 Platforms (soil rafts)				
A3.41		.1 Micro screen installation	m³	1107	54.44	60 265.08
A3.42		.2 UF feed pump station	m³	1026	54.44	55 855.44
A3.43		.3 UF building and compressor room	m³	1350	54.44	73 494.00
A3.44		4 UV & CIP pump sump	m³	450	54.44	24 498.00
A3.45		.5 UF re-use pump station	m³	1340	54.44	72 949.60
A3.46		.6 UF reject return pump station	m³	1373	54.44	74 746.12
A3.47		.7 Ultra filtration substation	m³	180	54.44	9 799.20
A3.48		.8 Main substation	m³	200	54.44	10 888.00
A3.49		.2 Levelling over site	m³	45	54.44	2 449.80
A3.50		.3 Open channels	m³	45	54.44	2 449.80
		CUT TO FILL				
					Carried Forward	749 973.04

[redacted]

					Brought Forward	749 973.04
	8.3.2.a.3	Excavate in all materials and use as fill over site, compacted to 90% mod AASHTO density for				
		.1 Filling to existing redundant ponds on site or berm at micro screen				
A3.51		.1 Micro screen installation	m³	1107	68.07	75 353.49
A3.52		.2 UF feed pump station	m³	1026	68.07	69 839.82
A3.53		.3 UF building and compressor room	m³	900	68.07	61 263.00
A3.54		4 UV & CIP pump sump	m³	293	102.11	29 918.23
A3.55		.5 UF re-use pump station	m³	338	102.11	34 513.18
A3.56		.6 UF reject return pump station	m³	1373	68.07	93 460.11
A3.57		.7 Ultra filtration substation	m³	180	102.11	18 379.80
A3.58		.8 Main substation	m³	100	102.11	10 211.00
A3.59		.9 Berm at micro screens	m³	600	68.07	40 842.00
		STOCKPILE TO FILL				
	8.3.2.a.3	.2 Backfill from stockpile or excavation and compact to 90% mod. AASHTO density for berm at micro screens to keep construction site dry Note: Rate to include for trimming of berm embankment and removal of compacted fill to spoil area after construction of micro screens				
A3.60		.2 Levelling over site	m³	45	228.66	10 289.70
A3.61		.3 Open channels	m³	45	228.66	10 289.70
		CUT TO FILL				
	8.3.2.a.4	Excavate in all materials and use as fill over site, compacted to 98% mod AASHTO density for				
A3.62		.1 Platforms (soil rafts)	m³	300	102.11	30 633.00
A3.63		.2 Levelling over site	m³	200	102.11	20 422.00
		CUT TO FILL WITH SAND MATERIAL FROM SITE				
	8.3.2.a.7	Excavate in all materials and use as fill over site, compacted to 100% mod AASHTO density for				
A3.64		.1 Platforms (soil rafts)	m³	300	102.11	30 633.00
A3.65		.2 Levelling over site	m³	200	102.11	20 422.00
	SANS 1200 ME	**EARTHWORKS WITH MODIFIED MATERIAL**				
					Carried Forward	1 306 443.07

[redacted]

					Brought Forward	1 306 443.07
		SUPPLY OF MATERIAL				
	8.3.3.5	Extra over reference 8.3.2.(a) (b) & c) for the supply of the following material supplied by the Contractor from commercial sources for modifying excavated material from site (mechanical modification measured under reference 8.3.5. c) (elsewhere) of the following quality				
A3.66		a) G7 material	m^3	100	248.89	24 889.00
A3.67		b) G5 material	m^3	100	259.05	25 905.00
		PROCESSING				
		Process layerwork material by the following process				
A3.68	8.3.5	c) Mechanical modification	m^3	200	55.36	11 072.00
	SANS 1200 D	**EARTHWORKS WITH COMMERCIAL MATERIAL**				
		EARTHWORKS WITH COMMERCIAL MATERIAL				
		Extra over reference 8.3.2. above for constructing filling with material supplied by the Contractor from commercial sources of the following quality				
	8.3.4.a	G7 material in				
A3.69		.2 Platforms compacted to 98% mod AASHTO density	m^3	150	248.89	37 333.50
		ROCK EXCAVATION				
	8.3.2.b	Extra over reference 8.3.2 a) for				
A3.70		.2 Hard rock excavation	m^3	50	803.79	40 189.50
		STOCKPILE TO FILL WITH MATERIAL STOCKPILED ON SITE				
		The following work is to be constructed with stockpiled material on site (including material stockpiled outside the site perimeter fence - as indicated on the pre-tender site inpsection) from previous contracts, and must be loaded and hauled to the place of use, including all haul, accommodation of traffic and complying to all requirements on site as specified				
	8.3.4.1	Crushed stone material and compacted to 98% mod AASHTO density				
		.1 Platforms (soil rafts):				
A3.71		.2 UF feed pump station	m^3	490	102.11	50 033.90
A3.72		.5 UF re-use pump station	m^3	1150	102.11	117 426.50
A3.73		.6 UF reject return pump station	m^3	190	102.11	19 400.90
A3.74		.7 Ultra filtration substation	m^3	200	102.11	20 422.00
					Carried Forward	1 653 115.37

[redacted]

					Brought Forward	1 653 115.37
	8.3.4.1	Gravel and soil material and compacted to 98% mod AASHTO density				
		.2 Platforms (soil rafts):				
A3.75		.1 Micro screen installation	m³	810	102.11	82 709.10
A3.76		.3 UF building and compressor room	m³	1345	102.11	137 337.95
A3.77		.4 UV & CIP pump sump	m³	460	102.11	46 970.60
A3.78		.5 UF re-use pump station	m³	1150	102.11	117 426.50
A3.79		.7 Ultra filtration substation	m³	200	102.11	20 422.00
A3.80		.9 Main substation	m³	150	102.11	15 316.50
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
		RESTRICTED EXCAVATIONS Note: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard Restricted excavation in all materials and place within freehaul distance for				
	8.3.3.a	.1 Micro screen installation				
A3.81		.1 Drains	m³	12	365.86	4 390.32
A3.82		.2 Column bases	m³	20	365.86	7 317.20
	8.3.3.a	.2 UF feed pump station				
A3.83		.1 Sump	m³	8	365.86	2 926.88
	8.3.3.a	.3 UF building				
A3.84		.1 Wall footings	m³	20	365.86	7 317.20
	8.3.3.a	.4 UV & CIP pump sump				
A3.85		.1 Sump	m³	3	365.86	1 097.58
A3.86		.2 Plinth	m³	2	365.86	731.72
	8.3.3.a	.5 UF re-use pump station				
A3.87		.1 Sump	m³	60	365.86	21 951.60
A3.88		.2 Plinth	m³	16	365.86	5 853.76
	8.3.3.a	.6 Other excavations				
					Carried Forward	2 124 884.28

[redacted]

					Brought Forward	2 124 884.28
A3.89		.1 Chambers and manholes	m³	440	187.82	82 640.80
A3.90		.2 Duct trenches	m³	200	187.82	37 564.00
A3.91		.3 Channels and open drains parallel to boundary wall	m³	330	187.82	61 980.60
	8.3.3.b	Extra over reference 8.3.3 a) for				
A3.92		.2 Hard rock excavation	m³	10	803.79	8 037.90
	SANS 1200 D	**LATERAL SUPPORT/SHORING**				
		LATERAL SUPPORT/SHORING				
		Note:				
	PSD11.3	Shoring of excavations will only be measured if this is specifically required by the Engineer for protection of an existing structure or service, that could be damaged due to the excavations. Refer to the Project Specification in this regard				
	8.3.7.	Lateral support/shoring				
		Dwg 3089.30.01.GZB.11.X019				
		For excavations closer than 30m from existing buildings/structures using silent and vibration free shoring technologies				
A3.93		.1 UF feed pump station and reject return pump station - maximum depth approximately 6 m deep	m²	510	-	-
	SANS 1200 D	**EXISTING SERVICES**				
		EXISTING SERVICES				
	8.3.8.2.a	Dealing with the following services that are at risk because of construction of earthworks (other than trenching)				
A3.94		.1 Electric cable	no	5	503.55	2 517.75
A3.95		.2 Telephone calbe	no	5	503.55	2 517.75
A3.96		.3 Sewer pipe	no	5	503.55	2 517.75
A3.97		.4 Water pipe	no	5	503.55	2 517.75
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
		Extra over reference 8.3.3 a) backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
	8.3.3.a	.1 Alongside walls in foundations				
					Carried Forward	2 325 178.58

[redacted]

					Brought Forward	2 325 178.58
A3.98		.1 Micro screen installation	m³	210	-	included
A3.99		.2 UF building and compressor room	m³	350	-	included
A3.100		.3 UV & CIP pump sump	m³	125	-	included
A3.101		.4 UF re-use pump station	m³	230	-	included
A3.102		.5 Ultra filtration substation	m³	100	-	included
A3.103		.6 Main substation	m³	100	-	included
	8.3.3.a	.2 Behind retaining walls				
A3.104		.1 UF feed pump station	m³	350	-	included
A3.105		.2 UF reject return pump station	m³	650	-	included
	8.3.3.a	.3 Under floors				
A3.106		.1 UF building & compressor room	m³	490	-	included
A3.107		.2 UV & CIP pump sump	m³	115	-	included
A3.108		.3 UF re-use pump station	m³	230	-	included
		COMMERCIAL MATERIAL				
	8.3.4.b	Extra over reference 8.3.3.a) for backfill or for fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
		.1 Under floors				
A3.109		.1 UF building	m³	490	248.89	121 956.10
A3.110		.2 UF re-use pump station	m³	230	248.89	57 244.70
	SANS 1200 DK	**GABIONS AND PITCHING**				
		PREPARATION				
	8.2.1	Surface preparation for bedding of gabions and mattresses				
A3.111		a) Cavities filled with approved excavated material or rock and compacted to 95% mod AASHTO density	m³	380	70.18	26 668.40
	SANS 1200 DK	**GABIONS AND MATTRESSES (COASTAL)**				
		GABIONS				
	8.2.2.3	Gabions using plastic coated galvanized wire of the following sizes				
A3.112		a) 2,0 x 1,0 x 1,0 m Box of 80 mm mesh size	m³	5	1 641.93	8 209.65
A3.113		b) 2,0 x 1,0 x 0,5 m Box of 80 mm mesh size	m³	8	2 112.24	16 897.92
					Carried Forward	2 556 155.35

[redacted]

					Brought Forward	2 556 155.35
		MATTRESSES				
	8.2.2.4	Mattresses using plastic coated galvanized wire of the following sizes Refer drawing 3089.30.01.GZE.03.D001				
A3.114		a) 3,0 x 1,0 x 0,3 m Mattress of 50 mm mesh size	m^3	15	1 286.28	19 294.20
A3.115		b) 6,0 x 2,0 x 0,23 m Mattress of 50 mm mesh size	m^3	250	2 122.39	530 597.50
	SANS 1200 DK	**GEOTEXTILES**				
	PSDK	**GEOTEXTILES**				
	8.2.4	Supply and lay geotextile fabric below gabions and mattresses with suitable overlaps (net area of Bidim will be measured for payment)				
A3.116		b) Bidim A4	m^2	380	19.89	7 558.20
	SANS 1200 DK	**STONE PITCHING**				
	PSDK	**GROUTED**				
		Pitching including trimming and compaction of excavated surfaces to 95% mod AASHTO density				
	8.2.5.b	200 mm thick ordinary 1:3 cement/riversand grouted stone pitching to				
A3.117		.1 Flat slope	m^2	10	288.71	2 887.10
A3.118		.2 Steep slope	m^2	8	288.71	2 309.68
		BILL NO. A3 **EARTHWORKS - GZB**				
		Carried forward to Summary of Bills			**Total**	3 118 802.03

[redacted]

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A2 - Earthworks and pipework				
		BILL NO. A4 **PIPEWORK - GZC**				
		CIVIL WORKS				
		PIPEWORK				
	SANS 1200 DB	**EARTHWORKS (PIPE TRENCHES)**				
	PSDB 8.3.2	Excavate in all material, backfill and compact to 90% mod AASHTO density, and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches				
	8.3.2.a.1	Up to 0.8m wide				
A4.1		i) 0,00 m - 1,00 m depth	m³	10	187.82	1 878.20
A4.2		ii) 1,01 m - 1,50 m depth	m³	20	187.82	3 756.40
A4.3		iii) 1,51 m - 2,00 m depth	m³	80	406.46	32 516.80
A4.4		iv) 2,01 m - 2,50 m depth	m³	110	486.16	53 477.60
A4.5		v) 2,51 m - 3,00 m depth	m³	50	565.85	28 292.50
	8.3.2.a.2	Over 0.8m and up to 1.2m wide				
A4.6		i) 0,00 m - 1,00 m depth	m³	10	187.82	1 878.20
A4.7		ii) 1,01 m - 1,50 m depth	m³	60	187.82	11 269.20
A4.8		iii) 1,51 m - 2,00 m depth	m³	80	313.48	25 078.40
A4.9		iv) 2,01 m - 2,50 m depth	m³	50	366.61	18 330.50
	8.3.2.a.3	Over 1.2m and up to 2.0m wide				
A4.10		i) 1,51 m - 2,0 m depth	m³	450	239.09	107 590.50
A4.11		ii) 2,01 m - 2,5 m depth	m³	900	270.97	243 873.00
A4.12		iii) 2,51 m - 3,0 m depth	m³	240	302.85	72 684.00
	8.3.2	b) Extra-over 8.3.2 a) for:				
A4.13		a) Hard rock excavation	m³	20	803.79	16 075.80
					Carried Forward	616 701.10

[redacted]

					Brought Forward	616 701.10
A4.14	8.3.2	c) Excavate and dispose of unsuitable material from trench bottom	m³	150	90.45	13 567.50
	SANS 1200 D	**MATERIAL FROM COMMERCIAL SOURCES OR STOCKPILE ON SITE**				
	8.3.4	a) Extra-over for importation of materials from commercial sources				
A4.15	8.3.4.1	(1) 19 mm stone for foundation matress for valve structure or for use in waterlogged areas as ordered	m³	50	414.82	20 741.00
		b) Extra-over for importation of materials from stockpiled material on site				
A4.16	8.3.4.1	(2) Crushed material	m³	60	56.73	3 403.80
	SANS 1200 LB PS LB	**BEDDING**				
		FROM EXCAVATIONS				
	8.2.1	Provision of bedding material from trench excavations, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
A4.17		a) Selected granular material	m³	60	97.37	5 842.20
A4.18		b) Selected fill material	m³	360	97.37	35 053.20
		FROM OTHER EXCAVATIONS				
	8.2.2.1	Provision of bedding material by importation from other necessary excavations within the freehaul distance, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
A4.19		a) Selected granular material	m³	50	158.27	7 913.50
A4.20		b) Selected fill material	m³	300	158.27	47 481.00
		FROM COMMERCIAL SOURCES				
	8.2.2.3	Provision of bedding material by importation from commercial sources selected by the Contractor				
A4.21		a) Selected granular material	m³	30	346.26	10 387.80
A4.22		b) Selected fill material	m³	220	346.26	76 177.20
		SUNDRY ITEMS				
A4.23		Supply, handle and install A4 needle-punched nonwoven polyester geotextile (A4) with 500 mm minimum overlap around stone foundation matress	m²	820	19.89	16 309.80
					Carried Forward	853 578.10

[redacted]

					Brought Forward	853 578.10
	8.2.4	Class 20/19 conconcrete for pipe thrust blocks				
A4.24		i) pipe thrust blocks	m³	5	1 879.10	9 395.50
A4.25		ii) encasing of pipes	m³	25	2 097.71	52 442.75
A4.26		iii) for concrete cradle support 1050 mm x RC pipes, refer drawing 3089.00.00 SQN.14.U001	m³	2	1 879.10	3 758.20
		EXISTING SERVICES				
	SANS 1200 DB	Existing services that intersect or adjoin a pipe trench				
	8.3.5	a) Services that intersect a trench:				
		i) Stormwater culverts				
A4.27		i) 300 mmØ - 525 mm dia	no	3	503.55	1 510.65
A4.28		ii) 600 mmØ - 900 mm dia	no	1	503.55	503.55
		ii) Steel sewer mains				
A4.29		i) 350 mm - 450 mm dia	no	2	503.55	1 007.10
		iii) Electrical				
A4.30		i) 1 x 11 kV cable	no	1	503.55	503.55
	8.3.5	b) Services that adjoin a trench				
		i) Stormwater culverts				
A4.31		i) 300 mm - 525 mm dia	m	100	125.89	12 589.00
		ii) Steel sewer mains				
A4.32		i) 350 - 450 mm dia	m	150	125.89	18 883.50
A4.33		iii) Street lighting lamp post	no	3	125.89	377.67
	SANS 1200 L	**MEDIUM PRESSURE PIPELINE**				
	PSL 8.2.1	Supply, lay, joint, bed (flexible pipe bedding) and test water pipes				
		1 uPVC Pipelines, Class 12				
A4.34		i) 200 mm dia	m	15	457.52	6 862.80
					Carried Forward	961 412.37

[redacted]

					Brought Forward	961 412.37
A4.35		ii) 250 mm dia 2 HDPE, P100,SDR 17 PN 10	m	50	690.80	34 540.00
A4.36		i) 400 mm dia	m	78	2 573.71	200 749.38
A4.37		ii) 450 mm dia	m	105	3 467.63	364 101.15
A4.38		iii) 900 mm dia	m	10	9 318.26	93 182.60
	8.2.2	Supply and bedding of specials, complete with couplings				
		1 uPVC bends class 12				
A4.39		i) 200 mm dia x 90°	no	1	1 281.40	1 281.40
A4.40		ii) 200 mm dia x 45°	no	2	376.25	752.50
	8.2.3	Stainless steel grade 316 fittings and specials to suit HDPE pipes, max working pressure 9 bar				
		400 mm dia flanged bend, both flanges to be 450 mm dia flanges for connection to a 450 mm dia HDPE pipe				
		Note: all bends to be medium radius segmented bends				
A4.41		i) 400 mm dia x 40°	no	1	40 846.51	40 846.51
A4.42		ii) 400 mm dia x 53°	no	1	40 846.51	40 846.51
A4.43		iii) 400 mm dia x 90°	no	2	43 973.69	87 947.38
	8.2.4	HDPE flange adaptor complete and fitted with a stainless steel grade 316 backing flange to suit HDPE pipe				
A4.44		i) 450 mm dia for a HDPE PE 100, SDR17 PN10 pipe	no	13	10 085.44	131 110.72
A4.45		ii) 900 mm dia for a HDPE PE 100, SDR 17 PN10 pipe	no	2	26 471.94	52 943.88
	8.2.5	Stainless steel grade 316 specials to suit uPVC and HDPE pipe				
A4.46		i) 200 mm dia straight pipe one end flanged with puddle flange to suit 350 mm thick concrete wall. Length 700 mm	no	1	15 636.69	15 636.69
A4.47		ii) 400 mm dia straight pipe one end flanged to suit 450 mm dia HDPE pipe flange, with puddle flange to suit 350 mm thick wall. Length 700 mm	no	1	35 373.69	35 373.69
	8.2.15	Extra over items for the supply and wrapping of the flanges below ground using the Stopaq wrapping system (or equivalent to be approved by the Employer's Agent)				
					Carried Forward	2 060 724.78

[redacted]

					Brought Forward	2 060 724.78
		Note: Rate to include for stopag FN 41 00 paste, wrapping geotextile, C2H wrapping band and PVC outer wrap				
A4.48		i) 450 mm dia	no	13	15 178.88	197 325.44
A4.49		ii) 900 mm dia	no	2	30 357.76	60 715.52
	8.2.16	Extra-over for the supply and wrapping of the stainless steel grade 316 pipe specials below ground and protruding from the valve chambers with 1.5mm thick Stopag CZH-P wrapping band followed by a 0.5mm thick Stopag PE outer wrap (or equivalent to be approved by the Employer's Agent)				
A4.50		i) 450 mm dia	m	20	980.94	19 618.80
A4.51		ii) 900 mm dia	m	2	1 449.64	2 899.28
	8.2.17	Extra-over item 8.2.1 for the straight cutting of the pipe preparing ends and repairing of protection and the supplying and fixing of the extra coupling if required				
		uPVC pipes, Class 9				
A4.52		i) 200 mm dia	no	2	281.22	562.44
A4.53		ii) 250 mm dia	no	1	281.22	281.22
		HDPE pipes PE100, SDR17 PN10				
A4.54		i) 450 mm dia	no	7	5 375.00	37 625.00
A4.55		ii) 900 mm dia	no	1	5 375.00	5 375.00
	SANS 1200 LD	**CONCRETE SEWERS**				
		CONCRETE PIPES				
	8.2.1	Supply, lay, bed and test concrete interlocking joint pipes in accordance to SANS 677 (spigot and socket)				
A4.56		i) 375 mm dia, Class 75 D	m	60	967.07	58 024.20
A4.57		ii) 450 mm dia, Class 75 D	m	75	1 078.09	80 856.75
		Supply, lay and bed (class C bedding) and test concrete spigot and socket sacrificial lined sewer pipe culverts with rubber rings, including all cutting to ends, etc				
	8.2.2	Spigot and socket class 100 D with rubber rings and sacrificial layer				
A4.58		i) 750 mm dia	m	10	2 748.33	27 483.30
A4.59		ii) 1 050 mm dia	m	90	6 305.34	567 480.60
					Carried Forward	3 118 972.33

[redacted]

					Brought Forward	3 118 972.33
A4.60	8.2.3	iii) 1 200 mm dia Spigot and socket class 75D with rubber rings and sacrificial layer	m	10	11 621.22	116 212.20
A4.61		I) 1 050 mm dia	m	250	6 123.82	1 530 955.00
	SANS 1200 LE PSLE 8.2.2	Supply and lay concrete rectangular culverts in acc. to SANS 986 on concrete floor slab of existing canal. Refer drawing 3089.00.00.SQN.14.U001				
A4.62		i) 1 500 x 900 mm	no	2	6 418.30	12 836.60
	8.2.4	Extra over item 8.2.1 for cutting the end units for culverts on site				
		a) Straight cut (interlocking joint pipes)				
A4.63		i) 375 mm dia	no	2	160.73	321.46
A4.64		ii) 450 mm dia	no	2	160.73	321.46
		b) Straight cut (rolling rubber ring joint pipes)				
A4.65		i) 750 mm dia	no	4	160.73	642.92
A4.66		ii) 1 050 mm dia	no	6	160.73	964.38
A4.67		iii) 1 200 mm dia	no	3	160.73	482.19
	8.2.7	MISCELLANEOUS				
		1 ii) Outlet headwall for: Drawing no 3089.30.01.GZC.03.D005 and SW9				
A4.68		i) 450 mm dia RC pipe	no	1	12 010.40	12 010.40
A4.69		ii) 1 050 mm dia RC pipe	no	1	15 094.00	15 094.00
		BILL NO. A4 **PIPEWORK - GZC**				
		Carried forward to Summary of Bills			**Total**	4 808 812.94

[redacted]

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A3 - Civil works				
		BILL NO. A5 **MICRO SCREEN INSTALLATION - WPC**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
A5.1		.1 Floor channels	m³	10	614.75	6 147.50
A5.2		.2 Column bases	m³	5	614.75	3 073.75
A5.3		.3 Wall footings	m³	16	614.75	9 836.00
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
A5.4		.2 Hard rock excavation	m³	2	803.79	1 607.58
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
A5.5		.1 Alongside walls in foundations	m³	10	-	included
A5.6		.2 Behind retaining walls	m³	51	-	included
A5.7		.3 Under floors	m³	103	-	included
	SANS 1200 G	**SOILCRETE**				
		SOILCRETE Soilcrete (5% OPC)				
A5.8	8.4.10	(a) Backfilling in voids behind walls	m³	10	1 191.52	11 915.20
	SANS 1200 G	**CONCRETE (STRUCTURAL)**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
					Carried Forward	32 580.03

[redacted]

					Brought Forward	32 580.03
A5.9		.1 Sides of floor slabs, bases etc	m²	42	418.08	17 559.36
A5.10		.2 Walls	m²	380	311.34	118 309.20
A5.11		.3 Floor channel walls	m²	21	418.08	8 779.68
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
A5.12		.1 Slabs	m²	369	724.65	267 395.85
A5.13		.2 Beams	m²	34	916.79	31 170.86
A5.14		.3 Walkway slabs	m²	63	609.90	38 423.70
	8.2.2	(b) Plane vertical				
A5.15		.1 Columns	m²	129	364.71	47 047.59
A5.16		.2 Beams	m²	51	418.08	21 322.08
A5.17		.3 Walls	m²	680	311.34	211 711.20
A5.18		.4 Floor channel walls	m²	41	418.08	17 141.28
A5.19		.5 Crane beam supports sides	m²	10	507.04	5 070.40
A5.20		.6 Machine bases	m²	41	418.08	17 141.28
	8.2.2	(c) Plane sloping				
A5.21		.1 Stairs	m²	4	828.30	3 313.20
A5.22		.2 Crane beam supports soffit	m²	6	1 450.53	8 703.18
	8.2.5	Smooth formwork to narrow widths				
A5.23		(a) Edges, risers, etc not exceeding 300mm wide	m	159	125.43	19 943.37
A5.24		(c) Raking side of stairs maximum 400mm wide	m	4	167.23	668.92
A5.25		(g) Set of V-reedings 75mm wide in top of concrete steps	m	10	171.24	1 712.40
	8.2.6	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
A5.26		(a) Chamfer size150 x 150mm	m	10	295.06	2 950.60
A5.27		(b) Groove size 70mm wide x 50mm deep	m	2	160.80	321.60
A5.28		(c) Rebate size 100mm x 100mm	m	2	214.44	428.88
		BOXING IN FOR HOLES AND VOIDS				
	8.2.7	(a) Small, circular, up to 0.35m diameter with depth				
					Carried Forward	871 694.66

[redacted]

					Brought Forward	871 694.66
A5.29		.1 over 0m and up to 0,5m	no	5	352.49	1 762.45
	8.2.7	(b) Small, other shapes, up to 0,1m² in area with depth				
A5.30		.1 over 0m and up to 0,5m	no	2	432.55	865.10
	8.2.7	(c) Large, circular, over 0,35m and up to 0,8m diameter with depth				
A5.31		.1 over 0m and up to 0,5m	no	12	565.99	6 791.88
	8.2.7	(d) Large, other shapes, over 0,5m² up to 1,4m² in area with depth				
A5.32		.1 over 0m and up to 0,5m	no	1	672.74	672.74
		CASTING IN PIPES THROUGH CONCRETE				
		SMOOTH FORMWORK				
		Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
A5.33		.1 Smooth formwork	m²	21	651.99	13 691.79
		GROUTING				
	8.7	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
A5.34		.1 Grouting around pipes and fittings	m³	2	21 078.60	42 157.20
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
A5.35		.1 All sizes	ton	2.0	18 976.98	37 953.96
	8.3.1	(b) High tensile steel				
A5.36		.1 All sizes	ton	87.0	18 976.98	1 650 997.26
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
A5.37		(c) Ref no.395	m²	56	107.37	6 012.72
					Carried Forward	2 632 599.76

[redacted]

					Brought Forward	2 632 599.76
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
A5.38		(a) Blinding layer 50mm thick	m³	28	1 857.71	52 015.88
	8.4.3	(b) Strength concrete 20Mpa/19mm				
A5.39		.1 Wall footings	m³	5	1 659.10	8 295.50
	8.4.3	(c) Strength concrete 35Mpa/19mm				
A5.40		.1 Column bases	m³	2	1 978.65	3 957.30
A5.41		.2 Columns	m³	12	1 978.65	23 743.80
A5.42		.3 Walls	m³	5	1 978.65	9 893.25
A5.43		.4 Floor slabs	m³	9	1 978.65	17 807.85
A5.44		.6 Crane supports	m³	2	1 978.65	3 957.30
A5.45		.7 Stairs	m³	2	1 978.65	3 957.30
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A5.46		.1 Floor slabs	m³	177	2 199.02	389 226.54
A5.47		.2 Roof slabs	m³	82	2 199.02	180 319.64
A5.48		.3 Beams	m³	21	2 199.02	46 179.42
A5.49		.4 Walkway slabs	m³	14	2 199.02	30 786.28
A5.50		.5 Walls	m³	222	2 199.02	488 182.44
A5.51		.6 Floor channel base and sides	m³	15	2 199.02	32 985.30
A5.52		.7 Stairs	m³	2	2 199.02	4 398.04
A5.53		.8 Machine bases	m³	27	2 199.02	59 373.54
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A5.54		.1 Benching to floors to falls including steel floated surface finish	m³	10	2 055.78	20 557.80
					Carried Forward	4 008 236.94

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					Brought Forward	4 008 236.94
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
A5.55		.1 Floor slabs	m²	51	13.92	709.92
A5.56		.2 Top of walls, beams, etc	m²	149	13.92	2 074.08
	8.4.4	(b) Steel floated finish				
A5.57		.1 Floor slabs	m²	994	19.44	19 323.36
A5.58		.2 Top of walls, beams, etc	m²	51	19.44	991.44
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
A5.59		.4 Narrow widths not exceeding 300mm wide	m	51	35.48	1 809.48
	8.5	(b) Polyurethane joint sealer				
A5.60		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	51	153.31	7 818.81
	8.5	(c) Saw cut joints				
A5.61		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	64.75	1 295.00
	SANS 1200 LC	**SLEEVES**				
		SLEEVE PIPES				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires and bends, etc complete				
A5.62		.1 110mm Diameter cast into walkway slabs	m	103	134.05	13 807.15
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
A5.63	8.12	Testing entire structure for water tightness	no	1	34340.14	34 340.14
	SANS 1200 DK	**GABIONS AND PITCHING**				
	PSDK	**PREPARATION**				
	8.2.1	Surface preparation for bedding of gabions and mattresses				
					Carried Forward	4 090 406.32

[redacted]

					Brought Forward	4 090 406.32
A5.64		(a) Cavities filled with approved excavated material or rock and compacted to 90% mod AASHTO density	m²	113	67.38	7 613.94
		GABIONS AND MATTRESSES (COASTAL)				
		GABIONS				
	8.2.2	.3 Gabions using plastic coated galvanized wire of the following sizes				
A5.65		(a) 2,0 x 1,0 x 1,0m Box of 80mm mesh size	m³	10	1 641.93	16 419.30
		MATTRESSES				
	8.2.2	.4 Mattresses using plastic coated galvanized wire of the following sizes				
A5.66		(a) 2,0 x 1,0 x 0,3m Mattress of 50mm mesh size	m³	31	2 486.70	77 087.70
		GEOTEXTILES				
		GEOTEXTILES				
	8.2.4	Supply and lay geotextile fabric below gabions and mattresses				
A5.67		(b) Bidim A4 (or similar approved)	m²	154	19.89	3 063.06
		STONE PITCHING				
		GROUTED				
	8.2.5	(b) 200mm Thick ordinary 1:3 cement/riversand grouted stone pitching to				
A5.68		.1 Flat slope	m²	103	288.71	29 737.13
A5.69		.2 Steep slope	m²	103	288.71	29 737.13
		BILL NO. A5 **MICRO SCREEN INSTALLATION - WPC**				
		Carried forward to Summary of Bills			**Total**	4 254 064.58

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
UF feed pumpstation

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A3 - Civil works				
		BILL NO. A6 **UF FEED PUMPSTATION - WPC**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
A6.1		.1 Floor sumps	m³	2	614.75	1 229.50
		BACKFILLING				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
A6.2		.1 Alongside walls in foundations	m³	5	-	included
A6.3		.2 Behind retaining walls	m³	52	-	included
A6.4		.3 Under floors	m³	21	-	included
	SANS 1200 G	**SOILCRETE**				
		SOILCRETE				
		Soilcrete (5% OPC)				
A6.5	8.4.10	(a) Backfilling in voids behind walls	m³	21	1 191.52	25 021.92
	SANS 1200 G	**ROUGH FORMWORK**				
		ROUGH FORMWORK				
	8.2.1	(b) Plane vertical				
A6.6		.1 Sides of floor slabs, bases etc	m²	27	418.08	11 288.16
A6.7		.2 Walls	m²	260	311.34	80 948.40
A6.8		.3 Sump walls	m²	4	507.04	2 028.16
	SANS 1200 G	**SMOOTH FORMWORK**				
	PSG	**SMOOTH FORMWORK**				
					Carried Forward	120 516.14

[redacted]

					Brought Forward	120 516.14
	8.2.2	(a) Plane horizontal				
A6.9		.1 Slabs	m²	286	733.25	209 709.50
A6.10		.2 Beams	m²	34	922.54	31 366.36
A6.11		.3 Landings	m²	3	609.90	1 829.70
	8.2.2	(b) Plane vertical				
A6.12		.1 Columns	m²	115	364.71	41 941.65
A6.13		.2 Beams	m²	152	418.08	63 548.16
A6.14		.3 Walls	m²	408	311.34	127 026.72
A6.15		.4 Sump walls	m²	4	507.04	2 028.16
A6.16		.5 Crane beam supports sides	m²	14	418.08	5 853.12
A6.17		.6 Pipe support walls	m²	46	418.08	19 231.68
A6.18		.7 Upstands	m²	10	418.08	4 180.80
	8.2.2	(c) Plane sloping				
A6.19		.1 Stairs	m²	7	716.65	5 016.55
A6.20		.2 Crane beam supports soffit	m²	8	1 189.41	9 515.28
	8.2.5	Smooth formwork to narrow widths				
A6.21		(a) Edges, risers, etc not exceeding 300mm wide	m	206	125.43	25 838.58
A6.22		(c) Raking side of stairs maximum 400mm wide	m	7	167.23	1 170.61
A6.23		(g) Set of V-reedings 100mm wide in top of concrete steps	m	23	104.52	2 403.96
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
A6.24		(a) Chamfer size 150 x 150mm	m	2	295.06	590.12
A6.25		(b) Groove size 70mm wide x 50mm deep	m	2	160.80	321.60
A6.26		(c) Rebate size 100mm x 100mm	m	2	214.44	428.88
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
A6.27		.1 over 0m and up to 0,5m	no	2	352.49	704.98
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
A6.28		.1 over 0m and up to 0,5m	no	2	432.55	865.10
					Carried Forward	674 087.65

[redacted]

					Brought Forward	674 087.65
	8.2.6	(c) Large, circular, over 0,35m and up to 0,8m diameter with depth				
A6.29		.1 over 0m and up to 0,5m	no	8	565.99	4 527.92
	8.2.6	(d) Large, other shapes, over 0,9m² up to 1,5m² in area with depth				
A6.30		.2 over 0m and up to 0,5m	no	1	672.74	672.74
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
		Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
A6.31		.1 Smooth formwork	m²	21	619.74	13 014.54
		GROUTING				
	8.7	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
A6.32		.1 Grouting around pipes and fittings	m³	1	21 078.60	21 078.60
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
A6.33		.1 All sizes	ton	2.0	18 976.98	37 953.96
	8.3.1	(b) High tensile steel				
A6.34		.1 All sizes	ton	55.0	18 976.98	1 043 733.90
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
A6.35		(c) Ref no.395	m²	45	107.37	4 831.65
A6.36		(d) Ref no 193 for apron	m²	10	55.60	556.00
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
A6.37		(a) Blinding layer 50mm thick	m³	14	1 857.71	26 007.94
					Carried Forward	1 826 464.90

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					Brought Forward	1 826 464.90
	8.4.3	(c) Strength concrete 35Mpa/19mm				
A6.38		.1 Upstands	m³	5	1 978.65	9 893.25
A6.39		.2 Columns	m³	10	1 978.65	19 786.50
A6.40		.3 Ramps	m³	2	1 978.65	3 957.30
A6.41		.6 Crane supports	m³	4	1 978.65	7 914.60
A6.42		.7 Stairs	m³	2	1 978.65	3 957.30
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A6.43		.1 Floor slabs	m³	88	2 199.02	193 513.76
A6.44		.2 Roof slabs	m³	80	2 199.02	175 921.60
A6.45		.3 Beams	m³	28	2 199.02	61 572.56
A6.46		.4 Machine bases	m³	11	2 199.02	24 189.22
A6.47		.5 Pipe supports	m³	4	2 199.02	8 796.08
A6.48		.6 Walls	m³	117	2 199.02	257 285.34
A6.49		.7 Floor sump base and sides	m³	3	2 199.02	6 597.06
A6.50		.8 Stairs	m³	4	2 199.02	8 796.08
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A6.51		.1 Benching to floors to falls including steel floated surface finish	m³	26	2 055.78	53 450.28
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
A6.52		.1 Floor slabs	m²	45	13.92	626.40
A6.53		.2 Top of walls, beams, etc	m²	10	13.92	139.20
	8.4.4	(b) Steel floated finish				
					Carried Forward	2 662 861.43

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					Brought Forward	2 662 861.43
A6.54		.1 Floor slabs	m²	286	19.44	5 559.84
A6.55		.2 Top of walls, beams, etc	m²	27	19.44	524.88
	SANS 1200 G	**CONCRETE FLOOR**				
		CONCRETE PROTECTION AND FLOOR COATINGS				
	8.4.11	(a) Sikafloor 263 SL ZA - or other approved - self smoothing epoxy finish applied to manufacturing specifications including all preparation, etc				
A6.56		i) 3 mm thick to concrete floors	m²	300	677.25	203 175.00
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
A6.57		.4 Narrow widths not exceeding 300mm wide	m	52	35.48	1 844.96
	8.5	(b) Polyurethane joint sealer				
A6.58		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	52	153.31	7 972.12
	8.5	(c) Saw cut joints				
A6.59		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	54.44	1 088.80
		WATERSTOPS				
	8.5	(d) Waterstops				
A6.60		.1 300mm Wide center bulb type rubber waterstop castinto concrete floor slab over expansion joint	m	52	402.37	20 923.24
	SANS 1200 LC	**SLEEVES**				
		SLEEVE PIPES				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires and bends, etc complete				
A6.61		.1 110mm Diameter cast into walkway slabs	m	103	134.05	13 807.15
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
A6.62	8.12	Testing entire structure for water tightness	no	1	41581.43	41 581.43
					Carried Forward	2 959 338.85

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					Brought Forward	2 959 338.85
		BILL NO. A6 **UF FEED PUMPSTATION - WPC**				
		Carried forward to Summary of Bills			**Total**	2 959 338.85

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A3 - Civil works				
		BILL NO. A7 **UF BUILDING AND COMPRESSOR ROOM - WOB**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
		Shoring: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
		Dewatering: Dewatering of earthworks will not be measured seperately and shall be included in SANS 1200A reference 8.3.2.2.(h) in the Preliminary and General bill				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
A7.1		.1 Wall footings	m³	164	614.75	100 819.00
A7.2		.2 Column bases	m³	59	614.75	36 270.25
A7.3		.3 Floor channels	m³	103	614.75	63 319.25
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
A7.4		.2 Hard rock excavation	m³	5	803.79	4 018.95
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		RESTRICTED BACKFILLING Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
A7.5		.1 Alongside walls in foundations	m³	165	-	-
A7.6		.3 Under floors	m³	420	-	-
	SANS 1200 G	**CONCRETE (STRUCTURAL)**				
	PSG	**ROUGH FORMWORK**				
					Carried Forward	204 4

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					Brought Forward	204 427.45
		ROUGH FORMWORK				
	8.2.1	(a) .2 Plane vertical				
A7.7		.1 Sides of floor slabs	m²	10	418.08	4 180.80
A7.8		.2 Sides of column bases	m²	59	418.08	24 666.72
A7.9		.3 Sides of wall footings	m²	155	364.71	56 530.05
A7.10		.4 Floor duct walls	m²	42	418.08	17 559.36
A7.11		.5 Walls	m²	52	364.71	18 964.92
A7.12		.6 Square, rectangular or L-shaped columns	m²	52	364.71	18 964.92
	8.2.5	Rough formwork to narrow widths				
A7.13		(a) Edges, risers, etc not exceeding 300mm wide	m	52	109.41	5 689.32
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(b) .1 Plane horizontal				
A7.14		.1 Slabs	m²	784	783.77	614 475.68
A7.15		.2 Beams	m²	44	869.17	38 243.48
A7.16		.3 Landings	m²	3	609.90	1 829.70
	8.2.2	(c) .2 Plane vertical				
A7.17		.1 Sides of floor slabs	m²	10	418.08	4 180.80
A7.18		.2 Walls	m²	45	364.71	16 411.95
A7.19		.3 Upstands	m²	37	418.08	15 468.96
A7.20		.5 Floor duct walls	m²	42	418.08	17 559.36
A7.21		.6 Square, rectangular or L-shaped columns	m²	218	364.71	79 506.78
A7.22		.7 Pipe supports	m²	10	418.08	4 180.80
A7.23		.8 Beams	m²	274	364.71	99 930.54
A7.24		.9 Machine plinths	m²	33	418.08	13 796.64
A7.25		.10 Crane beam support sides	m²	8	418.08	3 344.64
	8.2.2	(d) .3 Plane sloping				
A7.26		.2 Stairs	m²	7	1 014.67	7 102.69
A7.27		.3 Crane beam support sloping soffit	m²	7	1 189.41	8 325.87
	8.2.5	Normal formwork to narrow widths				
					Carried Forward	1 275 341.43

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					Brought Forward	1 275 341.43
A7.28		(a) Edges, risers, etc not exceeding 300mm wide	m	422	109.41	46 171.02
A7.29		(c) Raking side of stairs maximum 400mm wide	m	7	273.98	1 917.86
A7.30		(d) Set of V-reedings 100mm wide in top of concrete steps	m	21	91.18	1 914.78
	8.2.6	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
A7.31		(a) Chamfer size 50 x 50mm	m	10	171.55	1 715.50
A7.32		(b) Groove size 70mm wide x 50mm deep	m	2	176.81	353.62
A7.33		(c) Rebate size 100mm x 100mm	m	2	214.44	428.88
	SANS 1200 G	**HOLES AND VOIDS**				
	8.2.6	**BOXING IN FOR HOLES AND VOIDS**				
		(a) Small, circular, up to 0,1m² in area with depth				
A7.34		.1 Over 0m and up to 0,5m	no	6	352.49	2 114.94
A7.35		.2 Over 0,5m and up to 1,0m	no	1	432.55	432.55
		(b) Large, circular, over 0,35m and up to 0,8m diameter with depth				
A7.36		.1 Over 0m and up to 0,5m	no	2	565.99	1 131.98
		(c) Large, other shapes, over 0,5m² up to 0,8m² in area with depth				
A7.37		.1 Over 0m and up to 0,5m	no	1	672.74	672.74
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1	Steel bars				
		(a) .1 Mild steel				
A7.38		.1 All sizes	ton	2.0	18 976.98	37 953.96
		(a) .2 High tensile steel				
A7.39		.1 All sizes	ton	85.0	18 976.98	1 613 043.30
		MESH REINFORCEMENT				
	8.3.2	(c) High tensile welded mesh				
A7.40		.2 Ref no.395	m²	605	107.37	64 958.85
A7.41		.3 Ref no 193 for apron	m²	120	55.60	6 672.00
					Carried Forward	3 054 823.41

					Brought Forward	3 054 823.41
	SANS 1200 G	**STRENGTH CONCRETE**				
		STRENGTH CONCRETE				
	8.4.3	(b) .3 Strength concrete 20Mpa/19mm				
A7.42		.1 Apron slabs and ramps	m³	20	1 840.51	36 810.20
A7.43		.2 Wall footings	m³	19	1 840.51	34 969.69
A7.44		.3 Benching to machine pits to falls including steel floated surface finish	m³	3	1 840.51	5 521.53
	8.4.3	(b) .4 Strength concrete 35Mpa/19mm				
A7.45		.1 Slabs	m³	20	1 978.65	39 573.00
A7.46		.2 Floor slabs	m³	114	1 978.65	225 566.10
A7.47		.3 Wall footings	m³	35	1 978.65	69 252.75
A7.48		.4 Column bases	m³	24	1 978.65	47 487.60
A7.49		.5 Upstands	m³	5	1 978.65	9 893.25
A7.50		.6 Floor duct base and sides	m³	23	1 978.65	45 508.95
A7.51		.7 Walls	m³	5	1 978.65	9 893.25
A7.52		.9 Columns	m³	16	1 978.65	31 658.40
A7.53		.10 Machine plinths	m³	61	1 978.65	120 697.65
A7.54		.11 Ramps	m³	6	1 978.65	11 871.90
A7.55		.13 Crane beam supports	m³	2	1 978.65	3 957.30
A7.56		.14 Stairs and landings	m³	4	1 978.65	7 914.60
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
A7.57		.1 50mm Thick	m³	11	1 857.71	20 434.81
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(c) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A7.58		.1 Roof slabs	m³	220	2 199.02	483 784.40
A7.59		.2 Beams	m³	48	2 199.02	105 552.96
					Carried Forward	4 365 171.75

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					Brought Forward	4 365 171.75
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
A7.60		.1 Floor slabs	m²	229	13.92	3 187.68
A7.61		.2 Top of walls, beams, etc	m²	82	13.92	1 141.44
	8.4.4	(b) Steel floated finish				
A7.62		.1 Floor slabs	m²	1611	19.44	31 317.84
A7.63		.2 Top of walls, beams, etc	m²	23	19.44	447.12
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
A7.64		.1 Expansion joint in floors, columns, beams, etc	m²	10	118.25	1 182.50
A7.65		.4 Narrow widths not exceeding 300mm wide	m	52	35.48	1 844.96
		SEALERS				
	8.5	(b) Polyurethane joint sealer				
A7.66		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	72	153.31	11 038.32
	8.5	(c) Saw cut joints				
A7.67		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	54.44	1 088.80
		Carried forward to Summary of Bills			**Total**	4 416 420.41

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
UV and CIP pump sump

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A3 - Civil works				
		BILL NO. A8 **UV AND CIP PUMP SUMP - WPD**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
A8.1		.1 Column bases	m³	19	614.75	11 680.25
A8.2		.2 Wall footings	m³	21	614.75	12 909.75
A8.3		.3 Sumps	m³	67	614.75	41 188.25
A8.4		.4 Machine bases	m³	4	614.75	2 459.00
		BACKFILLING				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
A8.5		.1 Alongside walls in foundations	m³	22	-	included
A8.6		.3 Under floors	m³	116	-	included
	SANS 1200 G	**SOILCRETE**				
		SOILCRETE				
		Soilcrete (5% OPC)				
A8.7	8.4.10	(a) Backfilling in voids behind walls	m³	11	1 191.52	13 106.72
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
A8.8		.1 Sides of floor slabs, bases etc	m²	54	418.08	22 576.32
A8.9		.2 Walls	m²	11	364.71	4 011.81
A8.10		.3 Sump walls	m²	11	364.71	4 011.81
					Carried Forward	111 943.91

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					Brought Forward	111 943.91
	SANS 1200 G	SMOOTH FORMWORK				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
A8.11		.1 Slabs	m²	246	724.65	178 263.90
A8.12		.2 Beams	m²	27	810.05	21 871.35
A8.13		.3 Walkway slabs	m²	4	636.15	2 544.60
	8.2.2	(b) Plane vertical				
A8.14		.1 Columns	m²	61	364.71	22 247.31
A8.15		.2 Beams	m²	56	418.08	23 412.48
A8.16		.3 Walls	m²	368	311.34	114 573.12
A8.17		.4 Sump walls	m²	9	418.08	3 762.72
A8.18		.6 Pipe support walls	m²	14	418.08	5 853.12
	8.2.5	Smooth formwork to narrow widths				
A8.19		(a) Edges, risers, etc not exceeding 300mm wide	m	80	125.43	10 034.40
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
A8.20		(a) Chamfer size150 x 150mm	m	3	295.06	885.18
A8.21		(b) Groove size 70mm wide x 50mm deep	m	1	160.80	160.80
A8.22		(c) Rebate size 100mm x 100mm	m	1	214.44	214.44
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
A8.23		.1 over 0m and up to 0,5m	no	1	352.49	352.49
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
A8.24		.1 over 0m and up to 0,5m	no	3	432.55	1 297.65
	8.2.6	(c) Large, circular, over 0,35m and up to 0,8m diameter with depth				
A8.25		.1 over 0m and up to 0,5m	no	7	565.99	3 961.93
	8.2.6	(d) Large, other shapes, over 0,5m² up to 1,2m² in area with depth				
A8.26		.2 over 0m and up to ,05m	no	1	672.74	672.74
					Carried Forward	502 052.14

[redacted]

					Brought Forward	502 052.14
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
		Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
A8.27		.1 Smooth formwork	m²	11	619.74	6 817.14
		GROUTING				
	8.7	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
A8.28		.1 Grouting around pipes and fittings	m³	2	21 078.60	42 157.20
	SANS 1200 G	**HDPE LININGS TO STRUCTURES**				
	PSG.3.9	**HDPE LININGS**				
		The following HDPE linings is supplied by AKS Lining Systems (Pty) Ltd or other approved similar product.				
		2.5mm Thick HDPE (colour as specified) lining system fixed to formwork face with approved method to enable the lining clips at the back of the sheeting to be cast into the concrete surface. The exposed lining surface is to be cleaned and welded at all joints with an approved method to ensure a watertight surface, as per manufacturers specification, complete with all cutting and waste, cutting around pipes, etc and sealing around pipes, covers, etc with approved sealant (only net exposed surfaces will be paid for)				
	8.13	(a) Plane horizontal				
A8.29		.1 Slabs	m²	10	462.30	4 623.00
	8.13	(b) Plane vertical				
A8.30		.1 Walls	m²	60	462.30	27 738.00
	8.13	(c) Narrow widths not exceeding 300mm wide				
A8.31		.1 Narrow widths	m	5	337.90	1 689.50
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
A8.32		.1 All sizes	ton	2.0	18 976.98	37 953.96
					Carried Forward	623 030.94

[redacted]

					Brought Forward	623 030.94
	8.3.1	(b) High tensile steel				
A8.33		.1 All sizes	ton	36.0	18 976.98	683 171.28
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
A8.34		(c) Ref no.395	m²	242	107.37	25 983.54
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
A8.35		(a) Blinding layer 50mm thick	m³	7	1 857.71	13 003.97
	8.4.3	(c) Strength concrete 35Mpa/19mm				
A8.36		.1 Column bases	m³	8	1 978.65	15 829.20
A8.37		.2 Columns	m³	5	1 978.65	9 893.25
A8.38		.3 Ramps	m³	2	1 978.65	3 957.30
A8.39		.5 Walkway slabs	m³	1	1 978.65	1 978.65
A8.40		.7 Wall footings	m³	7	1 978.65	13 850.55
A8.41		.8 Machine bases	m³	5	1 978.65	9 893.25
A8.42		.9 Pipe supports	m³	3	1 978.65	5 935.95
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A8.43		.1 Floor slabs	m³	60	2 199.02	131 941.20
A8.44		.2 Walls	m³	62	2 199.02	136 339.24
A8.45		.3 Roof slabs	m³	80	2 199.02	175 921.60
A8.46		.4 Beams	m³	12	2 199.02	26 388.24
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A8.47		.1 Benching to floors to falls including steel floated surface finish	m³	2	2 055.78	4 111.56
					Carried Forward	1 881 229.72

[redacted]

					Brought Forward	1 881 229.72
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
A8.48		.1 Floor slabs	m²	14	13.92	194.88
A8.49		.2 Top of walls, beams, etc	m²	6	13.92	83.52
	8.4.4	(b) Steel floated finish				
A8.50		.1 Floor slabs	m²	467	19.44	9 078.48
A8.51		.2 Top of walls, beams, etc	m²	15	19.44	291.60
	SANS 1200 G	**CONCRETE FLOOR**				
		CONCRETE PROTECTION AND FLOOR COATINGS				
	8.4.11	(a) Sikafloor 263 SL 2A - or other approved - self smoothing epoxy finish applied to manufacturers specifications including all preparation, etc				
A8.52		i) 3 mm thick to concrete floors	m²	600	677.25	406 350.00
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
A8.53		.4 Narrow widths not exceeding 300mm wide	m	53	118.25	6 267.25
	8.5	(b) Polyurethane joint sealer				
A8.54		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	53	153.31	8 125.43
	8.5	(c) Saw cut joints				
A8.55		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	54.44	1 088.80
	SANS 1200 LC	**SLEEVES**				
		SLEEVE PIPES				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires and bends, etc complete				
A8.56		.1 110mm Diameter cast into walkway slabs	m	53	134.05	7 104.65
					Carried Forward	2 319 814.33

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					Brought Forward	2 319 814.33
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
A8.57	8.12	Testing entire structure for water tightness	no	1	17 170.07	17 170.07
		BILL NO. A8 **UV AND CIP PUMP SUMP - WPD**				
		Carried forward to Summary of Bills			**Total**	2 336 984.40

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
UF re-use pump station and Sub station

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A3 - Civil works				
		BILL NO. A9 **UF RE-USE PUMP STATION - WPD AND ULTRAFILTRATION SUBSTATION - ELE**				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
A9.1		.1 Sumps	m³	71	614.75	43 647.25
A9.2		.2 Column bases	m³	41	614.75	25 204.75
A9.3		.3 Machine bases	m³	17	614.75	10 450.75
A9.4		.4 Wall footings	m³	85	614.75	52 253.75
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
A9.5		.2 Hard rock excavation	m³	5	803.79	4 018.95
		BACKFILLING				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
A9.6		.1 Alongside walls in foundations	m³	70	-	included
A9.7		.3 Under floors	m³	500	-	included
	8.3.9	(c) Clean washed river sand filling to				
A9.8		.1 Cable ducts on top of electric cables	m³	16	-	included
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
A9.9		.1 Sides of bases, floor slabs, etc	m²	128	364.71	46 682.88
A9.10		.4 Floor chamber walls	m²	19	364.71	6 929.49
	8.2.5	Rough formwork to narrow widths				
					Carried Forward	189 187.82

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					Brought Forward	189 187.82
A9.11		(a) Edges, risers, etc not exceeding 300mm wide	m	11	125.43	1 379.73
		SMOOTH FORMWORK				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
A9.12		.1 Slabs	m²	712	685.95	488 396.40
A9.13		.4 Beams	m²	47	810.05	38 072.35
	8.2.2	(b) Plane vertical				
A9.14		.1 Floor chamber walls	m²	19	418.08	7 943.52
A9.15		.2 Machine bases	m²	60	418.08	25 084.80
A9.16		.3 Walls	m²	746	311.34	232 259.64
A9.17		.4 Pipe supports	m²	15	418.08	6 271.20
A9.18		.7 Columns	m²	111	364.71	40 482.81
A9.19		.8 Beams	m²	194	364.71	70 753.74
A9.20		.9 Sides and soffit of crane support size 500 x 300 x 800mm high complete	no	15	712.35	10 685.25
	8.2.5	Smooth formwork to narrow widths				
A9.21		(a) Edges, risers, etc not exceeding 300mm wide	m	260	125.43	32 611.80
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
A9.22		(b) Groove size 70mm wide x 50mm deep	m	11	160.80	1 768.80
A9.23		(c) Rebate size 200mm x 100mm deep in walls	m	11	375.50	4 130.50
A9.24		(d) Drip groove 30 mm quarter round	m	130	93.78	12 191.40
A9.25		(e) Rebate size 200mm x 100mm deep in floors	m	2	375.50	751.00
A9.26		(f) 150 x 150mm Splay on top of wall	m	4	295.06	1 180.24
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
A9.27		.1 Over 0m and up to 0,5m	no	1	352.49	352.49
	8.2.6	(b) Small, circular, up to 0,1m² in area with depth				
A9.28		.1 Over 0m and up to 0,5m	no	11	432.55	4 758.05
	8.2.6	(c) Large, circular, over 0,35m and up to 0,8m diameter with depth				
A9.29		.1 Over 0m and up to 0,5m	no	9	565.99	5 093.91
					Carried Forward	1 173 355.45

[redacted]

[redacted]

					Brought Forward	1 173 355.45
	8.2.6	(d) Large, other shapes, over 0,1m² up to 0,5m² in area with depth				
A9.30		.2 Over 0m and up to 0,5m	no	1	672.74	672.74
		CASTING IN PIPES THROUGH CONCRETE				
		SMOOTH FORMWORK				
	8.6	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
A9.31		.1 Smooth formwork	m²	11	651.99	7 171.89
		GROUTING				
	8.7	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
A9.32		.1 Grouting around pipes and fittings	m³	1	21 078.60	21 078.60
		REINFORCEMENT				
		ROD REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
A9.33		.1 All sizes	ton	2.0	18 976.98	37 953.96
	8.3.1	(b) High tensile steel				
A9.34		.1 All sizes	ton	100.0	18 976.98	1 897 698.00
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
A9.35		(b) Ref no.395	m²	670	107.37	71 937.90
A9.36		(c) Ref no 193 for apron	m²	70	55.60	3 892.00
		CONCRETE				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
A9.37		(a) Blinding layer 50mm thick	m³	20	1 857.71	37 154.20
	8.4.3	(c) Strength concrete 35Mpa/19mm				
A9.38		.2 Column bases	m³	20	1 978.65	39 573.00
					Carried Forward	3 290 487.74

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					Brought Forward	3 290 487.74
A9.39		.3 Wall footings	m³	30	1 978.65	59 359.50
A9.40		.4 Ramps	m³	5	1 978.65	9 893.25
A9.41		.5 Machine bases	m³	33	1 978.65	65 295.45
A9.42		.6 Pipe supports	m³	2	1 978.65	3 957.30
A9.43		.7 Columns	m³	10	1 978.65	19 786.50
A9.44		.9 Floor slabs	m³	100	1 978.65	197 865.00
A9.52		.10 Crane rail supports	m³	3	1 978.65	5 935.95
A9.52		.11 Apron slabs	m³	7	1 978.65	13 850.55
A9.54		.12 Floor duct bases	m³	14	1 978.65	27 701.10
		WATERPROOF CONCRETE				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A9.48		.1 Roof slabs	m³	214	2 199.02	470 590.28
A9.49		.2 Beams	m³	40	2 199.02	87 960.80
A9.50		.3 Floor slabs	m³	64	2 199.02	140 737.28
A9.51		.4 Walls	m³	131	2 199.02	288 071.62
A9.52		.5 Floor chamber walls and floors	m³	9	2 199.02	19 791.18
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A9.53		.1 Benching to floors to falls including steel floated surface finish	m³	56	1 764.19	98 794.64
		(g) 1:4 Cement riversand screed with steel floated finish				
A9.54		.1 50 mm thick on sand filling in cable ducts	m²	16	88.21	1 411.36
		SURFACE FINISHES				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(b) Steel floated finish				
A9.55		.1 Slabs, floor slabs and ramps	m²	1336	19.44	25 971.84
					Carried Forward	4 827 461.34

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					Brought Forward	4 827 461.34
A9.56		.2 Top of walls, beams, etc	m²	162	19.44	3 149.28
	8.4.4	(c) Power floated finish				
A9.57		.1 Floor slabs	m²	183	38.87	7 113.21
		CONCRETE FLOOR				
		CONCRETE PROTECTION AND FLOOR COATINGS				
	8.4.11	(a) Sikafloor 263 SL ZA - or other approved - self smoothing epoxy finish applied to manufacturing specifications including all preparation, etc				
A9.58		i) 3 mm thick to concrete floors	m²	750	677.25	507 937.50
		EXPANSION JOINTS				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
A9.59		.4 Narrow widths not exceeding 300mm wide	m	153	35.48	5 428.44
		JOINT SEALER				
	8.5	(b) Polyurethane joint sealer				
A9.60		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	32	153.31	4 905.92
	8.5	(c) Saw cut joints				
A9.61		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	54.44	1 088.80
	SANS 1200 G	**TESTING**				-
		TESTING FOR WATER TIGHTNESS				- - - -
A9.62	8.12	Testing entire structure for water tightness	no	1	46 956.43	46 956.43
		BILL NO. A9 **UF RE-USE PUMP STATION - WPD AND ULTRAFILTRATION SUBSTATION - ELE**				
		Carried forward to Summary of Bills			**Total**	5 404 040.92

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A3 - Civil works				
		BILL NO. A10 **UF REJECT RETURN PUMP STATION - WPE**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
A10.1		.1 Sumps	m³	20	614.75	12 295.00
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
A10.2		.1 Alongside walls in foundations	m³	11	248.89	2 737.79
A10.3		.3 Under floors	m³	32	248.89	7 964.48
	SANS 1200 G	**SOILCRETE**				
		SOILCRETE				
		Soilcrete (5% OPC)				
A10.4	8.4.10	(a) Backfilling in voids behind walls	m³	5	1 191.52	5 957.60
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
A10.5		.1 Sides of floor slabs, bases etc	m²	18	364.71	6 564.78
A10.6		.2 Walls	m²	160	364.71	58 353.60
A10.7		.3 Floor channel walls	m²	14	364.71	5 105.94
		SMOOTH FORMWORK				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
					Carried Forward	98 979.19

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					Brought Forward	98 979.19
A10.8		.1 Walkway slabs	m²	5	685.95	3 429.75
	8.2.2	(b) Plane vertical				
A10.9		.3 Walls	m²	230	364.71	83 883.30
A10.10		.4 Floor channel walls	m²	14	364.71	5 105.94
A10.11		.5 Parapet walls	m²	16	364.71	5 835.36
A10.12		.6 Pipe support walls	m²	2	418.08	836.16
	8.2.5	Smooth formwork to narrow widths				
A10.13		(a) Edges, risers, etc not exceeding 300mm wide	m	17	109.41	1 859.97
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
A10.14		(a) Chamfer size150 x 150mm	m	3	295.06	885.18
A10.15		(b) Groove size 70mm wide x 50mm deep	m	1	160.80	160.80
A10.16		(c) Rebate size 100mm x 100mm	m	1	198.42	198.42
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
A10.17		.1 over 0m and up to 0,5m	no	1	438.49	438.49
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
A10.18		.1 over 0m and up to 0,5m	no	4	518.55	2 074.20
	8.2.6	(c) Large, circular, over 0,35m and up to 0,7m diameter with depth				
A10.19		.1 over 0m and up to 0,5m	no	5	651.99	3 259.95
		CASTING IN PIPES THROUGH CONCRETE				
		SMOOTH FORMWORK				
	8,6	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
A10.20		.1 Smooth formwork	m²	11	651.99	7 171.89
		GROUTING				
	8.7	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
					Carried Forward	214 118.60

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					Brought Forward	214 118.60
A10.21		.1 Grouting around pipes and fittings	m³	1	21 078.60	21 078.60
	SANS 1200 G	**HDPE LININGS TO STRUCTURES**				
		HDPE LININGS The following HDPE linings is supplied by AKS Lining Systems (Pty) Ltd or other approved similar product. 2.5mm Thick HDPE (colour as specified) lining system fixed to formwork face with approved method to enable the lining clips at the back of the sheeting to be cast into the concrete surface. The exposed lining surface is to be cleaned and welded at all joints with an approved method to ensure a watertight surface, as per manufacturers specification, complete with all cutting and waste, cutting around pipes, etc and sealing around pipes, covers, etc with approved sealant (only net exposed surfaces will be paid for)				
	8.13	(a) Plane horizontal				
A10.22		.1 Slabs	m²	30	462.30	13 869.00
	8.13	(b) Plane vertical				
A10.23		.1 Walls	m²	90	462.30	41 607.00
	8.13	(c) Narrow widths not exceeding 300mm wide				
A10.24		.1 Narrow widths	m	10	337.90	3 379.00
		REINFORCEMENT				
		REINFORCEMENT Steel bars				
	8.3.1	(a) Mild steel				
A10.25		.1 All sizes	ton	2.0	18 976.98	37 953.96
	8.3.1	(b) High tensile steel				
A10.26		.1 All sizes	ton	21.0	18 976.98	398 516.58
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
A10.27		(c) Ref no.395	m²	29	107.37	3 113.73
		CONCRETE				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
					Carried Forward	733 636.47

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					Brought Forward	733 636.47
A10.28		(a) Blinding layer 50mm thick	m³	6	1 857.71	11 146.26
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 20Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A10.29		.1 Floor slabs	m³	47	2 199.02	103 353.94
A10.30		.2 Pipe supports	m³	1	2 199.02	2 199.02
A10.31		.3 Walls	m³	87	2 199.02	191 314.74
A10.32		.4 Parapet walls	m³	3	2 199.02	6 597.06
A10.33		.5 Floor channel base and sides	m³	4	2 199.02	8 796.08
A10.34		.6 Walkway slabs	m³	1	2 199.02	2 199.02
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A10.35		.1 Benching to floors to falls including steel floated surface finish	m³	33	2 055.78	67 840.74
		SURFACE FINISHES				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
A10.36		.1 Floor slabs	m²	5	13.92	69.60
A10.37		.2 Top of walls, beams, etc	m²	3	13.92	41.76
	8.4.4	(b) Steel floated finish				
A10.38		.1 Floor slabs	m²	11	19.44	213.84
A10.39		.2 Top of walls, beams, etc	m²	5	19.44	97.20
		EXPANSION JOINTS				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
A10.40		.4 Narrow widths not exceeding 300mm wide	m	21	35.48	745.08
	8.5	(b) Polyurethane joint sealer				
					Carried Forward	1 128 250.81

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					Brought Forward	1 128 250.81
A10.41		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	21	153.31	3 219.51
	8.5	(c) Saw cut joints				
A10.42		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	54.44	1 088.80
		SLEEVES				
	SANS 1200 LC	**SLEEVE PIPES**				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires and bends, etc complete				
A10.43		.1 110mm Diameter cast into walkway slabs	m	12	134.05	1 608.60
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
A10.44	8.12	Testing entire structure for water tightness	no	1	9 928.79	9 928.79
		BILL NO. A10 **UF REJECT RETURN PUMP STATION - WPE**				
		Carried forward to Summary of Bills			**Total**	1 144 096.51

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Chambers and manholes

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A3 - Civil works				
		BILL NO. A11 **CHAMBERS AND MANHOLES - SQC - SQD - SQE - SQO - SQP and CH.1-8**				
		CIVIL WORKS				
		FLOW METER CHAMBER (REJECT RETURN PUMP STATION)				
		Drawing 3089.00.00.SQC.14.U001				
	SANS 1200D	**RESTRICTED EXCAVATIONS**				
	PSD	**RESTRICTED EXCAVATIONS** **Note:** Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
A11.1		4 Chambers	m^3	33	365.86	12 073.38
	8.3.3.b	Extra over reference 8.3.3 (a) for				
A11.2		2 Hard rock excavation	m^3	1	803.79	803.79
	SANS 1200D	**WORKING SPACE**				
		WORKING SPACE Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
A11.3	8.3.5	(a) Excavate for working space (previously excavated face + 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 2,0m deep, including backfilling and compaction to 93% mod AASHTO density	m^2	34	365.86	12 439.24
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
					Carried Forward	25 316.41

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					Brought Forward	25 316.41
	8.3.9.a	Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
A11.4		1 Alongside walls in foundations	m^3	10	-	included
		COMMERCIAL MATERIAL				
	8.3.4.b	Extra over reference 8.3.3 (a) for backfill or for fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
A11.5		1 Alongside walls in foundations	m^3	5	248.89	1 244.45
	SANS 1200G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1.b	Plane vertical				
A11.6		1 Sides of floor slabs, bases, etc	m^2	5	418.08	2 090.40
A11.7		3 Walls	m^2	32	364.71	11 670.72
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1.a	Plane horizontal				
A11.8		1 Slabs	m^2	7	583.65	4 085.55
	8.2.2.b	Plane vertical				
A11.9		3 Walls	m^2	32	364.71	11 670.72
A11.10		4 Pipe support	m^2	2	418.08	836.16
	8.2.5	Smooth formwork to narrow widths				
A11.11		(a) Edges, risers, etc not exceeding 300 mm wide	m	5	109.41	547.05
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25 mm in size				
A11.12		(a) Chamfer size 50 x 50 mm	m	2	153.25	306.50
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6.a	Small, circular, up to 0.35m diameter with depth				
A11.13		1 Over 0m and up to 0.5m	no	1	438.49	438.49
					Carried Forward	58 206.45

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					Brought Forward	58 206.45
	8.2.6.b	Small, other shapes, up to 0,1m² in area with depth				
A11.14		1 Over 0m and up to 0,5m	no	2	518.55	1 037.10
	8.2.6.c	Large, circular, over 0,35m and up to 0,7m diameter with depth				
A11.15		1 Over 0m and up to 0,5m	no	2	651.99	1 303.98
	SANS 1200G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
		Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
A11.16	8.7	1 Smooth formwork (all sizes and positions)	m²	5	651.99	3 259.95
		GROUTING				
		Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
A11.17	8.7	2 Grouting around pipes and fittings	m³	0.5	21 078.60	10 539.30
	SANS 1200G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
A11.18		1 All sizes	ton	0.1	18 976.98	1 897.70
	8.3.1.b	High tensile steel				
A11.19		1 All sizes	ton	1.0	18 976.98	18 976.98
	SANS 1200G	**CONCRETE**				
	8.4.2	Strength concrete 15Mpa/19mm				
A11.20		(a) Blinding layer 50mm thick	m³	1	1 857.71	1 857.71
	8.4.3	Strength concrete 35Mpa/19mm				
A11.21		4 Floor slabs	m³	5	1 978.65	9 893.25
A11.22		9 Walls	m³	8	1 978.65	15 829.20
					Carried Forward	122 801.62

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					Brought Forward	122 801.62
A11.23		23 Pipe supports	m³	1	1 978.65	1 978.65
		BENCHING				
	8.4.4	Strength concrete 20Mpa/13mm				
A11.24		1 Benching to floors to falls including steel floated surface finish	m³	2	1 802.35	3 604.70
	SANS 1200G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
A11.25		1 Slabs, floor slabs, etc	m²	10	13.92	139.20
A11.26		2 Top of walls, beams, etc	m²	4	13.92	55.68
	SANS 1200G	**PRECAST CONCRETE**				
		PRECAST CONCRETE				
		Precast concrete units supplied and fixed complete including all concrete, formwork, reinforcing, lifting hooks, suitable joint sealing, bedding material, etc, complete				
	8.6	Strength concrete 35Mpa/19mm				
A11.27		a) Cover slab size 976 x 2500 x 150 mm thick placed on top of chamber	no	1	7 444.14	7 444.14
		JOINT SEALER				
	8.5	b) Polyurethane joint sealer				
A11.28		.1 Prime with an approved primer and fill 10 x 20 mm joint with polyurethane sealer	m	6	306.61	1 839.66
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
A11.29	8.12	Testing entire structure for water tightness	no	1	4 695.64	4 695.64
		FLOW METER CHAMBER (UF FEED AND BACKWASH)				
		Drawing 3089.00.00.SQD.14.U001				
	SANS 1200D	**RESTRICTED EXCAVATIONS**				
					Carried Forward	142 559.29

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					Brought Forward	142 559.29
		RESTRICTED EXCAVATIONS				
		Note: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
A11.30		4 Chambers	m^3	38	365.86	13 902.68
	8.3.3.b	Extra over reference 8.3.3 (a) for				
A11.31		2 Hard rock excavation	m^3	1	803.79	803.79
	SANS 1200D	**WORKING SPACE**				
	PSD	**WORKING SPACE**				
		Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
A11.32	8.3.5	(a) Excavate for working space (previously excavated face + 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 2,0m deep, including backfilling and compaction to 93% mod AASHTO density	m^2	38	365.86	13 902.68
	SANS 1200D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
	8.3.9.a	Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
A11.33		1 Alongside walls in foundations	m^3	10	-	-
		COMMERCIAL MATERIAL				
	8.3.4.b	Extra over reference 8.3.3 (a) for backfill or for fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
A11.34		1 Alongside walls in foundations	m^3	8	248.89	1 991.12
					Carried Forward	173 159.56

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					Brought Forward	173 159.56
	SANS 1200G PSG	**ROUGH FORMWORK**				
		ROUGH FORMWORK				
	8.2.1.b	Plane vertical				
A11.35		1 Sides of floor slabs, bases, etc	m^2	5	418.08	2 090.40
A11.36		3 Walls	m^2	36	418.08	15 050.88
	SANS 1200G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1.a	Plane horizontal				
A11.37		1 Slabs	m^2	6	583.65	3 501.90
	8.2.2.b	Plane vertical				
A11.38		3 Walls	m^2	36	418.08	15 050.88
A11.39		4 Pipe support	m^2	2	418.08	836.16
	8.2.5	Smooth formwork to narrow widths				
A11.40		(a) Edges, risers, etc not exceeding 300 mm wide	m	5	125.43	627.15
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25 mm in size				
A11.41		(a) Chamfer size 50 x 50 mm	m	2	150.20	300.40
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6.a	Small, circular, up to 0.35m diameter with depth				
A11.42		1 Over 0m and up to 0.5m	no	1	352.49	352.49
	8.2.6.b	Small, other shapes, up to 0.1m^2 in area with depth				
A11.43		1 Over 0m and up to 0,5m	no	2	432.55	865.10
	8.2.6.c	Large, circular, over 0.35m and up to 0.7m diameter with depth				
A11.44		1 Over 0m and up to 0,5m	no	4	565.99	2 263.96
	SANS 1200G	**CASTING IN PIPES THROUGH CONCRETE**				
					Carried Forward	214 098.88

[redacted]

[redacted]

					Brought Forward	214 098.88
		SMOOTH FORMWORK				
		Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
A11.45	8.7	1 Smooth formwork (all sizes and positions)	m²	5	651.99	3 259.95
		GROUTING				
		Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
A11.46	8.8	1 Grouting around pipes and fittings	m³	0.5	21 078.60	10 539.30
	SANS 1200G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
A11.47		1 All sizes	ton	0.1	18 976.98	1 897.70
	8.3.1.b	High tensile steel				
A11.48		1 All sizes	ton	1.0	18 976.98	18 976.98
	SANS 1200G	**CONCRETE**				
	8.4.2	Strength concrete 15Mpa/19mm				
A11.49		(a) Blinding layer 50mm thick	m³	1	1 857.71	1 857.71
		WATERPROOF CONCRETE				
	8.4.3.	Strength concrete 35Mpa/19mm				
A11.50		4 Floor slabs	m³	5	2 199.02	10 995.10
A11.51		9 Walls	m³	8	1 978.65	15 829.20
A11.52		23 Pipe supports	m³	1	1 978.65	1 978.65
		BENCHING				
	8.4.4	Strength concrete 20Mpa/13mm				
A11.53		1 Benching to floors to falls including steel floated surface finish	m³	2	1 802.35	3 604.70
					Carried Forward	283 038.17

[redacted]

					Brought Forward	283 038.17
	SANS 1200G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
A11.54		1 Slabs, floor slabs, etc	m²	10	13.92	139.20
A11.55		2 Top of walls, beams, etc	m²	4	13.92	55.68
	SANS 1200G	**PRECAST CONCRETE**				
		PRECAST CONCRETE				
		Precast concrete units supplied and fixed complete including all concrete, formwork, reinforcing, lifting hooks, suitable joint sealing, bedding material, etc, complete				
	8.6	Strength concrete 35Mpa/19mm				
A11.56		a) Cover slab size 976 x 3500 x 200 mm thick placed on top of chamber	no	1	10 159.03	10 159.03
		JOINT SEALER				
	8.5	b) Polyurethane joint sealer				
A11.57		.1 Prime with an approved primer and fill 12 x 12 mm joint with polyurethane sealer	m	7	153.31	1 073.17
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
A11.58	8.12	Testing entire structure for water tightness	no	1	4 695.64	4 695.64
		ULTRA SONIC METER CHAMBER (UF - REUSE)				
		Drawing 3089.00.00.SQE.14.U001				
	SANS 1200D	**RESTRICTED EXCAVATIONS**				
		RESTRICTED EXCAVATIONS				
		Note: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
					Carried Forward	299 160.89

					Brought Forward	299 160.89
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
A11.59		4 Chambers	m³	30	365.86	10 975.80
	8.3.3.b	Extra over reference 8.3.3 (a) for				
A11.60		2 Hard rock excavation	m³	3	803.79	2 411.37
	SANS 1200D	**WORKING SPACE**				
	PSD	**WORKING SPACE**				
		Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
A11.61	8.3.5	(a) Excavate for working space (previously excavated face + 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 2,0m deep, including backfilling and compaction to 93% mod AASHTO density	m²	30		
					365.86	10 975.80
	SANS 1200D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
	8.3.9.a	Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
A11.62		1 Alongside walls in foundations	m³	10	-	-
		COMMERCIAL MATERIAL				
	8.3.4.b	Extra over reference 8.3.3 (a) for backfill or for fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
A11.63		1 Alongside walls in foundations	m³	8	248.89	1 991.12
	SANS 1200G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1.b	Plane vertical				
A11.64		1 Sides of floor slabs, bases, etc	m²	5	418.08	2 090.40
A11.65		3 Walls	m²	30	418.08	12 542.40
					Carried Forward	340 147.78

					Brought Forward	340 147.78
	SANS 1200G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1.a	Plane horizontal				
A11.66		1 Slabs	m^2	7	583.65	4 085.55
	8.2.2.b	Plane vertical				
A11.67		3 Walls	m^2	30	418.08	12 542.40
A11.68		4 Pipe support	m^2	2	418.08	836.16
	8.2.5	Smooth formwork to narrow widths				
A11.69		(a) Edges, risers, etc not exceeding 300 mm wide	m	5	125.43	627.15
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25 mm in size				
A11.70		(a) Chamfer size 50 x 50 mm	m	2	107.50	215.00
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6.a	Small, circular, up to 0.35m diameter with depth				
A11.71		1 Over 0m and up to 0.5m	no	1	352.49	352.49
	8.2.6.b	Small, other shapes, up to 0.1m^2 in area with depth				
A11.72		1 Over 0m and up to 0,5m	no	2	432.55	865.10
	8.2.6.c	Large, circular, over 0.35m and up to 0.8m diameter with depth				
A11.73		1 Over 0m and up to 0,5m	no	2	565.99	1 131.98
	SANS 1200G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
A11.74		1 Smooth formwork (all sizes and positions)	m^2	5	651.99	3 259.95
		GROUTING				
					Carried Forward	364 063.56

[redacted]

					Brought Forward	364 063.56
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
A11.75		1 Grouting around pipes and fittings	m³	0.5	21 078.60	10 539.30
	SANS 1200G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
A11.76		1 All sizes	ton	0.1	18 976.98	1 897.70
	8.3.1.b	High tensile steel				
A11.77		1 All sizes	ton	1	18 976.98	18 976.98
	SANS 1200G	**CONCRETE**				
	8.4.2	Strength concrete 15Mpa/19mm				
A11.78		(a) Blinding layer 50mm thick	m³	1	1 857.71	1 857.71
		WATERPROOF CONCRETE				
	8.4.3	Strength concrete 35Mpa/19mm				
A11.79		4 Floor slabs	m³	5	1 978.65	9 893.25
A11.80		9 Walls	m³	8	1 978.65	15 829.20
A11.81		23 Pipe supports	m³	1	1 978.65	1 978.65
		BENCHING				
	8.4.3	Strength concrete 20Mpa/13mm				
A11.82		1 Benching to floors to falls including steel floated surface finish	m³	2	1 802.35	3 604.70
	SANS 1200G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
A11.83		1 Slabs, floor slabs, etc	m²	10	13.92	139.20
A11.84		2 Top of walls, beams, etc	m²	4	13.92	55.68
					Carried Forward	428 835.92

[redacted]

					Brought Forward	428 835.92
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
A11.85	8.12	Testing entire structure for water tightness	no	1	4 695.64	4 695.64
		CHAMBERS 1050 MM DIA RC EFFLUENT PIPELINE				
		Drawing 3089.00.00. SQO,SQP,14.U001 and CH. 1 - 8				
	SANS 1200D	**RESTRICTED EXCAVATIONS**				
	PSD	**RESTRICTED EXCAVATIONS**				
		Note: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
A11.86		4 Chambers	m^3	190	365.86	69 513.40
	8.3.3.b	Extra over reference 8.3.3 (a) for				
A11.87		2 Hard rock excavation	m^3	1	803.79	803.79
	SANS 1200D	**WORKING SPACE**				
		WORKING SPACE				
		Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
A11.88	8.3.5	(a) Excavate for working space (previously excavated face + 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 2,0m deep, including backfilling and compaction to 93% mod AASHTO density	m^2	100	365.86	36 586.00
	SANS 1200D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
					Carried Forward	540 434.75

[redacted]

					Brought Forward	540 434.75
	8.3.9.a	Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
A11.89		1 Alongside walls in foundations	m^3	125	-	-
		COMMERCIAL MATERIAL				
	8.3.4.b	Extra over reference 8.3.3 (a) for backfill or for fill with G7 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
A11.90		1 Alongside walls in foundations	m^3	10	248.89	2 488.90
	SANS 1200G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1.b	Plane vertical				
A11.91		1 Sides of floor slabs, bases, etc	m^2	60	418.08	25 084.80
A11.92		3 Walls	m^2	450	311.34	140 103.00
	SANS 1200G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.1.a	Plane horizontal				
A11.93		1 Slabs	m^2	85	636.15	54 072.75
	8.2.2.b	Plane vertical				
A11.94		3 Walls	m^2	330	311.34	102 742.20
A11.95		4 Pipe support	m^2	1	418.08	418.08
	8.2.5	Smooth formwork to narrow widths				
A11.96		(a) Edges, risers, etc not exceeding 300 mm wide	m	225	125.43	28 221.75
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25 mm in size				
A11.97		(a) Chamfer size 50 x 50 mm	m	2	150.20	300.40
A11.98		(b) Groove size 70 mm wide x 50 mm deep	m	2	160.80	321.60
					Carried Forward	894 188.23

[redacted]

					Brought Forward	894 188.23
A11.99		(c) Rebate size 100 mm x 100 mm	m	2	214.44	428.88
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6.a	Small, circular, up to 0.35m diameter with depth				
A11.100		1 Over 0m and up to 0.5m	no	1	352.49	352.49
	8.2.6.b	Small, other shapes, up to 0.1m² in area with depth				
A11.101		1 Over 0m and up to 0,5m	no	2	432.55	865.10
	8.2.6.c	Large, circular, over 0.35m and up to 0.7m diameter with depth				
A11.102		1 Over 0m and up to 0,5m	no	1	565.99	565.99
	8.2.6.d	Large, circular, over 1.0m² up to 1.5m² in area with depth				
A11.103		2 Over 0m and up to 0,5m	no	16	672.74	10 763.84
	8.2.6.e	Large, circular, over 1.5m² up to 2.0m² in area with depth				
A11.104		1 Over 0m and up to 0,5m	no	4	1 099.72	4 398.88
	SANS 1200G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
A11.105		1 Smooth formwork (all sizes and positions)	m²	30	651.99	19 559.70
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
A11.106		1 Grouting around pipes and fittings	m³	3	21 078.60	63 235.80
	SANS 1200G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
A11.107		1 All sizes	ton	0.3	18 976.98	5 693.09
					Carried Forward	1 000 052.01

[redacted]

					Brought Forward	1 000 052.01
	8.3.1.b	High tensile steel				
A11.108		1 All sizes	ton	16	18 976.98	303 631.68
	SANS 1200G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
A11.109		(a) Blinding layer 50mm thick	m^3	7	1 857.71	13 003.97
		WATERPROOF CONCRETE				
	8.4.3	Strength concrete 35Mpa/19mm				
A11.110		4 Floor slabs	m^3	5	2 055.78	10 278.90
A11.111		9 Walls	m^3	8	2 055.78	16 446.24
A11.112		23 Pipe supports	m^3	1	2 055.78	2 055.78
		BENCHING				
	8.4.3	Strength concrete 20Mpa/13mm				
A11.113		1 Benching to floors to falls including steel floated surface finish	m^3	12	1 802.35	21 628.20
	SANS 1200G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
A11.114		1 Slabs, floor slabs, etc	m^2	140	13.92	1 948.80
A11.115		2 Top of walls, beams, etc	m^2	4	13.92	55.68
	SANS 1200G	**PRECAST CONCRETE**				
		PRECAST CONCRETE				
		Precast concrete units supplied and fixed complete including all concrete, formwork, reinforcing, lifting hooks, suitable joint sealing, bedding material, etc. complete				
	8.6	Strength concrete 35Mpa/19mm				
A11.116		a) Cover slab size 1200 x 2900 x 150 mm thick placed on top of chamber	no	5	13 398.09	66 990.45
					Carried Forward	1 436 091.71

[redacted]

					Brought Forward	1 436 091.71
		JOINT SEALER				
	8.5	b) Polyurethane joint sealer				
A11.117		.1 Prime with an approved primer and fill 12 x 12 mm joint with polyurethane sealer	m	30	153.31	4 599.30
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
A11.118	8.12	Testing entire structure for water tightness	no	3	4 695.64	14 086.92
		MISCELLANEOUS				
		MISCELLANEOUS				
A11.119		1 Cut 1 050 mm dia reinforced concrete pipe to suit chamber walls at micro screens	no	2	4 124.90	8 249.80
		2 Scabble concrete walls ± 10mm deep to expose concrete surface over width of new concrete wall/floor				
A11.120		i) 200 mm wide	m	7	206.25	1 443.75
A11.121		ii) Drill 16 mm dia holes 180 mm deep in centre of slab walls every 200 mm and insert 12 mm dia, high tensile steel, 800 mm long with suitable epoxy	no	35	152.82	5 348.70
A11.122		iii) Use suitable wet to dry epoxy prior of pouring concrete strictly in accordance to manufacturers instructions, width 200 mm wide	m	7	141.51	990.57
A11.123		3 Cut out of 250 mm thick reinforced canal wall 2000 x 800 mm, built up cut up surface with standard non shrink grout in a straight line	sum	-	23 722.28	23 722.28
		BILL NO. A11 **CHAMBERS AND MANHOLES - SQC - SQD - SQE - SQO - SQP and CH.1-8**				
		Carried forward to Summary of Bills			**Total**	1 494 533.03

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A4 - Water and sewer connections				
		BILL NO. A12 **WATER AND SEWER CONNECTIONS**				
		CIVIL WORKS				
		CLEAR SITE				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3.a	Restricted excavation in all materials and place within freehaul				
A12.1		1 Chambers and manholes	m³	40	365.86	14 634.40
	SANS 1200 DB	**SCHEDULE - EARTHWORKS (Pipe trenches)**				
	8.3.2	Excavate in all material, backfill and compact to 90% mod AASHTO density, and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches				
	8.3.2.a.1	Pipe diameter 100 dia up to 200 nom dia with 300 mm side allowance each side				
A12.2		i) 0,00 m - 1,00 m depth	m³	20	187.82	3 756.40
A12.3		ii) 1,01 m - 1,50 m depth	m³	50	187.82	9 391.00
A12.4		iii) 1,51 m - 2,00 m depth	m³	25	406.46	10 161.50
	8.3.5	Existing services that intersect or adjoin a pipe trench				
	8.3.5.1	Services that intersect a trench				
		1 Stormwater pipes				
A12.5		1 450 mm dia	no	1	503.55	503.55
		CONCRETE				
	8.2.4	Class 20/19 concrete for pipe thrust blocks				
A12.6		(a) pipe thrust blocks	m³	1	2 089.80	2 089.80
A12.7		(b) encacing of pipes	m³	3	2 089.80	6 269.40
	SANS 1200LB	**BEDDING**				
	PSLB	**FROM EXCAVATIONS**				
					Carried Forward	46 806.05

					Brought Forward	46 806.05
	8.2.1	Provision of bedding material from trench excavations, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
A12.8		a) Selected granular material	m^3	25	97.37	2 434.25
A12.9		b) Selected fill material	m^3	10	97.37	973.70
		FROM COMMERCIAL SOURCES				
	8.2.2.3	Provision of bedding material by importation from commercial sources selected by the Contractor				
A12.10		a) Selected granular material	m^3	10	248.89	2 488.90
A12.11		b) Selected fill material	m^3	3	248.89	746.67
	SANS 1200L PSL	**SCHEDULE - MEDIUM - PRESSURE PIPELINE**				
	8.2.1	Supply, lay, joint bed (flexible pipe bedding) and test water pipes				
		uPVC pipelines, Class 12				
A12.12		i) 75 mm dia	m	10	100.05	1 000.50
		Type 4 HDPE, Class 12 pipes for water reticulation Rate to include for all bends, cut lengths, couplings, tees reducers, etc				
A12.13		i) 50 mm dia	m	10	72.89	728.90
A12.14		ii) 40 mm dia	m	40	70.20	2 808.00
A12.15		iii) 25 mm dia	m	60	56.51	3 390.60
	8.2.2	Supply and bedding of specials complete with couplings Saddles				
A12.16		i) 75 mm dia with 50 mm dia drilling on uPVC pipe	no	2	188.12	376.24
A12.17		ii) 75 mm dia with 40 mm dia drilling on uPVC	no	2	181.68	363.36
A12.18		Stand pipe with tap garden hose connection clamped to concrete or brick wall or fixed on to MS iron dropper, complete as shown on drawing 3089.00.00.DET.14.D005	no	3	1 664.64	4 993.92
		Stop cock chamber complete as shown on drawing 3089.00.00.DET.14.D005				
A12.19		i) for 40mm dia. Bronze globe valve	no	1	2 758.66	2 758.66
		Hose reel installation				
					Carried Forward	69 869.75

					Brought Forward	69 869.75
A12.20		Approved fire hose reel from Centurion or similar and approved. Complete with union, isolating valve with hand wheel, 25 mm dia pipe from Dunlop, length 25 m mounted on panel against steel column, ref drawing 3089.00.00.DET.14.D005	no	3	-	included
	SANS 1200G PSLD					
A12.21	8.4.10	Soilcrete backfill with 5% OPC for pipelines where vehicle traffic is expected. Top 500 mm of trench at positions to be determined by Engineer on site.	m^3	2	1 191.52	2 383.04
	SANS 1200LD	**SEWERS**				
	8.2.1	Supply, lay, joint, bed sewer pipes and test pipeline Corflo solid wall CL 51 normal duty pipe in accordance to SANS 1601 or similar and approved				
A12.22		i) 110 mm dia	m	20		included
	8.2.2	Extra over item 8.2.1 for specials				
A12.23		i) Junction plain 45° with access	no	1		Included
A12.24		ii) Rodding eye 45° complete as shown on CoCT drawing S3	no	1		Included
A12.25	8.2.3	16 m^3 Conservancy tank with suction point and quick coupling, access frame and lid complete as shown on drawing 3089.00.00.DET.13.D010	no	1	82 315.82	82 315.82
		BILL NO. A12 **WATER AND SEWER CONNECTIONS**				
		Carried forward to Summary of Bills			**Total**	154 568.61

Contract: Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Structural steelwork

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A5 - Structural steelwork				
		BILL NO. A13 **STRUCTURAL STEELWORK**				
	SANS 1200 HA PSHA	**STRUCTURAL STEELWORK (SMALL WORKS)**				
		STRUCTURAL STEEL				
	8.3.1	UF Building and Compressor Room				
A13.1	8.3.1.1	Hot dip galvanized PC stairs, with stair treads, square hollow section support bolted to concrete floor and slab with handrail. Complete as shown on drawing. 3089.00.00.WOB.13.D001	No	1	92 608.07	92 608.07
A13.2	8.3.1.2	Stainless Steel 900 x 600 mm frame and hinged access cover bolted to concrete slab. Complete as shown on drawing. 3089.00.00.DET.13.D003	No	3	9 358.42	28 075.26
	8.3.2	HANDRAILS				
	8.3.2.1	Stainless Steel standard ball type approved (1000 mm high) handrail, horizontal, side or top mounted) including shaped ends				
		a) Top mounted				
A13.3		1 Micro Screen Installation	m	85	1 822.41	154 904.85
A13.4		2 Feed Pump Station	m	4	1 822.41	7 289.64
A13.5		3 UF building and Compressor Room	m	2	1 822.41	3 644.82
A13.6		4 Reject return Pump Station	m	26	1 822.41	47 382.66
A13.7		5 Chambers	m	40	1 822.41	72 896.40
		b) Side mounted				
A13.8		1 UV and CIP Pump Installation	m	4	1 822.41	7 289.64
A13.9		2 Reject return Pump Station	m	6	1 822.41	10 934.46
	8.3.2.2	Stainless steel standard ball type approved (1 000 mm high) handrail, sloping, side or top mounted				
		a) Top mounted				
A13.10		1 Micro Screen installation	m	4	1 822.41	7 289.64
A13.11		2 Feed Pump Station	m	5	1 822.41	9 112.05
	8.3.2.3	Stainless steel ball type approved (450 mm high) handrail, horizontal, side or top mounted				
					Carried Forward	441 427.49

					Brought Forward	441 427.49
		a) Top mounted				
A13.12		1 Feed Pump Station	m	3	1 880.30	5 640.90
	8.3.2.4	Stainless steel removable ball type approved (450 mm high) handrail, horizontal top mounted				
A13.13		1 Feed Pump Station	m	4	1 996.09	7 984.36
	8.3.3	LADDERS, COMPLETE AND INSTALLED				
	8.3.3.1	Hot dip galvanized cat ladder complete as shown on drawing 3089.00.00.DET.13.D002				
		Micro Screen Installation				
A13.14		a) X = 7.00 m Y = 5.65 m	no	7	10 363.01	72 541.07
		UV and CIP pump installation				
A13.15		b) X = 11.85 Y = 8.57	no	1	19 699.39	19 699.39
	8.3.3.2	Hot dip galvanized ladder without safety hoop complete as shown on drawing 3089.00.00 DET.13.D001				
A13.16		1 Chambers and manholes length ± 1 800 mm	no	3	18 597.51	55 792.53
	8.3.4	FLOORING				
		Complete and installed with angle iron frames cast into concrete and or MS channel supports bolted to concrete and all required cut outs, all edges banded				
	8.3.4.1	Hot dip galvanized banded RS 40 grating with 30 x 4.5mm bearer bar, minimum of 25 bearer bars per metre for grating details refer to drawing Dwg 3089.00.00.DET.13.D003				
		Feed Pump Station				
A13.17		1 1 060 x 1 030 mm (span 1 000 mm)	no	1	3 897.04	3 897.04
		UF Building and Compressor Room				
A13.18		2 460 mm x 32 500 mm (span 400 mm)	no	1	52 828.82	52 828.82
		UV and CIP pump installation				
A13.19		3 560 x 560 mm (span 500 mm)	no	1	2 586.74	2 586.74
		UF Reuse pump station and substation				
A13.20		4 660 x 660 mm (span 600 mm)	no	2	3 355.24	6 710.48
					Carried Forward	669 108.82

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					Brought Forward	669 108.82
	8.3.4.2	Hot dip galvanized 40 x 40 x 5 mm angle iron frame cast into concrete floor with fish tail anchor. Complete as shown on detail drawing.				
A13.21		i) Feed pumpstation	m	4	291.79	1 167.16
A13.22		ii) UF building and compressor room	m	65	291.79	18 966.35
A13.23		iii) UV and CIP pumpstation	m	2	291.79	583.58
A13.24		iv) UF reuse pumpstation and substation	m	5	291.79	1 458.95
	8.3.5	MISCELLANEOUS				
	8.3.5.1	Hot dip galvanized vermin proof air vent complete with perforated mesh				
A13.25		1 Chambers	no	18	3 087.80	55 580.40
	8.3.5.2	Hot dip galvanized lifting hooks cast into prefabricated Complete as shown on drawing				
A13.26			no	32	134 588.50	4 306 832.00
	8.3.5.3	Cast iron cover and frame in accordance to SANS 558. Fig 5				
A13.27		i) Chambers	no	6	1 339.99	8 039.94
		BILL NO. A13 **STRUCTURAL STEELWORK**				
		Carried forward to Summary of Bills			**Total**	5 061 737.20

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Re-use pipeline and chambers

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A7 - Re-use pipeline and chambers				
		BILL NO. A14 **RE-USE PIPELINE AND CHAMBERS** **Chamber SQJ, SQK, SQL, SQM and SQN**				
	SANS 1200 C	**CLEAR SITE**				
		CLEAR SITE				
A14.1	8.2.1	Clear and grub	m²	6000	2.94	17 640.00
	SANS 1200 DB	**REMOVE TREES**				
	8.2.2	Remove and grub large trees and tree stumps, including filling in of holes, levelling of site and compaction, with trees of the following girth, and dispose of material off site at a spoil site established by the Contractor				
A14.2		.1 Exceeding 1m and up to and including 2m girth	no	30	541.46	16 243.80
A14.3		.2 Exceeding 2m and up to and including 3m girth	no	20	789.27	15 785.40
A14.4		.3 Exceeding 3m and up to and including 4m girth	no	5	789.27	3 946.35
	SANS 1200 DB	**TOPSOIL**				
		TOPSOIL				
	8.2.10	Remove topsoil to a depth of 150 mm and				
A14.5		.1 Temporarily stockpile on site	m³	1100	59.55	65 505.00
	SANS 1200 D	**FINISHING**				
	8.3.10	Topsoiling with material from stockpile				
		(a) Spread over site	m³	1100	62.65	68 915.00
		Grassing or other vegetation cover				
	8.3.11	Hydroseeding				
A14.7		.1 Hydroseeding	m²	12000	2.15	25 800.00
	8.3.12	Straw Stabilisation				
A14.8		.1 Straw Stabilisation	m²	12000	1.61	19 320.00
	SANS 1200 D	**EARTHWORKS**				
		Shoring: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service, Refer to the Project Specification in this regard.				
					Carried Forward	233 155.55

					Brought Forward	233 155.55
		Dewatering: Dewatering of earthworks will not be measured seperately and shall be included in SANS 1200A reference 8.3.2.2.(h) in the Preliminary and General bill				
		BULK EXCAVATION				
	8.3.2	Excavate in all materials and use as fill				
A14.9		.1 Bulk excavation (box cut) to create a working platform for	m^3	3000	187.82	563 460.00
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	PSD	**RESTRICTED EXCAVATIONS** Note: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard				
	8.3.3	Excavate for restricted foundations, footings and pipe trenches in all materials and use for backfill or embankment or dispose				
A14.10		.1 New water pipeline, excavate and backfill	m^3	100	187.82	18 782.00
A14.11		.2 New water pipeline, excavate and dispose of material	m^3	100	90.45	9 045.00
A14.12		.3 New valve chambers, excavate and backfill	m^3	50	187.82	9 391.00
A14.13		.4 New valve chambers, excavate and dispose	m^3	450	90.45	40 702.50
	8.3.5	Extra excavation in all materials to provide working space around structure :				
A14.14		.1 New valve chambers maximum 3 m deep	m^2	100	90.45	9 045.00
		Extra over items 8.3.2, 8.3.3 and 8.3.5 for:				
A14.15		.1 Hard rock excavation	m^3	40	803.79	32 151.60
A14.16	8.3.8.1	c) Excavation by hand in soft material to expose existing services	m^3	100	503.55	50 355.00
	8.3.4	Extra-over for importation of materials from commercial sources or from borrow pits				
A14.17		.1 19mm stone for foundation matress for valve structures or for use in waterlogged areas as ordered	m^3	110	276.54	30 419.40
A14.18		.2 A4 needle-punched nonwoven polyester geotextile with 500mm minimum overlap	m^2	470	19.89	9 348.30
	8.3.9	Extra-over for backfill or for fill against structures				
					Carried Forward	1 005 855.35

					Brought Forward	1 005 855.35
		a) With approved 19mm stone material in layers of 150mm thick				
A14.19		.1 Foundation mattress for concrete structures	m^3	110	276.54	30 419.40
A14.20		b) Backfill against new valve chambers	m^3	50	276.54	13 827.00
	SANS 1200 D	**LATERAL SUPPORT/SHORING**				
		LATERAL SUPPORT/SHORING				
		Note: Shoring of excavations will only be measured if this is specifically required by the Engineer for protection of an existing structure or service, that could be damaged due to the excavations. Refer to the Project Specification in this regard				
	8.3.7	For excavations further than 30m from existing buildings/structures using high impact and/or high frequency vibrating driver/equipment :				
A14.21		.1 Shoring for excavation depth up to 3.0m	m	50	-	included
A14.22		.2 Shoring for excavation depth of 3.0m to 4.0m	m	50	-	included
	8.3.8	For excavations closer than 30m from existing buildings/structures using silent and vibration free shoring technologies :				
A14.23		.1 Shoring for excavation depth up to 3.0m	m	50	-	included
A14.24		.2 Shoring for excavation depth of 3.0m to 4.0m	m	50	-	included
	SANS 1200 DB PSDB	**EARTHWORKS (PIPE TRENCHES)**				
		Shoring: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service, Refer to the Project Specification in this regard.				
		Dewatering: Dewatering of earthworks will not be measured seperately and shall be included in SANS 1200A reference 8.3.2.2.(h) in the Preliminary and General bill				
		TRENCHING				
	8.3.2	Excavate in all materials, backfill and compact to 90% mod AASHTO density, and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches				
		(a) .1 Up to 0.8m wide				
					Carried Forward	1 050 101.75

					Brought Forward	1 050 101.75
A14.25		.1 Over 1m and up to 2m deep	m	30	614.31	18 429.30
A14.26		.2 Over 2m and up to 3m deep	m	30	858.34	25 750.20
		(a) .2 Over 0.8m and up to 1.0m wide				
A14.27		.1 Over 1m and up to 2m deep	m	120	500.80	60 096.00
A14.28		.2 Over 2m and up to 3m deep	m	120	1 335.47	160 256.40
		(a) .3 Over 1.0m and up to 1.2m wide				
A14.29		.1 Over 1m and up to 2m deep	m	25	540.86	13 521.50
A14.30		.2 Over 2m and up to 3m deep	m	35	1 402.24	49 078.40
A14.31		.3 Over 3m and up to 4m deep	m	10	2 196.84	21 968.40
		(a) .4 Over 2m wide				
A14.32		.1 Over 2m and up to 3m deep	m	600	1 502.40	901 440.00
A14.33		.2 Over 3m and up to 4m deep	m	1230	2 454.69	3 019 268.70
		(b) Extra over reference 8.3.2 for				
A14.34		.2 Hard rock excavation	m^3	120	803.79	96 454.80
A14.35	8.8.4	(c) Excavation by hand in soft material to expose existing services	m^3	150	503.55	75 532.50
A14.36	8.3.2	Excavate unsuitable material from trench bottom, and dispose off site at a site established by the Contractor, and re-fill with suitable imported material compacted to 90% mod AASHTO density	m^3	650	187.82	122 083.00
	SANS 1200 DB	**DEFICIENCY MATERIAL**				
		Excavation ancillaries				
	8.3.3	.1 Make up deficiency in backfill material, including disposing of unsuitable material off site at a site established by the Contractor				
		Note: Payment of commercial deficiency in backfill				
A14.37		(c) By importation of G7 material from commercial sources selected by the Contractor	m^3	260	248.89	64 711.40
		ADDITIONAL COMPACTION				
	8.3.3	.3 Additional compaction in road reserves				
A14.38		.1 Additional compaction (90% compaction included elsewhere) to obtain 93% mod AASHTO density	m^3	8000	-	included
					Carried Forward	5 678 692.35

					Brought Forward	5 678 692.35
	SANS 1200 DB	**SHORING**				
	PSDB	**SHORING**				
		Note: Shoring of trench excavations will only be measured if specifically required by the Engineer for protection of an existing structure or service, that could be damaged due to the trench excavations. Refer to the Project Specification in this regard.				
	8.3.4	Shore trench opposite structure or service in areas where the sides are unstable and widening of the trench is not possible, impractical or uneconomical				
		.1 For excavations further than 30m from existing buildings/structures using high impact and/or high frequency vibrating driver/equipment :				
A14.39		.1 Shoring for trench depth up to 3.0m	m	500	-	included
A14.40		.2 Shoring for trench depth of 3.0m to 4.0m	m	250	-	included
		.2 For excavations closer than 30m from existing buildings/structures using silent and vibration free shoring technologies :				
A14.41		.1 Shoring for trench depth up to 3.0m	m	250	-	included
A14.42		.2 Shoring for trench depth of 3.0m to 4.0m	m	100	-	included
	SANS 1200 DB	**EXISTING SERVICES**				
		EXISTING SERVICES				
		Existing services that intersect or adjoin pipe trench excavations				
	8.3.5	(a) Services that intersect a trench				
		i) Sewers				
A14.43		100 mmØ - 400 mmØ	no	2	503.55	1 007.10
A14.44		400 mmØ - 800 mmØ	no	3	503.55	1 510.65
A14.45		800 mmØ - 1400 mmØ	no	1	503.55	503.55
		ii) Stormwater culverts				
A14.46		300 mmØ - 500 mmØ	no	1	503.55	503.55
A14.47		500 mmØ - 900 mmØ	no	1	503.55	503.55
A14.48		900 mmØ - 1800 mmØ	no	1	503.55	503.55
A14.49		1800mm x 1400mm Box culvert	no	1	503.55	503.55
					Carried Forward	5 683 727.85

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					Brought Forward	5 683 727.85
		iii) Water mains				
A14.50		100 mmØ - 300 mmØ	no	2	503.55	1 007.10
A14.51		300 mmØ - 500 mmØ	no	1	503.55	503.55
		iv) Electrical				
A14.52		1 x 11 kV cable	no	3	503.55	1 510.65
A14.53		2 x 11kV cables	no	2	503.55	1 007.10
A14.54		3 x 11kV cables	no	1	503.55	503.55
		v) Telecommunications				
A14.55		Overhead lines	no	1	503.55	503.55
A14.56		Single sleeve or cable	no	2	503.55	1 007.10
A14.57		Group of sleeves or cables	no	2	503.55	1 007.10
A14.58		vi) Fences	no	3	503.55	1 510.65
	8.3.5	(b) Services that adjoin a trench				
		i) Sewer				
A14.59		100 mmØ - 400 mmØ	m	50	125.89	6 294.50
A14.60		400 mmØ - 800 mmØ	m	600	125.89	75 534.00
A14.61		800 mmØ - 1400 mmØ	m	50	125.89	6 294.50
		ii) Stormwater				
A14.62		300 mmØ - 500 mmØ	m	20	125.89	2 517.80
A14.63		500 mmØ - 900 mmØ	m	20	125.89	2 517.80
		iii) Water mains				
A14.64		100 mmØ - 300 mmØ	m	200	125.89	25 178.00
A14.65		300 mmØ - 500 mmØ	m	20	125.89	2 517.80
		iv) Electrical				
A14.66		1 x 11 kV cable	m	400	125.89	50 356.00
A14.67		Multiple 11 kV cables	m	300	125.89	37 767.00
		v) Telecommunications				
A14.68		Overhead lines	m	600	125.89	75 534.00
A14.69		vi) Fences	m	800	31.47	25 176.00
					Carried Forward	6 001 975.60

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					Brought Forward	6 001 975.60
A14.70		vii) Street lighting lamppost	no	10	-	included
	SANS 1200 LB	**BEDDING**				
	PSLB	**FROM EXCAVATIONS**				
	8.2.1	Provision of bedding material from trench excavations, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
A14.71		(a) Selected granular material	m^3	1200	97.37	116 844.00
A14.72		(b) Selected fill material	m^3	350	97.37	34 079.50
	SANS 1200 LB	**FROM COMMERCIAL SOURCES**				
	8.2.2	.3 Provision of bedding material by importation from commercial sources selected by the Contractor				
A14.73		(a) Selected granular material	m^3	3600	248.89	896 004.00
A14.74		(b) Selected fill material	m^3	700	248.89	174 223.00
A14.75	8.2.2.3	19mm stone bedding	m^3	450	276.54	124 443.00
A14.76		Supply, handle and install A4 needle-punched nonwoven polyester geotextile with 500mm minimum overlap for stone bedding	m^2	3100	19.89	61 659.00
	SANS 1200 L	**MEDIUM PRESSURE PIPELINE**				
	PSL	Supply, lay and bed pipes complete				
	8.2.1	.1 uPVC Pipelines, PN 16				
A14.77		i) 160 mm dia	m	30	476.31	14 289.30
A14.78		ii) 200mm dia	m	30	668.73	20 061.90
A14.79		iii) 250mm dia	m	30	970.81	29 124.30
A14.80		iv) 315mm dia	m	30	1 464.23	43 926.90
A14.81		v) 355mm dia	m	30	1 832.96	54 988.80
	8.2.1	.2 uPVC-O Pipelines, Class 500, PN 16				
A14.82		i) 160 mm dia	m	30	302.72	**Rate only**
A14.83		ii) 200mm dia	m	30	474.72	**Rate only**
A14.84		iii) 250mm dia	m	30	720.90	**Rate only**
A14.85		iv) 315mm dia	m	30	1 119.72	**Rate only**
A14.86		v) 355mm dia	m	30	1 508.31	**Rate only**
					Carried Forward	7 571 619.30

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					Brought Forward	7 571 619.30
A14.87		vi) 500mm dia	m	60	2 878.93	**Rate only**
A14.88		vii) 1000mm dia	m	1830	12 968.65	**Rate only**
	8.2.1	.3 uPVC-O Pipelines, Class 500, PN 20				
A14.89		i) 500 mm dia	m	60	3 433.40	**Rate only**
A14.90		ii) 1000mm dia	m	1830	14 457.52	**Rate only**
	8.2.1	.4 HDPE, PE100 SDR13.6 PN 12.5				
A14.91		i) 560 mm dia	m	60	4 046.15	**Rate only**
A14.92		ii) 1000mm dia	m	1830	14 460.89	**Rate only**
A14.93		iii) 1400mm dia	m	1830	24 890.40	**Rate only**
	8.2.1	.5 HDPE, PE100 SDR11 PN 16				
A14.94		i) 560 mm dia	m	60	9 035.22	542 113.20
A14.95		ii) 1000mm dia	m	1830	15 794.49	28 903 916.70
		Extra over items under 8.2.1 for the supply, laying and bedding of fittings and specials complete with couplings including cutting pipes to length where required, test and disinfect				
	8.2.2	1 Ductile Iron (Spheroidal Graphite Iron) 16bar fittings and specials to suit PVC pipes				
		a) Socketed 90° bend				
A14.96		i) 160 mm dia x 90°	no	1	603.08	603.08
A14.97		ii) 200 mm dia x 90°	no	1	18 782.40	18 782.40
A14.98		iii) 250 mm dia x 90°	no	1	1 988.75	1 988.75
A14.99		iv) 315 mm dia x 90°	no	1	5 057.88	5 057.88
A14.100		v) 355 mm dia x 90°	no	1	10 454.38	10 454.38
		b) Socketed 45° bend				
A14.101		i) 160 mm dia x 45°	no	1	603.08	603.08
A14.102		ii) 200 mm dia x 45°	no	1	1 281.40	1 281.40
A14.103		iii) 250 mm dia x 45°	no	1	1 988.75	1 988.75
A14.104		v) 355 mm dia x 45°	no	1	10 454.38	10 454.38
		c) Socketed 22.5° bend				
A14.105		i) 160 mm dia x 22.5°	no	1	538.58	538.58
A14.106		ii) 200 mm dia x 22.5°	no	1	963.20	963.20
					Carried Forward	37 070 365.08

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					Brought Forward	37 070 365.08
A14.107		iii) 250 mm dia x 22.5°	no	1	1 730.75	1 730.75
A14.108		iv) 315 mm dia x 22.5°	no	1	3 891.50	3 891.50
A14.109		v) 355 mm dia x 22.5°	no	1	8 782.75	8 782.75
		d) Socketed 11.25° bend				
A14.110		i) 160 mm dia x 11.25°	no	1	431.08	431.08
A14.111		ii) 200 mm dia x 11.25°	no	1	963.20	963.20
A14.112		iii) 250 mm dia x 11.25°	no	1	1 730.75	1 730.75
A14.113		iv) 315 mm dia x 11.25°	no	1	3 891.50	3 891.50
A14.114		v) 355 mm dia x 11.25°	no	1	8 782.75	8 782.75
		e) Socketed equal tee				
A14.115		i) 160 mm dia	no	1	1 225.50	1 225.50
A14.116		ii) 200 mm dia	no	1	1 897.38	1 897.38
A14.117		iii) 250 mm dia	no	1	2 950.88	2 950.88
A14.118		iv) 315 mm dia	no	1	4 762.25	4 762.25
A14.119		v) 355 mm dia	no	1	5 912.50	5 912.50
		f) Socketed flange adaptor				
A14.120		i) 160 mm dia	no	1	1 236.25	1 236.25
A14.121		ii) 200 mm dia	no	1	1 935.00	1 935.00
A14.122		iii) 250 mm dia	no	1	2 978.82	2 978.82
A14.123		iv) 315 mm dia	no	1	4 149.50	4 149.50
A14.124		v) 355 mm dia	no	1	3 837.75	3 837.75
		g) Socketed repair coupling				
A14.125		i) 160 mm dia	no	1	354.75	354.75
A14.126		ii) 200 mm dia	no	1	542.88	542.88
A14.127		iii) 250 mm dia	no	1	861.08	861.08
A14.128		iv) 315 mm dia	no	1	1 784.50	1 784.50
A14.129		v) 355 mm dia	no	1	2 085.50	2 085.50
	8.2.2	.2 uPVC 16bar fittings and specials to suit uPVC pipes				
A14.130		i) 160mmø uPVC / 150mmø AC uPVC adaptor	no	2	284.88	569.76
					Carried Forward	37 137 653.66

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					Brought Forward	37 137 653.66
A14.131		ii) 200mmø uPVC / 200mmø AC uPVC adaptor	no	2	451.50	903.00
A14.132		iii) 250mmø uPVC / 250mmø AC uPVC adaptor	no	2	976.10	1 952.20
A14.133		iv) 315mmø uPVC / 300mmø AC uPVC adaptor	no	2	1 397.50	2 795.00
	8.2.2	.3 Ductile Iron (Spheroidal Graphite Iron) 16bar fittings and specials to suit AC pipes				
		a) Short collar repaor coupling to suit AC pipe				
A14.134		i) 150 mm dia	no	1	677.25	677.25
A14.135		ii) 200 mm dia	no	1	943.85	943.85
A14.136		iii) 250 mm dia	no	1	1 253.45	1 253.45
A14.137		iv) 300 mm dia	no	1	2 085.50	2 085.50
		b) Long collar repair coupling to suit AC pipe				
A14.138		i) 150 mm dia	no	2	817.00	1 634.00
A14.139		ii) 200 mm dia	no	2	1 870.50	3 741.00
A14.140		iii) 250 mm dia	no	2	2 311.25	4 622.50
A14.141		iv) 300 mm dia	no	2	4 085.00	8 170.00
	8.2.2	.4 HDPE flange adaptor (stub end) complete and fitted with a stainless steel grade 316 backing flange to suit HDPE pipes				
A14.142		i) 560 mm dia. for a HDPE PE100 SDR13.6 PN12.5 pipe	no	2	96 067.38	**Rate only**
A14.143		ii) 560 mm dia. for a HDPE PE100 SDR11 PN16 pipe	no	2	98 217.38	196 434.76
A14.144		iii) 1000 mm dia. for a HDPE PE100 SDR13.6 PN12.5 pipe	no	54	165 942.38	**Rate only**
A14.145		iv) 1000 mm dia. for a HDPE PE100 SDR11 PN16 pipe	no	54	181 300.90	9 790 248.60
	8.2.2	.5 Stainless steel grade 316 fittings and specials to suit PVC and HDPE pipes				
		a) Flange adaptor				
A14.146		i) 150mm diameter 16bar long barrel VJ flange adaptor to suit 160mm dia PVC pipe	no	2	3 052.57	6 105.14
A14.147		ii) 200mm diameter 16bar long barrel VJ flange adaptor to suit 200mm dia PVC pipe	no	2	4 644.64	9 289.28
A14.148		iii) 250mm diameter 16bar long barrel VJ flange adaptor to suit 250mm dia PVC pipe	no	2	6 588.68	13 177.36
					Carried Forward	47 181 686.55

[redacted]

						Brought Forward	47 181 686.55
A14.149		iv) 300mm diameter 16bar long barrel VJ flange adaptor to suit 315mm dia PVC pipe	no	2	7 207.88	14 415.76
A14.150		v) 350mm diameter 16bar long barrel VJ flange adaptor to suit 355mm dia PVC pipe	no	2	11 698.15	23 396.30
A14.151		vi) 500mm diameter 16bar extra long barrel VJ flange adaptor to suit 500mm dia PVC-O pipe	no	2	23 734.92	**Rate only**
A14.152		vii) 600mm diameter 16bar long barrel VJ flange adaptor to suit 600mm dia GRP pipe	no	2	32 730.52	65 461.04
A14.153		viii) 1000mm diameter 16bar extra long barrel VJ flange adaptor to suit 1000mm dia PVC-O pipe	no	54	66 125.14	**Rate only**
		b) <u>Bends</u>				
A14.154		i) 350mm dia x 11.25° flanged bend	no	1	34 772.96	34 772.96
A14.155		ii) 350mm dia x 22.5° flanged bend	no	1	35 216.20	35 216.20
A14.156		iii) 350mm dia x 45° flanged segmented bend	no	1	37 565.07	37 565.07
A14.157		iv) 350mm dia x 90 flanged segmented bend	no	1	38 570.20	38 570.20
A14.158		v) 450mm dia x 90°° segmented bend, one end flanged with a 450mm diameter flange, other end flanged with a 550mm diameter flange for connection to a 560mm diameter HDPE pipeline	no	1	65 612.74	65 612.74
A14.159		vi) 800mm dia x 11.25° flanged bend, both flanges to be 1000mm diameter flanges for connection to a 1000mm diameter HDPE pipeline	no	2	278 149.27	556 298.54
A14.160		vii) 800mm dia x 22.5° flanged bend, both flanges to be 1000mm diameter flanges for connection to a 1000mm diameter HDPE pipeline	no	4	278 149.27	1 112 597.08
A14.161		viii) 800mm dia x 45° flanged segmented bend, both flanges to be 1000mm diameter flanges for connection to a 1000mm diameter HDPE pipeline	no	6	309 276.97	1 855 661.82
A14.162		ix) 800mm dia x 90° flanged segmented bend, both flanges to be 1000mm diameter flanges for connection to a 1000mm diameter HDPE pipeline	no	2	332 568.99	665 137.98
		c) <u>Tees</u>				
A14.163		i) 300mm x 300mm dia flanged equal tee, reinforced with a 3.5mm thick wrapper 110mm wide either side of the branch	no	1	38 167.07	38 167.07
A14.164		ii) 350mm x 350mm dia flanged equal tee, reinforced with a 3.5mm thick wrapper 120mm wide either side of the branch	no	1	44 790.15	44 790.15
					Carried Forward	51 769 349.46

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					Brought Forward	51 769 349.46
A14.165		iii) 600mm x 150mm dia flanged reducing tee, with the branch reinforced with a 3.5mm thick x 85mm wide collar, in-line ends C/F 475mm, branch C/F 550mm	no	1	127 262.27	127 262.27
A14.166		iv) 600mm x 300mm dia flanged reducing tee, with the branch reinforced with a 4mm thick x 145mm wide collar, in-line ends C/F 700mm, branch C/F 650mm	no	1	147 434.64	147 434.64
A14.167		v) 600mm x 350mm dia flanged reducing tee, with the branch reinforced with a 4mm thick x 160mm wide collar, in-line ends C/F 725mm, branch C/F 700mm	no	1	158 781.27	158 781.27
A14.168		vi) 600mm x 600mm dia flanged equal tee, reinforced with a 25.4mm thick 2-plate crotch plate with a height of 140mm and a width of 265mm, in-line and branch C/F 850mm	no	1	219 069.64	219 069.64
A14.169		vii) 800mm x 350mm dia flanged reducing tee, with the branch reinforced with a 3.5mm thick x 120mm wide collar, both in-line end fitted a 1000mm diameter flange for connection to a 1000mm diameter HDPE pipeline, the branch end to fitted with a standard 350mm diameter flange, in-line C/F 750mm, branch C/F 800mm	no	2	281 841.09	563 682.18
		d) Flanges				
A14.170		i) 350mm diameter blank flange	no	1	6 898.21	6 898.21
A14.171		ii) 600mm diameter blank flange	no	1	20 181.92	20 181.92
	8.2.3	Extra over items under 8.2.1 for the supplying, fixing and bedding of valves				
A14.172		i) 150mm diameter 16bar flanged RSV gate valve, cap top fitted	no	1	9 243.92	9 243.92
A14.173		ii) 200mm diameter 16bar flanged RSV gate valve, cap top fitted	no	1	16 039.00	16 039.00
A14.174		iii) 250mm diameter 16bar flanged RSV gate valve, cap top fitted	no	1	22 312.70	22 312.70
A14.175		iv) 300mm diameter 16bar flanged RSV gate valve, cap top fitted	no	1	30 151.60	30 151.60
A14.176		v) 350mm diameter 16bar flanged RSV gate valve, cap top fitted	no	1	44 586.70	44 586.70
	8.2.4	Extra-over Items 8.2.1, 8.2.2 and 8.2.3 for the supply and wrapping of the flanges below ground using the Stopaq wrapping system (or equivalent to be approved by the Employer's Agent)				
A14.177		i) Stopaq FN 4100 paste	kg	3200	151.10	483 520.00
A14.178		ii) Stopaq wrapping geotextile	m	3200	130.08	416 256.00
					Carried Forward	54 034 769.51

[redacted]

					Brought Forward	54 034 769.51
A14.179		iii) Stopaq CZH wrapping band	m	3200	136.52	436 864.00
A14.180		iv) Stopaq PVC Outerwrap	m	3200	180.60	577 920.00
	8.2.16	Cut into and connect to existing water mains				
A14.181		i) 110 mm dia. uPVC pressure pipeline	no	1	1 406.10	1 406.10
A14.182		ii) 160 mm dia. uPVC pressure pipeline	no	1	1 406.10	1 406.10
A14.183		iii) 200 mm dia. uPVC pressure pipeline	no	1	1 406.10	1 406.10
A14.184		iv) 250 mm dia. uPVC pressure pipeline	no	1	1 406.10	1 406.10
A14.185		v) 315 mm dia. uPVC pressure pipeline	no	1	1 406.10	1 406.10
A14.186		iv) 355 mm dia. uPVC pressure pipeline	no	1	1 406.10	1 406.10
A14.187		v) 450 mm dia. AC pressure pipeline	no	1	2 812.20	2 812.20
A14.188		vi) 600 mm dia. GRP pressure pipeline	no	1	5 624.40	5 624.40
A14.189	8.2.11	Anchor / Thrust Blocks and Pedestals	m^3	630	2 089.80	1 316 574.00
A14.190	8.2.15	Extra-over Items 8.2.2 for the supply and wrapping of the stainless steel grade 316 pipe specials below ground and protruding from the valve chambers with 1.5mm thick Stopaq CZH-P wrapping band followed by a 0.5mm thick Stopaq PE outer wrap (or equivalent to be approved by the Employer's Agent)	m	780	317.12	247 353.60
		CHAMBERS: SQJ, SQK, SQL, SQM, SQN				
	SANS 1200G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1.b	Plane vertical				
A14.191		1 Sides of floor slabs, bases, etc	m^2	65	418.08	27 175.20
A14.192		2 Walls	m^2	450	364.71	164 119.50
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2.a	Plane horizontal				
A14.193		1 Slabs	m^2	100	636.15	63 615.00
		2 Beams	m^2	4	828.30	3 313.20
	8.2.2.b	Plane vertical				
A14.195		3 Walls	m^2	380	364.71	138 589.80
A14.196		4 Pipe support, thrust blocks, etc	m^2	50	418.08	20 904.00
		5 Beams	m^2	8	418.08	3 344.64
					Carried Forward	57 051 415.65

					Brought Forward	57 051 415.65
	8.2.5	Smooth formwork to narrow widths				
A14.198		(a) Edges, risers, etc not exceeding 300 mm wide	m	115	125.43	14 424.45
	8.2.5.1	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25 mm in size				
A14.199		(a) Chamfer size 50 x 50 mm	m	10	150.20	1 502.00
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6.a	Small, circular, up to 0.35m diameter with depth				
A14.200		1 Over 0m and up to 0.5m	no	5	352.49	1 762.45
	8.2.6.b	Small, other shapes, up to 0.1m² in area with depth				
A14.201		1 Over 0m and up to 0,5m	no	26	432.55	11 246.30
	8.2.6.c	Large, circular, over 0.1m² up to 0.5m² in area with depth				
A14.202		1 Over 0m and up to 0,5m	no	9	565.99	5 093.91
	8.2.6.d	Large, circular, over 1.0m² up to 1.5m² in area with depth				
		1 Over 0m and up to 0,5 m	no	11	672.74	7 400.14
	8.2.6.e	Large, circular, over 1,5m² up to 2.0m² in area with depth				
		1 Over 0m amd up to 0,5m	no	1	832.86	832.86
	SANS 1200G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
A14.205		1 Smooth formwork (all sizes and positions)	m²	42	651.99	27 383.58
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
A14.206		1 Grouting around pipes and fittings	m³	3	21 078.60	63 235.80
	SANS 1200G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
A14.207		1 All sizes	ton	3	18 976.98	56 930.94
					Carried Forward	57 241 228.08

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					Brought Forward	57 241 228.08
	8.3.1.b	High tensile steel				
A14.208		1 All sizes	ton	53	18 976.98	1 005 779.94
	SANS 1200G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
A14.209	8.4.3	(a) Blinding layer 50mm thick	m³	16	1 602.17	25 634.72
	8.4.3	Strength concrete 20Mpa/19 mm				
		1 Thrust blocks, pipe supports	m³	15	1 786.53	26 797.95
	8.4.3	Strength concrete 35Mpa/19mm				
A14.211		1 Floor slabs	m³	105	1 712.36	179 797.80
A14.212		2 Roof slabs and beams	m³	34	1 712.36	58 220.24
A14.213		3 Walls	m³	195	1 712.36	333 910.20
		BENCHING				
	8.4.3	Strength concrete 20Mpa/13mm				
A14.214		1 Benching to floors to falls including steel floated surface finish	m³	19	1 613.19	30 650.61
	SANS 1200G	**SURFACE FINISHES**				
		UNFORMED SURFACE FINISHES				
	8.4.4.a	Wood floated finish				
A14.215		1 Slabs, floor slabs, etc	m²	300	13.92	4 176.00
A14.216		2 Top of walls, beams, etc	m²	4	13.92	55.68
	SANS 1200G	**PRECAST CONCRETE**				
		PRECAST CONCRETE				
		Precast concrete units supplied and fixed complete including all concrete, formwork, reinforcing, lifting hooks, bedding material, etc, complete and placed on top of chamber				
	8.6	Strength concrete 35Mpa/19mm				
		a) Table View East Chamber. Ref. Drawing. 3089.00.00.SQJ.14.U001				
A14.217		.1 Cover slab size 4675-1350-200 mm	no	3	1 064.84	3 194.52
		b) De Grendel connection chamber Ref. drawing. 3089.00.00.SQK.14.U001				
					Carried Forward	58 909 445.74

					Brought Forward	58 909 445.74
A14.218		.1 Cover slab size 4090 x 825 x 200 mm	no	1	6 992.39	6 992.39
A14.219		.2 Cover slab size 4090 x 1200 x 200 mm	no	1	9 690.64	9 690.64
A14.220		.3 Cover slab size 4090 x 1105 x 200 mm	no	2	9 008.02	18 016.04
A14.221		.4 Cover slab size 2960 x 825 x 200 mm	no	1	5 062.77	5 062.77
A14.222		.5 Cover slab size 2960 x 1200 x 200 mm	no	2	6 890.27	13 780.54
A14.223		.6 Cover slab size 2960 x 1010 x 200 mm	no	1	5 965.77	5 965.77
		c) MBR Reuse Pump Station connection chamber Ref.drawing.3089.00.00.SQL.14.U001				
A14.224		.1 Cover slab size 3745 x 1200 x 200 mm	no	4	8 244.77	32 979.08
		d) UF Pump Station connection chamber Ref. drawing.3089.00.00.SQM.14.U001				
A14.225		.1 'Cover slab size 4970 x 800 x 200 mm	no	2	7 126.77	14 253.54
A14.226		.2 Cover slab size 4970 x 1200 x 200 mm	no	1	11 238.64	11 238.64
		JOINT SEALER				
	8.5	b) Polyurethane joint sealer				
A14.227		.1 Prime with an approved primer and fill 10 x 12 mm joint with suitable polyurethane sealer	m	115	153.31	17 630.65
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
	8.12	Testing entire structure for water tightness				
A14.228		.1 Table View East Connection chamber	no	1	8 585.04	8 585.04
A14.229		.2 De Grendel Connection Chamber	no	1	8 585.04	8 585.04
A14.230		.3 MBR Pump station Connection Chamber	no	1	8 585.04	8 585.04
A14.231		.4 UF Pump station Connection Chamber	no	1	8 585.04	8 585.04
A14.232		.5 Air Valve Chambers	no	3	8 585.04	25 755.12
		MISCELLANEOUS				
A14.233		Supply, handle and cast Frimeda (or equivalent to be approved by the Employer's Agent) lifting hooks into removable roof slabs	no	120	268.75	32 250.00
A14.234		Supply, handle, and install 600 mmø circular manhole cover and frame for man-entry: Interlock Systems Type AMHC 12-002 (or equivalent to be approved by the Employer's Agent)	no	15	5 912.50	88 687.50
A14.235		Supply, handle, and install 1000 mm ø circular manhole and frame: Interlock Systems Type AMHC15-001 (or equivalent to be approved by the Employer's Agent)	no	7	8 062.50	56 437.50
A14.236		Supply, handle and install 3.5m high hot dip galvanzied steel access ladders inside the concrete valve chambers.	no	17	5 294.68	90 009.56
	SANS 1200 HA	**STRUCTURAL STEELWORK (small works)**				
					Carried Forward	59 372 535.64

					Brought Forward	59 372 535.64
	8.3.1	STRUCTURAL STEEL				
	8.3.1.1	Stainless steel frame and hinged access cover bolted to concrete slab. Complete as shown on drawing 3089.00.00.DET.13.D003				
A14.237		.1 900 x 600 mm opening	no	3	920.76	2 762.28
A14.238		.2 600 x 600 mm opening	no	14	920.76	12 890.64
A14.239	8.3.1.2	Hot dip galvanized chequer plate cover on frame, frame bolted to concrete roof. Refer to drawing 3089.00.00.SQJ.14.U001	no	1	1 264.50	1 264.50
	8.3.3	LADDERS COMPLETE AND INSTALLED				
	8.3.3.1	Hot dip galvanized cat ladder complete as shown on drawing 3089.00.00.DET.13.D001				
A14.240		a) from platform to finished ground level ± 900 mm	no	3	1 264.50	3 793.50
	8.3.3.2	Hot dip galvanized ladder without safety hoop complete as shown on drawing 3089.00.00.DET.13.D001				
A14.241		a) length ± 2 200 mm	no	2	1 264.50	2 529.00
A14.242		b) length ± 2 400 mm	no	10	1 264.50	12 645.00
A14.243		c) length ± 2 700 mm	no	6	1 264.50	7 587.00
	8.3.4	**MISCELLANEOUS**				
	8.3.4.1	Hot dip galvanized vermin proof air vent. Complete as shown on drawing 3089.00.00.DET.13.D003				
A14.244		a) built into concrete slabs	no	27	321.32	8 675.64
		BILL NO. A14 **RE-USE PIPELINE AND CHAMBERS**				
		Carried forward to Summary of Bills			**Total**	59 424 683.20

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A8 - Building work				
		BILL NO. A15 **MICRO SCREEN INSTALLATION - WPC**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		SUPERSTRUCTURE				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
A15.1		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	340	508.01	172 723.40
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
A15.2		.2 150mm Wide brickforce	m	315	2.19	689.85
A15.3		.3 Rod reinforcing (all sizes)	kg	21	23.75	498.75
		WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
A15.4		.1 2 mm x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	504	27.62	13 920.48
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
A15.5		.1 Vertically	m	21	63.68	1 337.28
A15.6		2 Horizontally	m	53	23.53	1 247.09
	PU	**GLASS BLOCKS**				
		GLASS BLOCKS				
	8.20	Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
A15.7		.1 190 x 190 x 190mm Glass blocks in panels	m²	34	2 365.00	80 410.00
	PU	**DAMPPROOFING**				
					Carried Forward	270 826.85

					Brought Forward	270 826.85
		DAMPPROOFING				
	8.4.3	Polyethelene sheeting				
A15.8		.1 375 Micron under walls including cement mortar triangular filled in cavity walls	m²	53	32.28	1 710.84
A15.9		.2 250 Micron USB green under floors	m²	58	12.73	738.34
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	12mm Thick jointex placed vertically between concrete surfaces				
A15.10		.4 Narrow widths not exceeding 300mm wide in brick walls	m	105	27.99	2 938.95
		JOINT SEALER				
	8.6	Polyurethane joint sealer				
A15.11		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	105	50.52	5 304.60
	SANS 1200 GB	**MOVEMENT JOINT**				
	8.2.8	Two layers Malthoid between horizontal brickwork and concrete faces				
A15.12		.1 Top of brickwork below concrete	m²	21	622.29	13 068.09
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
A15.13		.1 Walls internally	m²	340	105.35	35 819.00
A15.14		.2 Walls externally	m²	340	110.72	37 644.80
	PU	**PAINTING**				
		PAINTING				
		Note:				
		All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions				
		All paint ot be of an approved colour as specified by the Architect				
					Carried Forward	368 051.47

					Brought Forward	368 051.47
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
A15.15		.1 Plastered walls	m²	340	66.65	22 661.00
A15.16		.2 Plastered or concrete ceilings	m²	280	64.50	18 060.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code: D44) paint to external				
A15.17		.2 Plastered walls	m²	340	66.65	22 661.00
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
A15.18		.1 Recessed joint	m	150	23.65	3 547.50
		BILL NO. A15 **MICRO SCREEN INSTALLATION - WPC**				
		Carried forward to Summary of Bills			**Total**	434 980.97

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A8 - Building works				
		BILL NO. A16 **UF FEED PUMPSTATION - WPC**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		SUPERSTRUCTURE				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
A16.1		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	340	508.01	172 723.40
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
A16.2		.2 150mm Wide brickforce	m	315	2.19	689.85
A16.3		.3 Rod reinforcing (all sizes)	kg	21	23.75	498.75
		WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
A16.4		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	588	27.62	16 240.56
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
A16.5		.1 Vertically	m	132	63.68	8 405.76
A16.6		2 Horizontally	m	105	23.53	2 470.65
	PU	**GLASS BLOCKS**				
		GLASS BLOCKS				
	8.20	Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
A16.7		.1 190 x 190 x 190mm Glass blocks in panels	m²	27	2 365.00	63 855.00
					Carried Forward	264 883.97

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					Brought Forward	264 883.97
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Polyethelene sheeting				
A16.8		.1 375 Micron under walls including cement mortar triangular filler in cavity walls	m²	53	32.28	1 710.84
A16.9		.2 250 Micron USB green under floors	m²	21	12.73	267.33
	SANS 1200 GB	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.2.8	12mm Thick jointex placed vertically between concrete surfaces				
A16.10		.4 Narrow widths not exceeding 300mm wide in brick walls	m	21	28.85	605.85
		JOINT SEALER				
	8.2.9	Polyurethane joint sealer				
A16.11		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	21	50.52	1 060.92
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete				
		Dwg EAM-EE-GS-045				
		3CR12 steel				
A16.12		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete	no	1	45 077.68	45 077.68
	PU	**LOUVRES**				
		LOUVRES				
		Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
A16.13		.1 Louvre size approximately 1 to 2m2 in area	no	6	441.48	2 648.88
	PU	**ROLLER SHUTTER DOORS**				
		ALUMINIUM ROLLER SHUTTER DOORS				
					Carried Forward	316 255.47

[redacted]

					Brought Forward	316 255.47
	8.20	Powder coated aluminium roller shutter door (colour RAL 7016 Graphite Grey) installed to manufacturers specifications complete with locking mechanism, etc Dwg 3089.92.00.WPC.16.U001				
A16.14		.1 Size 3500 x 3750mm high with crank handle operation complete	no	1	54 404.69	54 404.69
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
A16.15		.1 Walls internally	m²	340	105.35	35 819.00
A16.16		.2 Walls externally	m²	340	110.72	37 644.80
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
A16.17		.1 Steel doors and frames	m²	20	107.50	2 150.00
A16.18		.2 General surfaces of structural steelwork	m²	5	198.88	994.40
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
A16.19		.1 Plastered walls	m²	340	66.65	22 661.00
A16.20		.2 Plastered or concrete ceilings	m²	250	64.50	16 125.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
A16.21		.2 Plastered walls	m²	340	68.80	23 392.00
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
A16.22		.1 Recessed joint	m	300	23.65	7 095.00
		BILL NO. A16 **UF FEED PUMPSTATION - WPC**				
		Carried forward to Summary of Bills			**Total**	516 541.36

[redacted]

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A8 - Building works				
		BILL NO. A17 **UF BUILDING AND COMPRESSOR ROOM - WOB**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
A17.1		.3 230mm Thick wall	m²	53	508.77	26 964.81
A17.2		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 20Mpa concrete complete	m²	200	613.01	122 602.00
		SUPERSTRUCTURE				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
A17.3		.1 115mm Thick wall	m²	70	250.95	17 566.50
A17.4		.2 115mm Thick wall in beamfilling	m²	5	263.32	1 316.60
A17.5		.3 230mm Thick wall	m²	114	508.77	57 999.78
A17.6		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	1056	508.01	536 458.56
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1c	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
A17.7		.1 Stretcher course bond	m²	200	586.44	117 288.00
A17.8		.2 Ditto in foundations	m²	130	590.11	76 714.30
A17.9		.5 Brick on edge coping to 230mm walls	m²	5	629.75	3 148.75
	8.4.1d	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
A17.10		.20 Stretcher course bond	m²	137	630.06	86 318.22
					Carried Forward	1 046 377.52

					Brought Forward	1 046 377.52
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
A17.11		.2 150mm Wide brickforce	m	1601	2.19	3 506.19
A17.12		.3 Rod reinforcing (all sizes)	kg	21	23.75	498.75
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
A17.13		.1 75 x 110mm Lintol	m	58	70.12	4 066.96
		WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
A17.14		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	1688	27.62	46 622.56
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
A17.15		.1 Vertically	m	433	63.68	27 573.44
A17.16		2 Horizontally	m	170	23.53	4 000.10
		GLASS BLOCKS				
		GLASS BLOCKS				
		Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
A17.17		.1 190 x 190 x 190mm Glass blocks in panels	m²	39	2 365.00	92 235.00
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
A17.18		.1 375 Micron under walls including cement mortar triangular filler in cavity walls	m²	80	32.28	2 582.40
	8.4.4	Polyethelene sheeting				
A17.19		.1 250 Micron USB green under floors	m²	751	12.73	9 560.23
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
					Carried Forward	1 237 023.15

[redacted]

					Brought Forward	1 237 023.15
	8.5	12mm Thick jointex placed vertically between concrete surfaces				
A17.20		.4 Narrow widths not exceeding 300mm wide	m	210	27.99	5 877.90
	8.6	**JOINT SEALER**				-
		Polyurethane joint sealer				
A17.21		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	420	50.52	21 218.40
	SANS 1200 GB	**MOVEMENT JOINT**				
	8.2.8	Two layers Malthoid between horizontal brickwork and concrete faces				
A17.22		.1 Top of brickwork below concrete	m²	11	622.29	6 845.19
		FLASHINGS				
A17.23		1mm Galvanised mild steel flashing 300mm girth 3 times bent along length and fixed to concrete and brickwork over expansion joint complete	m	12	224.09	2 689.08
		TIMBER ROOFS				
		TIMBER ROOFS - LUMP SUM				
		SANS graded CCA treated SA Pine				
		Pre-fabricated roof construction erected complete, including all trusses, braces, purlins, battens, wall plates, etc				
		Dwg 3089.92.00.WOB.16.U001 & U002 & D001				
A17.24		.1 Timber roof construction over office and control room on first floor complete with fascias,etc (area approximately 50m2)	sum	-	22 843.75	22 843.75
	SANS 1200 HB	**CLADDING AND SHEETING**				
	PSHB	Supply, deliver to site and fix cladding and sheeting including all necessary approved fasteners, closures, seals, etc and cutting and notching complete (colour Pebble Grey)				
		Dwg 3089.92.00.WOB.16.U001 & U002 & D001				
		ROOF SHEETING				
	8.2.2	0,58mm Klip-Lok 700 Chromadek Z200 galvanised and colour coated both sides roof sheeting fixed to				
A17.25		.1 Timber purlins	m²	54	335.60	18 122.40
	8.2.3	**ANCILLARIES**				
		Supply, deliver to site and fix all ancillaries including all necessary approved fasteners, closures, seals, etc and cutting and notching complete				
					Carried Forward	1 314 619.87

					Brought Forward	1 314 619.87
		Ridging				
A17.26		.1 0,6mm Ridge capping 450mm girth 3 times bent along length	m	10	310.52	3 105.20
		Flashings				
A17.27		.2 0,6mm Stepped sidewall flashing 350mm girth 2 times bent along length	m	10	220.96	2 209.60
		Fibre cement				-
		.3 Fascia and bardge boards				
A17.28		.1 10 x 200mm High fascia board fixed complete	m	20	143.32	2 866.40
	PU	**INSULATION**				
		INSULATION				
	8.10	Supply, deliver to site and fix Sisalation 420 roof insulation, including all galvanised wire supportwork, cutting and notching complete to				
A17.29		.7 Underside of roof sheeting	m²	54	51.35	2 772.90
	PU	**RAINWATER**				
		GUTTERS				
	8.16	Gutters supplied and fixed complete, including all mitres, stopped ends, outlets, etc				
		2mm Powder coated aluminium (Pebble Grey)				
A17.30		.1 Size 150 x 150mm Eaves gutter	m	20	1 886.62	37 732.40
		DOWNPIPES				
	8.17	Rainwater pipes supplied and fixed complete, including offsets, shoes, etc				
		1.2mm Powder coated aluminium (Pebble Grey)				
A17.31		.2 Size 150 x 150mm	m	10	188.12	1 881.20
	PU	**SUSPENDED CEILINGS**				
		SUSPENDED CEILINGS				
		Dwg 3089.00.00.WOB.16.D001				
	8.10	Vinyl coated plasterboard ceilings supplied and erected complete				
					Carried Forward	1 365 187.57

[redacted]

					Brought Forward	1 365 187.57
A17.32		.1 9mm Vinyl coated plasterboard suspended ceiling of 600 x 1200mm ceiling panels laid loose in Donn type suspension system consisting of 38 x 38mm aluminium T-section main and cross tees, suspended with 4mm galvanized wire hangers approximately 600mm below timber trusses, complete with 30x30mm aluminium angle section cornice at junction of ceiling and wall	m²	95	209.18	19 872.10
A17.33		.2 Form hole through ceiling for light fittings	no	10	18.54	185.40
A17.34		.4 50mm Insulation blanket laid over ceilings	m²	95	67.99	6 459.05
	PU	**TIMBER DOORS AND FRAMES**				
	8.8	**TIMBER FRAMES** Wrot Sapele Single rebated 80 x 55mm hardwood door frame for the following size doors, built into brickwork complete with galvanised hoop iron straps fixed to frames and built into brickwork, including polysulphide sealant both sides of frames complete Dwg 3089.92.00.WOB.16.U001				
A17.35		.1 Door size 813 x 2032mm (D01 & 06)	no	2	1 719.98	3 439.96
	8.9	**SEMI SOLID CORE DOORS** Semi solid core doors with masonite veneer suitable for painting Dwg 3089.92.00.WOB.16.U001				
A17.36		.1 Door size 762 x 2032mm (D03 & D04)	no	2	1 566.28	3 132.56
A17.37		.2 Door size 762 x 1882mm (D02 & D05)	no	2	1 566.28	3 132.56
A17.38		.3 Door size 813 x 2032mm (D01 & 06 & 07 & 08)	no	4	1 566.28	6 265.12
	8.20	**IRONMONGERY TO SEMI SOLID DOORS ABOVE, COMPLETE** Dwg 3089.92.00.WOB.16.U001				
A17.39		.1 Door D01 & 06	no	2	5 537.71	11 075.42
A17.40		.2 Door D02 & 05	no	2	817.61	1 635.22
A17.41		.3 Door D03 & 04	no	2	2 944.73	5 889.46
A17.42		.4 Door D07 & 08	no	2	2 944.73	5 889.46
	PU	**SKIRTINGS**				
	8.9	**TIMBER SKIRTINGS** Wrot Sapele				
A17.43		.1 22 x 200mm Skirting nailed to walls	m	53	367.99	19 503.47
					Carried Forward	1 451 667.35

[redacted]

					Brought Forward	1 451 667.35
	8.10	Supawood				
A17.44		.1 18 x 70mm Skirting nailed to walls	m	53	80.20	4 250.60
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete Dwg EAM-EE-GS-048				
		3CR12 steel				
A17.45		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete	no	2	45 077.68	90 155.36
A17.46		.2 Double door and frame with door size 1500 x 2400mm high including all locking devices hinges, etc complete	no	1	61 768.49	61 768.49
	PU	**LOUVRES**				
		LOUVRES				
	8.20	Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
A17.47		.1 Louvre size approximately 1 to 2m2 in area	no	6	441.48	2 648.88
	PU	**ROLLER SHUTTER DOORS**				
		ALUMINIUM ROLLER SHUTTER DOORS				
	8.21	Powder coated aluminium roller shutter door (colour RAL 7016 Graphite Grey) installed to manufacturers specifications complete with locking mechanism, etc Dwg 3089.92.00.WOB.16.U001				
A17.48		.1 Size 3500 x 3750mm high with crank handle operation complete	no	1	54 404.69	54 404.69
	PU	**WINDOWS**				
		ALUMINIUM WINDOWS				
	8.8	Purpose made powder coated aluminium (Colour RAL 7024 Grafhite Grey) glazed windows supplied and installed complete with glazing, ironmongery, etc to manufacturers specification Prices to include for sealing joint between window frame and plaster or brickwork finish with approved Polyurethane sealant all round to external faces Dwg 3089.92.00.WOB.16.U001				
A17.49		.1 Window size 500 x 850mm (W01, 02, 03 & 04)	no	4	860.00	3 440.00
A17.50		.2 Window size 1500 x 1200mm (W05)	no	1	1 612.50	1 612.50
					Carried Forward	1 669 947.87

[redacted]

					Brought Forward	1 669 947.87
A17.51		.3 Window size 3000 x 1200mm (W06 & 07)	no	2	2 365.00	4 730.00
	8.20	**STEEL WINDOW SUPPORT** Hot dip galvanised steel Dwg 3089.92.00.WOB.16.D002				
A17.52		.1 75 x 75 x 3,5mm Wall thickness pipe window support 1200mm high with base plates, bolts, etc complete	no	1	1 091.12	1 091.12
	PU	**DOOR FRAMES**				
	8.8	**ALUMINIUM DOOR FRAMES** Purpose made powder coated aluminium (colour RAL 7016 Antracite Grey) doors frames supplied and installed complete to manufacturers specification Dwg 3089.92.00.WOB.16.U001				
A17.53		.1 Door frame for door size 762 x 2032mm high (D02 & 05)	no	2	1 612.50	3 225.00
A17.54		.2 Door frame for sliding door size 762 x 2032mm high (D03 & 04)	no	2	2 150.00	4 300.00
A17.55		.3 Door frame for door size 813 x 2032mm high (D07 & 08)	no	2	1 612.50	3 225.00
	SANS 1200 H	**STEEL STAIRCASE TO FIRST FLOOR**				
		Dwg 3089.00.00.WOB.13.D001				
	8.3.1	**SHOP DRAWINGS** .1 Preparation of shop detail drawings and submit for approval				
A17.56		.1 Structural steelwork, etc	kg	1365	1.08	1 474.20
		SUPPLY AND FABRICATION				
		BRACKETS, ETC				
	8.3.2	.2 Hot rolled sections				
A17.57		.1 60 x 60 x 6mm Angle section brackets	kg	105	34.40	3 612.00
		Posts, etc				
	8.3.3	.2 Hollow sections				
A17.58		.1 75 x 75 x 4mm Square section posts	kg	105	40.85	4 289.25
		FLOORING				
	8.3.4	.2 Flooring				
A17.59		.1 RS 40 (30 x 4,5mm) floor grating	m²	4	3 225.00	12 900.00
		STAIRS				
					Carried Forward	1 708 794.44

[redacted]

					Brought Forward	1 708 794.44
	8.3.5	.2 Stairs				
A17.60		.1 PC180 x 70 stair stringer	kg	630	34.40	21 672.00
A17.61		.2 4mm Vastrap plate stair tread size 900x250mm	kg	420	34.40	14 448.00
		FASTENERS				
	8.3.6	.2 Fasteners				
A17.62		.1 Class 4.8 bolts with nuts and washers	kg	11	107.50	1 182.50
A17.63		.2 Class 8.8 bolts with nuts and washers	kg	11	107.50	1 182.50
A17.64		.3 12mm Diameter expansion bolt 150mm long fixed complete	no	22	215.00	4 730.00
A17.65		.4 16mm Diameter expansion bolt 150mm long fixed complete	no	22	268.75	5 912.50
		TRANSPORT				
	8.3.2	.1 Normal transport				
A17.66		.1 Structural steelwork	kg	1365	26.88	36 691.20
		ERECTION				
		Off loading of steelwork on site, storage and erection				
	8.3.3	Structural steelwork				
A17.67		.1 Structural steelwork	kg	1365	5.38	7 343.70
	8.3.4	Erection bolts				
A17.68		.1 Class 4.8 bolts with nuts and washers	kg	5	107.50	537.50
A17.69		.2 Class 8.8 bolts with nuts and washers	kg	5	107.50	537.50
	SANS 1200 H	**CORROSION PROTECTION**				
	8.3.13	Extra over reference 8.3.1 to 8.3.9 for corrosion protection				
		AT WORKSHOP				
		.1 .3 Hot dipped galvanising				
A17.70		.1 Structural steel	kg	1365	11.82	16 134.30
	SANS 1200 HC	**CORROSION PROTECTION**				
	8.2.3	CORROSION PROTECTION AT WORKSHOP				
		Hot dipped galvanising				
A17.71		.1 Structural steel	ton	11.0	11 825.00	130 075.00
					Carried Forward	1 949 241.14

[redacted]

					Brought Forward	1 949 241.14
	8.2.4	CORROSION PROTECTION ON SITE AFTER ERECTION Repair damaged primer coat and apply one coat universal undercoat to 25um DFT and one coat gloss enamel finish to 30 micron DFT				
A17.72		.1 General surfaces of structural steel	m²	150	136.52	20 478.00
	PU	**SCREED**				
		SCREED				
	8.6	1:3 Cement screed with steel floated finish				
A17.73		.1 30mm Thick to floors	m²	53	93.52	4 956.56
		GRANOLITHIC SCREED				
	8.7	2:3 Granolithic screed applied to all surfaces including slushing surface for adhesion and finished with steel floated surface finish				
A17.74		.1 30mm Thick to floors	m²	53	150.50	7 976.50
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, recesses, etc				
		.2 Steel float finish to				
A17.75		.1 Walls internally	m²	1456	105.35	153 389.60
A17.76		.2 Walls externally	m²	720	110.72	79 718.40
		TWO COAT PLASTER				
	8.6	Two coat plaster consisting of one coat 1:6 cement plaster , including all narrow widths, angles, V-joints, etc finished with 6mm thick Rhinolite gypsum plaster coat steel floated to				
A17.77		.1 Walls	m²	105	193.50	20 317.50
	PU	**TILING**				
		WALL TILING				
	8.7	Wall tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to plaster (plaster measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
A17.78		.1 Walls with 600 x 300mm porcelain tiles	m²	105	611.90	64 249.50
		FLOOR TILING				
					Carried Forward	2 300 327.20

[redacted]

					Brought Forward	2 300 327.20
	8.8	Floor tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to screed (screed measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
A17.79		.1 Floors with 600 x 600mm porcelain tiles	m²	110	619.01	68 091.10
	8.9	Tiling sundries				
A17.80		.1 150mm Tile skirting fixed to walls	m	50	135.30	6 765.00
	8.10	Mosaic tiling (Allow R300.00/m² for purchasing and delivery of mosaics to site excluding VAT) fixed to screed (screed measured elsewhere) with approved tile adhesive and grouted with waterproof tile grout				
A17.81		.1 Shower floors	m²	2	885.34	1 770.68
	PU	**PAINTING**				
		PAINTING **Note:** All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Architect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
A17.82		.1 Steel doors and frames	m²	12	107.50	1 290.00
A17.83		.2 General surfaces of structural steelwork	m²	10	198.88	1 988.80
A17.84		.3 Timber doors and frames	m²	40	107.50	4 300.00
A17.85		.3 Timber skirtings not exceeding 150mm girth	m	110	37.62	4 138.20
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
A17.86		.1 Plastered walls	m²	1267	66.65	84 445.55
A17.87		.2 Plastered or concrete ceilings	m²	53	64.50	3 418.50
A17.88		.3 Skimmed plasterboard ceilings	m²	95	64.50	6 127.50
	8.20	Prepare and apply one coat Dulux Trade Primer code T1011 and two coats Dulux Pearlglo water based paint code D40 to internal				
A17.89		.2 Plastered walls in ablution areas	m²	190	66.65	12 663.50
	8.21	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
					Carried Forward	2 495 326.03

[redacted]

					Brought Forward	2 495 326.03
A17.90		.2 Plastered walls	m²	720	68.80	49 536.00
A17.91		.3 Plastered or concrete ceilings	m²	20	66.65	1 333.00
	8.22	Extra over external painting to walls for painting plaster recess joint in different colour				
A17.92		.1 Recessed joint	m	114	23.65	2 696.10
		PLUMBING AND DRAINAGE				
		PLUMBING AND DRAINAGE **Note:** Plumbing measured in elements (plumbing points) and shall be priced accordingly. Prices must include for supply and installation of all fittings, taps, supply and discharge piping from the fitting to the perimeter of the building face complete. Supply and discharge piping from the perimeter of the building up to the connection point on the site, will be measured separately, and must be priced accordingly. The external supply and discharge piping must include all items such as, excavation, bedding, backfilling, pipe fittings, manholes, etc complete				
	PU	**PLUMBING**				
		Plumbing points in building Dwg 3089.92.00.WOB.16.U001				
		TOILETS				
	8.17	.1 Toilets				
A17.93		Vaal Downtown or similar approved locally manufactured	no	2	1 457.59	2 915.18
		HANDWASH BASINS				
	8.17	.4 Handwash basins				
A17.94		Vaal Downtown or similar approved vitreous china wall	no	2	1 794.91	3 589.82
		URINAL				
	8.17	.11 Urinal bowl				
					Carried Forward	2 555 396.13

[redacted]

					Brought Forward	2 555 396.13
A17.95		Villeroy & Boch - Subway wall mounted white urinal (no lid) (code 75130001) with flush installation set (code 116.003.00.1) with Sigma urinal flush plate (code 116.011.11.5) with urinal trap (code 152.950.11.10) and urinal division (code 11.202.11.1) installed complete to manufacturers instructions	no	1	12 787.12	12 787.12
		SHOWERS				
	8.20	.12 Shower				
A17.96		Cobra Watertech or similar approved 40mm rough brass shower trap (Code: 373SQ) with shallow seal and chrome plated square grating , Cobra Watertech Chrome shower head (Code: KP2-6) or similar approved 10litre/min maximum flow restrictor, self cleaning spray nozzle, and minimum pressure 50 kPa, and Cobra Watertech Protea Chrome shower mixer (Code: PA-856) or similar approved, installed to suppliers instructions	no	2	3 359.59	6 719.18
		GEYSERS				
	8.20	.13 Geyser				
A17.97		200 Liter geyser	no	1	12 951.49	12 951.49
		FIRE FIGHTING				
	8.20	.14 Fire hose reel				
A17.98		20m Fire hose reel including two fire extinguishers	no	4	6 876.86	27 507.44
	PU	**DRAINAGE**				
	8.15	External supply and discharge piping, etc				
A17.99		.1 20mm Dia HDPE water supply in ground	m	20	8.01	160.20
A17.100		.2 32mm Dia HDPE water supply in ground	m	20	21.72	434.40
A17.101		.3 110mm Dia uPVC sewer pipe in ground	m	20	133.94	2 678.80
A17.102		.4 160mm Dia uPVC sewer pipe in ground	m	20	326.58	6 531.60
A17.103		.7 20mm Yard stand tap	no	2	195.62	391.24
	PU	**BATHROOM FITTINGS**				
	8.20	Bathroom fittings				
A17.104		.1 F16C stainless steel grade 304 cistern grab rail 750 x 220mm and F14C grab rail 300x 300 x 300mm installed complete as per suppliers instructions	no	2	2 272.67	4 545.34
A17.105		.2 Franke Rodan RODX605 0,8mm thick satin finished stainless steel waste bin (code 2120097) size 355 x 168 x 460mm high with capacity of 23 litres and cylinder lock and standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	2	4 336.67	8 673.34
					Carried Forward	2 638 776.28

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					Brought Forward	2 638 776.28
A17.106		.3 Franke HF2400HD 1,2/1,5mm thick stainless steel satin finished automatic hand free hand dryer (code 2500001) size 280 x 207 x 245mm high with two vandal proof lock screws and key wrench, fixed to walls with stainless steel screws and 200W motor connected to power supply as per suppliers instructions	no	2	14 015.58	28 031.16
A17.107		.4 Franke Rodan RODX625 0,8mm thick satin finished stainless steel soap dispenser (code 2120107) size 120 x 107 x 296mm high fixed to wall with stainless steel screws as per suppliers instructions	no	2	3 229.62	6 459.24
A17.108		.5 Franke Rodan RODX600 0,8mm thick satin finished stainless steel paper towel dispenser (code 2120099) size 275 x 112 x 355mm high with capacity of 500-800 towels, inspection window on the side with Franke standard key, fixed to wall with stainless steel screws as per suppliers instructions	no	2	3 074.60	6 149.20
A17.109		.6 Franke Rodan RODX672 0,8mm thick satin finished stainless steel double toilet roll holder (code 2120101) size 144 x 138 x 301mm high for two rolls maiimum, 120mm diameter with cylinder lock with standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	2	3 728.77	7 457.54
	PU	**LOCKERS**				
A17.110	8.23	Cubical Solutions 2Z locker (Code: CSL/CHPL/304/Z) or similar approved overall size 300 x 450 x 1900mm high (1800mm locker and 100mm plinth) comprising 12mm compact high pressure laminate whits carcasses with 12mm Pastel Grey compact high pressure laminate doors including auto return hinges (Code: CSSH/E112) and D shaped keeps (Code: CSLJ/LK/3) for padlock and lock cover plate and handles (Code: CSLJ/LH/9) installed complete per manufacturers instructions	no	6	6 444.62	38 667.72
	PU	**JOINERY**				
A17.111	8.22	**JOINERY** Purpose made joinery fittings supplied and installed complete with ironmongery, etc to manufacturers specification. And sealing all round frames adjoining walls, ceilings, floors, etc with approved sealant Open Shelves Joinery item J5.1 Dwg 3089.92.00.WOB.16.F001 .1 Complete installation as shown on drawings	no	2	8 352.75	16 705.50
	PU	**FURNITURE**				
	8.24	**FURNITURE** Global Top Counter, Urban Lite leg and Pedestal Furniture item 1.1 Dwg 3089.92.00.WOB.16.D001				
					Carried Forward	2 742 246.64

[redacted]

					Brought Forward	2 742 246.64
A17.112		.1 Complete installation as shown on drawings Ascot Office Chair Furniture item 1.2 Dwg 3089.92.00.WOB.16.D001	no	1	5 601.06	5 601.06
A17.113		.1 Complete installation as shown on drawings Ecocentric Filing Cabinets Furniture item 1.3 Dwg 3089.92.00.WOB.16.D001	no	1	1 524.18	1 524.18
A17.114		.1 Complete installation as shown on drawings Global Top Counter, Urban Lite leg and Pedestal Furniture item 2.1 Dwg 3089.92.00.WOB.16.D001	no	1	5 757.82	5 757.82
A17.115		.1 Complete installation as shown on drawings Ascot Office Chair Furniture item 2.2 Dwg 3089.92.00.WOB.16.D001	no	5	5 601.05	28 005.25
A17.116		.1 Complete installation as shown on drawings Ecocentric Filing Cabinets Furniture item 2.3 Dwg 3089.92.00.WOB.16.D001	no	5	1 524.18	7 620.90
A17.117		.1 Complete installation as shown on drawings	no	1	5 757.82	5 757.82
		BILL NO. A17 **UF BUILDING AND COMPRESSOR ROOM - WOB**				
		Carried forward to Summary of Bills			**Total**	2 796 513.67

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
UV and CIP pump sump

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A8 - Building works				
		BILL NO. A18 **UV AND CIP PUMP SUMP - WPD**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
A18.1		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 20Mpa concrete complete	m²	28	613.01	17 164.28
		SUPERSTRUCTURE				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
A18.2		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	160	508.01	81 281.60
	8.4.1c	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
A18.3		.20 Stretcher course bond	m²	53	630.06	33 393.18
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
A18.4		.2 150mm Wide brickforce	m	210	2.19	459.90
A18.5		.3 Rod reinforcing (all sizes)	kg	11	23.75	261.25
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
A18.6		.1 75 x 110mm Lintol	m	4	70.12	280.48
		WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
					Carried Forward	132 840.69

					Brought Forward	132 840.69
A18.7		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	202	27.62	5 579.24
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
A18.8		.1 Vertically	m	50	63.68	3 184.00
A18.9		2 Horizontally	m	27	23.32	629.64
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
A18.10		.1 375 Micron under walls including triangular cement mortar fillet in cavity walls	m²	8	32.28	258.24
	8.4.4	Polyethelene sheeting				
A18.11		.1 250 Micron USB green under floors	m²	232	12.73	2 953.36
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	12mm Thick jointex placed vertically between concrete surfaces				
A18.12		.4 Narrow widths not exceeding 300mm wide	m	11	27.99	307.89
A18.13		.1 Top of brickwork below concrete	m²	8	93.31	746.48
	8.6	**JOINT SEALER**				
		Polyurethane joint sealer				
A18.14		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	11	50.52	555.72
	SANS 1200 G	**JOINTS**				
	8.2.8	Two layers Malthoid between horizontal brickwork and concrete faces				
A18.15		.1 Top of brickwork below concrete	m²	11	622.29	6 845.19
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
					Carried Forward	153 900.45

[redacted]

					Brought Forward	153 900.45
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete Dwg EAM-EE-GS-045 Hot dip galvanized steel				
	PU	**LOUVRES**				
		LOUVRES				
	8.20	Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
A18.16		.1 Louvre size approximately 1 to 2m2 in area	no	4	441.48	1 765.92
	PU	**ROLLER SHUTTER DOORS**				
		ALUMINIUM ROLLER SHUTTER DOORS				
	8.20	Powder coated aluminium roller shutter door (colour RAL 7016 Graphite Grey) installed to manufacturers specifications complete with locking mechanism, etc Dwg 3089.92.00.WOB.16.U001				
A18.17		.1 Size 4000 x 3500mm high with crank handle operation	no	1	59 203.00	59 203.00
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
A18.18		.1 Walls internally	m²	164	105.35	17 277.40
A18.19		.2 Walls externally	m²	164	110.72	18 158.08
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Architect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
A18.20		.1 Steel doors and frames	m²	5	107.50	537.50
					Carried Forward	250 842.35

					Brought Forward	250 842.35
A18.21		.2 General surfaces of structural steelwork	m²	5	198.88	994.40
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
A18.22		.1 Plastered walls	m²	164	66.65	10 930.60
A18.23		.2 Plastered or concrete ceilings	m²	20	64.50	1 290.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
A18.24		.2 Plastered walls	m²	164	68.80	11 283.20
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
A18.25		.1 Recessed joint	m	100	23.65	2 365.00
		BILL NO. A18 **UV AND CIP PUMP SUMP - WPD**				
		Carried forward to Summary of Bills			**Total**	277 705.55

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
UF re-use pump station and Sub station

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A8 - Building works				
		BILL NO. A19 **UF RE-USE PUMP STATION WPD AND ULTRA FILTRATION SUBSTATION - ELE - WPD**				
		BUILDING WORKS				
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
A19.1		.3 230mm Brick wall	m²	126	508.77	64 105.02
A19.2		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 20Mpa concrete complete	m²	133	613.02	81 531.66
		SUPERSTRUCTURE				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
A19.3		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	535	508.01	271 785.35
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperail FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
A19.4		.1 In foundations	m²	71	590.11	41 897.81
	PU	**SUNDRIES**				
		BRICK REINFORCING				
	8.4.6	Brick reinforcing				
A19.5		.2 150mm Wide brickforce	m	415	2.19	908.85
A19.6		.3 Rod reinforcing (all sizes)	kg	11	23.75	261.25
		PRECAST CONCRETE LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
A19.7		.1 75 x 110mm Lintol	m	30	70.12	2 103.60
		HOOP IRON WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
A19.8		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	700	27.62	19 334.00
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
					Carried Forward	481 927

					Brought Forward	481 927.54
A19.9		.1 Vertically	m	146	63.68	9 297.28
A19.10		2 Horizontally	m	130	23.53	3 058.90
		AIR BRICKS				
	8.4.4	Approved air brick				
A19.11		.1 Built into brick walls complete	no	20	14.69	293.80
	PU	**TRENCH COVERS AND FRAMES**				
		Dwg EAM-EE-GS-001 & 007				
	8.20	Hot dip galvanised mild steel 45 x 45 x 3mm angle iron section frame with approved lugs at back, cast into concrete or built into brick walls, complete				
A19.12		.1 Frame	m	150	247.25	37 087.50
	8.21	Hot dip galvanised mild steel tophat section to suit 35mm thick timber trench covers placed between panels as support				
A19.13		.1 Frame	m	60	247.25	14 835.00
	8.22	Wrot Merati purpose made framed and ledged trench covers generally 800mm wide and 35mm thick, placed loose over trenches, including all cutting and waste etc, complete with two coats of Linseed oil for protection				
A19.14		.1 Covers	m²	60	1 290.00	77 400.00
		GLASS BLOCKS				
		GLASS BLOCKS				
		Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
A19.15		.1 190 x 190 x 190mm Glass blocks in panels	m²	9	2 365.00	21 285.00
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
A19.16		.1 375 Micron under walls including cement mortar triangular fillet in cavity walls	m²	40	32.28	1 291.20
	8.4.4	Polyethelene sheeting				
A19.17		.1 250 Micron USB green under floors	m²	616	12.73	7 841.68
					Carried Forward	654 317.90

[redacted]

					Brought Forward	654 317.90
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	12mm Thick jointex placed vertically between concrete surfaces				
A19.18		.4 Narrow widths not exceeding 300mm wide	m	21	27.99	587.79
		JOINT SEALER				
	8.6	Polyurethane joint sealer				
A19.19		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	21	50.52	1 060.92
	SANS 1200 GB	**MOVEMENT JOINT**				
	8.2.8	Two layers Malthoid between horizontal brickwork and concrete faces				
A19.20		.1 Top of brickwork below concrete	m²	18	622.29	11 201.22
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete				
		3CR12 steel				
A19.21		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete Ref.dwg.EAM-EE-GS-D45,sheet 1-3	no	1	45 077.68	45 077.68
A19.22		.2 Double door and frame with door size 1500 x 2400mm high including all locking devices hinges, etc complete Ref.dwg.EAM-EE-GS-D48,sheet 1-3	no	3	61 768.49	185 305.47
	SANS 1200 HA	**SUPPLY, FABRICATE AND ERECT STEELWORK - ALL INCLUSIVE**				
		HIGH SECURITY FENCING				
		Fencing supplied and fixed complete, including all posts, stays, standards, droppers, excavation, backfilling, concrete bases, etc				
	8.3.1	Welded mesh fencing in approx. 3300mm panels 2400mm high of 3mm galvanized wire with aperture size (centres) @ 76.2mm x 12.7mm including horizontal reinforcing. Fixed to and including hot dip galvanized locking posts, clamps, etc. With 400x 400 x 600mm 20Mpa concrete footings. Dwg 3089.00.00.DET.17.D008				
					Carried Forward	897 550.98

					Brought Forward	897 550.98
A19.23		.1 High security fencing (high grade)	m	4	1 983.38	7 933.52
	8.3.1	Gates supplied and fixed complete, including all posts, stays, hinges, locking devices, excavation, backfilling, concrete bases, etc Dwg 3089.00.00.DET.17.D007				
A19.24		.1 Double leaf gate size 2400mm wide and 2400mm high complete	no	2	15 898.18	31 796.36
	PU	**ROLLER SHUTTER DOORS**				
		ALUMINIUM ROLLER SHUTTER DOORS				
	8.20	Powder coated aluminium roller shutter door (colour RAL 7016 Graphite Grey) installed to manufacturers specifications complete with locking mechanism, etc Dwg 3089.92.00.WOB.16.U001				
A19.25		.1 Size 3500 x 3400mm high with crank handle operation complete	no	1	50 014.74	50 014.74
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
A19.26		.1 Walls internally	m²	535	105.35	56 362.25
A19.27		.2 Walls externally	m²	535	110.72	59 235.20
	PU	**PAINTING**				
		PAINTING **Note:** All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
A19.28		.1 Steel doors and frames	m²	20	107.50	2 150.00
A19.29		.2 General surfaces of structural steelwork	m²	20	198.88	3 977.60
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
A19.30		.1 Plastered walls	m²	535	66.65	35 657.75
					Carried Forward	1 144 678.40

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					Brought Forward	1 144 678.40
A19.31		.2 Plastered or concrete ceilings	m²	712	64.50	45 924.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
A19.32		.2 Plastered walls	m²	535	68.80	36 808.00
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
A19.33		.1 Recessed joint	m	200	23.65	4 730.00
		BILL NO. A19 **UF RE-USE PUMP STATION WPD AND ULTRA FILTRATION SUBSTATION - ELE - WPD**				
		Carried forward to Summary of Bills			Total	1 232 140.40

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A8 - Building works				
		BILL NO. A20 **MAIN SUBSTATION - ELA**				
		BUILDING WORKS				
	SANS 1200 D	**EARTHWORKS**				
		RESTRICTED EXCAVATIONS				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
A20.1		.1 Wall footings	m³	16	365.86	5 853.76
A20.2		.2 Cable duct trenches	m³	40	365.86	14 634.40
A20.3		.3 Sumps	m³	4	365.86	1 463.44
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
A20.4		.2 Hard rock excavation	m³	2	803.79	1 607.58
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
A20.5		.1 Alongside walls in foundations	m³	10	248.89	2 488.90
A20.6		.3 Under floors	m³	100	248.89	24 889.00
	SANS 1200 G	**FORMWORK**				
		ROUGH FORMWORK				
	8.2.1	(a) .2 Plane vertical				
A20.7		.1 Sump walls	m²	17	418.08	7 107.36
A20.8		.2 Sides of floor slabs, bases, etc	m²	40	418.08	16 723.20
		SMOOTH FORMWORK				
	8.2.2	(b) .1 Plane horizontal				
A20.9		.1 Slabs	m²	120	636.15	76 338.00
A20.10		.2 Beams	m²	2	721.55	1 443.10
					Carried Forward	152 548.74

					Brought Forward	152 548.74
	8.2.2	(c) .2 Plane vertical				
A20.11		.1 Sump walls	m²	17	418.08	7 107.36
A20.12		.2 Beams	m²	4	418.08	1 672.32
	8.2.5	Normal formwork to narrow widths				
A20.13		(a) Edges, risers, etc not exceeding 300mm wide	m	179	418.08	74 836.32
	8.1.1.2	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
A20.14		(a) Chamfer size 50 x 50mm	m	11	150.20	1 652.20
A20.15		(b) Drip groove 30mm quarter round	m	45	85.77	3 859.65
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
A20.16		.1 Over 0m and up to 0,5m	no	2	352.49	704.98
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
A20.17		.1 Over 0m and up to 0,5m	no	2	432.55	865.10
	8.2.6	(c) Large, circular, over 0,35m and up to 0,7m diameter with depth				
A20.18		.1 Over 0m and up to 0,5m	no	2	565.99	1 131.98
	8.2.6	(d) Large, other shapes, over 0,1m² up to 0,5m² in area with depth				
A20.19		.1 Over 0m and up to 0,5m	no	2	672.74	1 345.48
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
		Steel bars				
	8.3.1	(a) .1 Mild steel				
A20.20		.1 All sizes	ton	2.0	18 976.98	37 953.96
	8.3.1	(a) .2 High tensile steel				
A20.21		.1 All sizes	ton	21.0	18 976.98	398 516.58
		MESH REINFORCEMENT				
	8.3.2	(c) High tensile welded mesh				
A20.22		.2 Ref no.193 in floor slab and apron	m²	110	118.64	13 050.40
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
					Carried Forward	695 245.07

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					Brought Forward	695 245.07
	8.4.3	(b) .2 Strength concrete 20Mpa/19mm				
A20.23		.1 Apron slabs	m³	5	1 870.83	9 354.15
	8.4.3	(b) .3 Strength concrete 35Mpa/19mm				
A20.24		.1 Floor slabs	m³	18	2 047.13	36 848.34
A20.25		.2 Wall footings	m³	14	2 047.13	28 659.82
A20.26		.3 Floor duct and chamber slabs	m³	27	2 047.13	55 272.51
A20.27		.4 Ramps	m³	2	2 047.13	4 094.26
A20.28		.5 Sump walls	m³	4	2 047.13	8 188.52
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
A20.29		.1 50mm Thick	m³	3	1 926.19	5 778.57
		.2 Strength concrete 20Mpa/13mm				
A20.30		.1 Benching to cable ducts including steel floated surface finish	m³	3	1 985.31	5 955.93
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(c) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
A20.31		.1 Roof slabs	m³	40	2 267.50	90 700.00
A20.32		.2 Beams	m³	1	2 267.50	2 267.50
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Steel floated finish				
A20.33		.1 Floor slabs, roof slabs	m²	190	19.44	3 693.60
A20.34		.2 Top of walls, beams, etc	m²	11	19.44	213.84
		TRENCH COVERS AND FRAMES				
		Dwg EAM-EE-GS-001 & 007				
		Hot dip galvanised mild steel 45 x 45 x 3mm angle iron section frame with approved lugs at back, cast into concrete or built into brick walls, complete				
					Carried Forward	946 272.11

[redacted]

					Brought Forward	946 272.11
A20.35		.1 Frame Hot dip galvanised mild steel tophat section to suit 35mm thick timber trench covers placed between panels as support	m	30	291.65	8 749.50
A20.36		.1 Frame Wrot Merati purpose made framed and ledged trench covers generally 1300mm wide and 35mm thick, placed loose over trenches, including all cutting and waste etc. complete with two coats of Linseed oil for protection	m	10	913.00	9 130.00
A20.37		.1 Covers	m²	15	1 290.00	19 350.00
	SANS 1200 GB	**SLIDING JOINTS**				
A20.38	8.2.8	Limitgliss or other approved sliding bearing 280mm wide Installed complete	m	6	602.00	3 612.00
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
A20.39		.3 230mm Thick wall	m²	168	613.01	102 985.68
A20.40		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	65	508.77	33 070.05
		SUPERSTRUCTURE				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
		.4 230mm thick wall	m²	35	508.77	17 806.95
A20.42		.5 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	150	508.01	76 201.50
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
A20.43		.1 Stretcher course bond	m²	50	586.44	29 322.00
A20.44		.2 Ditto in foundations	m²	60	590.11	35 406.60
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
A20.45		.2 150mm Wide brickforce	m	683	2.19	1 495.77
					Carried Forward	1 283 402.16

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					Brought Forward	1 283 402.16
A20.46		.3 Rod reinforcing (all sizes)	kg	11	23.75	261.25
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
A20.47		.1 75 x 110mm Lintol	m	21	70.12	1 472.52
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
A20.48		.1 Vertically	m	42	63.68	2 674.56
A20.49		2 Horizontally	m	105	23.53	2 470.65
	8.4.4	**AIR BRICKS**				
A20.50		Approved air bricks built into walls complete	no	42	14.66	615.72
	SANS 1200 LC	**SLEEVES**				
		SLEEVE PIPES				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 9 ducts including providing draw wires, etc complete				
A20.51		.1 160mm Diameter placed in filling below floors	m	50	177.38	8 869.00
A20.52		.2 160mm Diameter plugs	no	20	268.75	5 375.00
A20.53		.3 160mm Diameter 90 degree bends	no	20	268.75	5 375.00
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
A20.54		.1 375 Micron under walls including cement mortar triangular fillet in cavity walls	m²	28	32.28	903.84
	8.4.4	Polyethelene sheeting				
A20.55		.1 250 Micron USB green under floors	m²	130	12.73	1 654.90
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	12mm Thick jointex placed vertically between concrete surfaces				
A20.56		.4 Narrow widths not exceeding 300mm wide	m	22	27.99	615.78
		JOINT SEALER				
	8.6	Polyurethane joint sealer				
					Carried Forward	1 313 690.38

					Brought Forward	1 313 690.38
A20.57		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	30	50.52	1 515.60
	SANS 1200 GB	**MOVEMENT JOINT**				
		Two layers Malthoid between horizontal brickwork and concrete faces				
A20.58	8.2.8	.1 Top of brickwork below concrete	m²	15	622.29	9 334.35
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete				
		Dwg EAM-EE-GS-045/48				
		3CR12 steel				
A20.59		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete	no	2	45 077.68	90 155.36
A20.60		.2 Double door and frame with door size 1500 x 2400mm high including all locking devices hinges, etc complete	no	1	61 768.49	61 768.49
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
A20.61		.1 Walls internally	m²	210	105.35	22 123.50
		.2 Walls externally	m²	130	110.72	14 393.60
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions				
		All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
A20.63		.1 Steel doors and frames	m²	20	107.50	2 150.00
A20.64		.2 General surfaces of structural steelwork	m²	10	198.88	1 988.80
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
					Carried Forward	1 517 120.08

					Brought Forward	1 517 120.08
A20.65		.1 Plastered walls	m²	210	66.65	13 996.50
A20.66		.2 Plastered or concrete ceilings	m²	120	64.50	7 740.00
	8.20	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
A20.67		.2 Plastered walls	m²	130	68.80	8 944.00
	8.21	Extra over external painting to walls for painting plaster recess joint in different colour				
A20.68		.1 Recessed joint	m	100	23.65	2 365.00
		BILL NO. A20 **MAIN SUBSTATION - ELA**				
		Carried forward to Summary of Bills			Total	1 550 165.58

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - A				
		UF WORKS				
		A8 - Building works				
		BILL NO. A21 **PORTION A ELECTRICAL**				
		MOTOR CONTROL CENTRES AND DISTRIBUTION BOARDS				
	EMCC 12.1	**DESIGN, DRAWINGS AND GENERAL**				
A21.1	PSGEN B	Provide designs, calculations as stipulated in the contract (refer to PSGEN.B Design and Drawings)	Sum	-	16 125.00	16 125.00
A21.2	EMCC 12.1 (a)	Provide motor control center design drawings and wiring diagrams (refer to particular specifications PMS)	Sum	-	16 125.00	16 125.00
A21.3	EMCC 12.1 (b)	Provide operating all maintenance manuals and "as-built" drawings as specified (refer to particular specification PMS)	Sum	-	7 796.65	7 796.65
	EMCC 12.2	**SUPPLY AND DELIVERY TO SITE**				
A21.4	EMCC 12.2 (a)	Supply and delivery to site complete DB (refer to project specification PSPMC-6.F)	Sum	-	168 833.46	168 833.46
	EMCC 12.3	**INSTALLATION**				
A21.5	EMCC 12.3 (a)	Site installation to site complete DB (refer to project specification PSPMC-6.BF	Sum	-	11 277.38	11 277.38
	EMCC 12.4	**COMMISSIONING**				
A21.6	EMCC 12.4 (a)	Commissioning to site complete DB (refer to project specification PSPMC-6.F)	Sum	-	703.58	703.58
	EMCC	**DESIGNER / CONTRACTOR SPECIFIC REQUIREMENTS**				
	EMCC	All other items or equipment not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify)		Item		
		SMALL POWER AND LIGHTING INSTALLATIONS				
					Carried Forward	220 861.07

					Brought Forward	220 861.07
		Tenderers shall allow for any cost involved with complying to this tender for the supply, store, install, protection, test and commission of the following:				
	ESPL 6	**DISTRIBUTION BOARDS**				
		Distribution board complete with sheet metal tray, frames, sub-frames with all accessories as specified in the City of Cape Town specification.				
		Flush mounted fire panel enclosure manufactured as per City of Cape Town specifications				
A21.7		Supply	No	2	2 680.04	5 360.08
A21.8		Install	No	2	331.69	663.38
		Flush mounted access control panel enclosure manufactured as per City of Cape Town Specifications				
A21.9		Supply	No	2	2 680.04	5 360.08
A21.10		Install	No	2	331.69	663.38
		Flush mounted fire detection control panel enclosure manufactured as per City of Cape Town Specifications				
A21.11		Supply	No	2	2 680.04	5 360.08
A21.12		Install	No	2	331.69	663.38
		TELEPHONE DISTRIBUTION DUCTS 200 mm thick pressed wood board installed in telephone ducts complete with anchors, etc 1000mm high x 800mm wide				
A21.13		Supply	No	2	2 680.04	5 360.08
A21.14		Install	No	2	331.69	663.38
	ESPL 3	**DRAW WIRE**				
		2mm Diameter stainless steel draw wire drawn into wire ways				
A21.15		Supply	m	3500	5.36	18 760.00
A21.16		Install	m	3500	1.99	6 965.00
		MANHOLES				
		300x300x300 deep manhole including excavation, building, backfilling and heavy duty cast iron cover.				
A21.17		Supply	No	10	5 912.50	59 125.00
A21.18		Install	No	10	1 343.75	13 437.50
		600x600x600 deep manhole including excavation, building, backfilling and heavy duty cast iron cover.				
A21.19		Supply	No	6	6 987.50	41 925.00
A21.20		Install	No	6	1 451.25	8 707.50
		1000x1000x1000 deep manhole including excavation, building, backfilling and heavy duty cast iron cover.				
A21.21		Supply	No	6	8 062.50	48 375.00
A21.22		Install	No	6	1 612.50	9 675.00
					Carried Forward	451 924.91

					Brought Forward	451 924.91
	ESPL 3	**PVC CONDUIT AND ACCESSORIES**				
		Flush mounted, installed cast into concrete, placed into position for building into brickwork or concrete or chased into brickwork or concrete complete with couplings, bends, tees, saddles etc.				
		20mm Diameter				
A21.23		Supply	m	2400	7.78	18 672.00
A21.24		Install	m	2400	15.92	38 208.00
		25mm Diameter				
A21.25		Supply	m	760	11.26	8 557.60
A21.26		Install	m	760	18.58	14 120.80
		32mm Diameter				
A21.27		Supply	m	160	19.64	3 142.40
A21.28		Install	m	160	21.23	3 396.80
		40mm Diameter				
A21.29		Supply	m	100	33.52	3 352.00
A21.30		Install	m	100	23.89	2 389.00
		50mm Diameter				
A21.31		Supply	m	80	43.69	3 495.20
A21.32		Install	m	80	26.53	2 122.40
	ESPL 3	**CONDUIT ACCESSORIES**				
		Round box 8 Way knockout for 20mm diameter conduit				
A21.33		Supply	No	300	8.04	2 412.00
A21.34		Install	No	300	19.90	5 970.00
		Coupling for 20mm diameter conduit				
A21.35		Supply	No	600	1.34	804.00
A21.36		Install	No	600	2.66	1 596.00
		Coupling for 25mm diameter conduit				
A21.37		Supply	No	190	1.68	319.20
A21.38		Install	No	190	2.66	505.40
		Coupling for 32mm diameter conduit				
A21.39		Supply	No	40	4.69	187.60
A21.40		Install	No	40	2.66	106.40
		Coupling for 40mm diameter conduit				
A21.41		Supply	No	25	6.70	167.50
A21.42		Install	No	25	2.66	66.50
		Coupling for 50mm diameter conduit				
A21.43		Supply	No	20	8.04	160.80
A21.44		Install	No	20	2.66	53.20
		Adaptors for 20mm diameter conduit				
A21.45		Supply	No	460	1.34	616.40
A21.46		Install	No	460	2.66	1 223.60
						563 569.71

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						563 569.71
		Adaptors for 25mm diameter conduit				
A21.47		Supply	No	240	3.62	868.80
A21.48		Install	No	240	2.66	638.40
		Adaptors for 32mm diameter conduit				
A21.49		Supply	No	10	5.02	50.20
A21.50		Install	No	10	2.66	26.60
		Adaptors for 40mm diameter conduit				
A21.51		Supply	No	10	6.70	67.00
A21.52		Install	No	10	2.66	26.60
		Adaptors for 50mm diameter conduit				
A21.53		Supply	No	16	8.04	128.64
A21.54		Install	No	16	2.66	42.56
	ESPL 3	**RIGID PVC WALL BOXES**				
		Wall Boxes placed in position for casting into concrete, building or chased into brickwork or surface mounted to brickwork including locknuts				
		100 x 50 x 50mm box [clusterloc]				
A21.55		Supply	No	600	6.70	4 020.00
A21.56		Install	No	600	19.90	11 940.00
		100 x 100 x 50mm box [clusterloc]				
A21.57		Supply	No	300	9.38	2 814.00
A21.58		Install	No	300	19.90	5 970.00
		300 x 300 x 150mm box [clusterloc]				
A21.59		Supply	No	60	188.94	11 336.40
A21.60		Install	No	60	26.53	1 591.80
	ESPL 3	**PVC TRUNKING**				
		PVC Trunking complete with PVC cover, coupling, angle, tee, stop end, etc. surface mounted to brickwork, concrete, steel, wood, etc.				
		40 x 40 x 3mm Trunking				
A21.61		Supply	m	100	30.49	3 049.00
A21.62		Install	m	100	13.27	1 327.00
		50 x 50 x 3mm Trunking				
A21.63		Supply	m	160	54.04	8 646.40
A21.64		Install	m	160	15.92	2 547.20
		75 x 75 x 3mm Trunking				
A21.65		Supply	m	50	87.10	4 355.00
A21.66		Install	m	50	18.58	929.00
		100 x 100 x 3mm Trunking				
A21.67		Supply	m	36	142.94	5 145.84
A21.68		Install	m	36	26.53	955.08
					Carried Forward	630 045.23

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					Brought Forward	630 045.23
		100 x 100 x 3mm Trunking				
A21.69		Supply	m	20	142.94	2 858.80
A21.70		Install	m	20	26.53	530.60
						-
		40 x 40 x 3mm End Caps				
A21.71		Supply	No.	20	10.72	214.40
A21.72		Install	No.	20	6.63	132.60
		50 x 50 x 3mm Trunking				
A21.73		Supply	No.	20	12.73	254.60
A21.74		Install	No.	20	13.27	265.40
		75 x 75 x 3mm Trunking				
A21.75		Supply	No.	20	14.74	294.80
A21.76		Install	No.	20	13.27	265.40
		100 x 100 x 3mm Trunking				
A21.77		Supply	No.	20	22.11	442.20
A21.78		Install	No.	20	13.27	265.40
		100 x 100 x 3mm Trunking				
A21.79		Supply	No.	60	22.11	1 326.60
A21.80		Install	No.	60	13.27	796.20
		UNDERSCREED DUCTING SYSTEM				
		220x35mm under screed galvanized ducting with breakout outlet points at 500mm centre to accommodate a flush access floor box				
A21.81		Supply	m	60	962.60	57 756.00
A21.82		Install	m	60	86.24	5 174.40
		205 x 287 x 79mm Flush floor box for under screed duction system as specified with removable lid and concrete ingress prevention plate equal or similar to Cabstrut Floor box - Colour to be advised				
A21.83		Supply	No	10	1 433.82	14 338.20
A21.84		Install	No	10	265.35	2 653.50
	ESPL 3	**STAINLESS STEEL CONDUIT AND ACCESSORIES**				
		316 Stainless steel conduit surface mounted onto brickwork or concrete complete with couplings, bends, tees, saddles etc.				
		20mm Diameter conduit				
A21.85		Supply	m	1600	227.80	364 480.00
A21.86		Install	m	1600	29.19	46 704.00
		20mm Flexible diameter conduit				
A21.87		Supply	m	200	274.12	54 824.00
A21.88		Install	m	200	134.38	26 876.00
		25mm Diameter conduit				
A21.89		Supply	m	800	305.53	244 424.00
A21.90		Install	m	800	39.81	31 848.00
					Carried Forward	1 486 770.33

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					Brought Forward	1 486 770.33
		25mm Flexible diameter conduit				
A21.91		Supply	m	100	381.62	38 162.00
A21.92		Install	m	100	134.38	13 438.00
	ESPL 3	**STAINLESS STEEL CONDUIT ACCESSORIES**				
		316 Stainless Steel conduit complete with cover, countersink bolt etc.				
		Round box 1-4 Way for 20mm diameter conduit				
A21.93		Supply	No	160	376.25	60 200.00
A21.94		Install	No	160	102.12	16 339.20
		Coupling for 20mm diameter conduit				
A21.95		Supply	No	1000	46.76	46 760.00
A21.96		Install	No	1000	21.50	21 500.00
		Adaptors for 20mm diameter conduit				
A21.97		Supply	No	1000	59.12	59 120.00
A21.98		Install	No	1000	21.50	21 500.00
		Coupling for 25mm diameter conduit				
A21.99		Supply	No	200	58.05	11 610.00
A21.100		Install	No	200	26.88	5 376.00
		Adaptors for 25mm diameter conduit				
A21.101		Supply	No	1200	59.39	71 268.00
A21.102		Install	No	1200	26.88	32 256.00
	ESPL 3	**STAINLESS STEEL FLEXIBLE CONDUIT**				
		316 Stainless Steel Flexible conduit				
		20mm Diameter x 1000mm long complete with connectors at both ends				
A21.103		Supply	No	20	376.25	7 525.00
A21.104		Install	No	20	134.38	2 687.60
		25mm Diameter x 1000mm long complete with connectors at both ends				
A21.105		Supply	No	20	424.62	8 492.40
A21.106		Install	No	20	134.38	2 687.60
	EMCA 7	**WIRING CHANNEL**				
		316 Stainless steel wiring channel complete with stainless steel cover surface or suspended from concrete steelwork or trusses complete with hangers, brackets, anchors, etc.				
		P1000 Channel				
A21.107		Supply	m	360	865.12	311 443.20
A21.108		Install	m	360	39.81	14 331.60
		P8000 Channel				
A21.109		Supply	m	300	1 445.62	433 686.00
A21.110		Install	m	300	39.81	11 943.00
					Carried Forward	2 677 095.93

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					Brought Forward	2 677 095.93
		P8000 End Cap				
A21.111		Supply	No	30	118.19	3 545.70
A21.112		Install	No	30	19.90	597.00
		P8000 Elbow				
						-
						-
A21.113		Supply	No	10	924.62	9 246.20
A21.114		Install	No	10	26.53	265.30
		P8000 Tee				
A21.115		Supply	No	10	1 206.02	12 060.20
A21.116		Install	No	10	33.16	331.60
		P8000 4 Way				
A21.117		Supply	No	10	1 599.99	15 999.90
A21.118		Install	No	10	33.16	331.60
		P8000 Distribution Board Outlet				
A21.119		Supply	No	4	1 206.02	4 824.08
A21.120		Install	No	4	33.16	132.64
		P8000 Distribution Board Outlet				
A21.121		Supply	No	4	1 206.02	4 824.08
A21.122		Install	No	4	33.16	132.64
		P9000 Channel				
A21.123		Supply	m	62	1 940.08	120 284.96
A21.124		Install	m	62	39.81	2 468.22
		P9000 End Cap				
A21.125		Supply	No	30	126.64	3 799.20
A21.126		Install	No	30	19.90	597.00
		P9000 Elbow				
A21.127		Supply	No	10	1 206.02	12 060.20
A21.128		Install	No	10	26.53	265.30
		P9000 Tee				
A21.129		Supply	No	10	1 374.86	13 748.60
A21.130		Install	No	10	33.16	331.60
		P9000 4 Way				
A21.131		Supply	No	10	1 618.07	16 180.70
A21.132		Install	No	10	33.16	331.60
		P9000 Distribution Board Outlet				
A21.133		Supply	No	4	1 398.98	5 595.92
A21.134		Install	No	4	33.16	132.64
		P9000 Distribution Board Outlet				
A21.135		Supply	No	4	1 398.98	5 595.92
A21.136		Install	No	4	33.16	132.64
		All accessories for wiring duct support, ceiling support every wood / concrete truss, cover clips, covers, channels & combination supports, clamps,				
					Carried Forward	2 910 911.37

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					Brought Forward	2 910 911.37
		fittings, gripple every 1.5m or every wood / concrete truss, nuts, bolts all that may be required				
A21.137		Supply	Sum	-	46 439.71	46 439.71
A21.138		Install	Sum	-	11 494.98	11 494.98
	ESPL	**POWER SKIRTING AND ACCESSORIES**				
		The rates for power skirting shall include for splices, jointing, drilling, cut opening in the back of the power skirting for access to draw box, etc. Power skirting surface mounted to brickwork or concrete complete with cover equal or similar to OL801 - Colour to be advised				
		2 Tier Three-compartment skirting				
A21.139		Supply	m	28	279.17	7 816.76
A21.140		Install	m	28	39.81	1 114.68
		2 Tier end cap				
A21.141		Supply	No	6	45.56	273.36
A21.142		Install	No	6	19.90	119.40
		2 Tier External elbow				
A21.143		Supply	No	3	71.03	213.09
A21.144		Install	No	3	26.53	79.59
		2 Tier Flat elbow				
A21.145		Supply	No	3	176.88	530.64
A21.146		Install	No	3	26.53	79.59
		2 Tier Standard tee				
A21.147		Supply	No	3	93.80	281.40
A21.148		Install	No	3	33.16	99.48
		2 Tier Flat tee				
A21.149		Supply	No	3	183.58	550.74
A21.150		Install	No	3	33.16	99.48
		Switching Accessories complete with cover plate as required and fitted to power skirting equal or similar to Clipsal S2000				
		16A Three-pin switched socket outlet				
A21.151		Supply	No	4	140.71	562.84
A21.152		Install	No	4	33.16	132.64
		16A Three-pin dedicated switched socket outlet with shaved earth pin				
A21.153		Supply	No	4	211.72	846.88
A21.154		Install	No	4	33.16	132.64
		20A Double-pole isolator with cord grip				
A21.155		Supply	No	10	317.59	3 175.90
A21.156		Install	No	10	33.16	331.60
		30A Double-pole isolator				
						2 985 286.77

[redacted]

						2 985 286.77
A21.157		Supply	No	11	335.00	3 685.00
A21.158		Install	No	11	33.16	364.76
		Telephone Point				
A21.159		Supply	No	4	238.52	954.08
A21.160		Install	No	4	19.90	79.60
		Data Point				
A21.161		Supply	No	4	238.52	954.08
A21.162		Install	No	4	19.90	79.60
		Blank cover plate for telephone / data points				
A21.163		Supply	No	10	62.31	623.10
A21.164		Install	No	10	13.27	132.70
	ESPL	**UTILITY POWER POLE AND ACCESSORIES**				
		Utility Pole mounted on the final floor level up to the concrete soffit complete with complete with pole, covers, base plate, ceiling flange and jack assembly, outlet kit containing body, universal cradle, covers and dividers equal or similar to Cabstrut Station Master utility pole - Colour to be advised				
		3.5m Pole and accessories as specified				
A21.165		Supply	No	1	1 675.02	1 675.02
A21.166		Install	No	1	199.01	199.01
		4m Pole and accessories as specified				
A21.167		Supply	No	1	1 943.03	1 943.03
A21.168		Install	No	1	232.18	232.18
		Switching Accessories complete with cover plate as required and fitted to Utility Pole equal or similar to Clipsal S2000				
		16A Three-pin switched socket outlet				
A21.169		Supply	No	1	148.07	148.07
A21.170		Install	No	1	33.16	33.16
		16A Three-pin dedicated switched socket outlet with shaved earth pin				
A21.171		Supply	No	1	148.07	148.07
A21.172		Install	No	1	33.16	33.16
		Telephone Point				
A21.173		Supply	No	1	148.07	148.07
A21.174		Install	No	1	26.53	26.53
		Data Point				
A21.175		Supply	No	1	148.07	148.07
A21.176		Install	No	1	26.53	26.53
		Blank cover plate for telephone / data points				
A21.177		Supply	No	1	87.10	87.10
					Carried Forward	2 997 007.69

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					Brought Forward	2 997 007.69
A21.178		Install	No	1	13.27	13.27
	ESPL 4	**LIGHT SWITCHES**				
		Light switch complete with cover and switch installed in 100 x 50 x 50mm wall boxes equal or similar to Clipsal S2000 - Colour to be advised				
		16A One-lever one-way switch				
A21.179		Supply	No	4	54.94	219.76
A21.180		Install	No	4	26.53	106.12
		16A Two-lever one-way switch				
A21.181		Supply	No	10	75.30	753.00
A21.182		Install	No	10	33.16	331.60
		16A One-lever two-way switch				
A21.183		Supply	No	2	66.80	133.60
A21.184		Install	No	2	39.81	79.62
		16A Two-lever two-way switch				
A21.185		Supply	No	1	80.40	80.40
A21.186		Install	No	1	46.44	46.44
		16A Two-lever with one-way and one two-way switch				
A21.187		Supply	No	1	113.91	113.91
A21.188		Install	No	1	53.07	53.07
		16A One-lever one way watertight switch				
A21.189		Supply	No	15	121.94	1 829.10
A21.190		Install	No	15	39.81	597.15
		16A One-lever intermediate switch				
A21.191		Supply	No	5	241.21	1 206.05
A21.192		Install	No	5	26.53	132.65
		3.4 Amp Rotary dimmer with integrated switch				
A21.193		Supply	No	5	1 273.02	6 365.10
A21.194		Install	No	5	59.71	298.55
		Touch press mechanical on/off dimming with 500VA Universal tactile dimmer module				
A21.195		Supply	No	5	1 273.02	6 365.10
A21.196		Install	No	5	59.71	298.55
		Touch press mechanical on/off dimming with 800W Universal tactile dimmer module				
A21.197		Supply	No	5	1 608.03	8 040.15
A21.198		Install	No	5	59.71	298.55
		Blank Cover plate for 100mm x 50mm box				
A21.199		Supply	No	30	26.80	804.00
A21.200		Install	No	30	13.27	398.10
	ESPL 5	**SWITCHED SOCKET OUTLET**				
					Carried Forward	3 025 571.53

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					Brought Forward	3 025 571.53
		Switched socket outlet complete with cover and socket installed in 100 x 100 x 50mm wall boxes equal or similar to Clipsal S2000 - Colour to be advised				
		16A Three-pin switched socket outlet				
A21.201		Supply	No	4	179.56	718.24
A21.202		Install	No	4	33.16	132.64
		16A Three-pin dedicated switched socket outlet with shaved earth pin				
A21.203		Supply	No	10	167.51	1 675.10
A21.204		Install	No	10	33.16	331.60
		16A Double three-pin switched socket outlet				
A21.205		Supply	No	5	151.09	755.45
A21.206		Install	No	5	33.16	165.80
		16A Double three-pin dedicated switched socket outlet with shaved earth pin				
A21.207		Supply	No	10	185.07	1 850.70
A21.208		Install	No	10	33.16	331.60
		Blank Cover plate for 100mm x 100mm box				
A21.209		Supply	No	5	26.80	134.00
A21.210		Install	No	5	13.27	66.35
	ESPL 5	**ISOLATORS**				
		Isolator complete with cover and socket installed in 100 x 100 x 50mm wall boxes equal or similar to Clipsal S2000 - Colour to be advised				
		30A Double pole isolator				
A21.211		Supply	No	4	178.22	712.88
A21.212		Install	No	4	33.16	132.64
		60A Double pole isolator				
A21.213		Supply	No	1	190.29	190.29
A21.214		Install	No	1	33.16	33.16
		30A Triple-pole isolator				
A21.215		Supply	No	1	253.26	253.26
A21.216		Install	No	1	39.81	39.81
		60A Triple-pole isolator				
A21.217		Supply	No	1	253.26	253.26
A21.218		Install	No	1	39.81	39.81
	ESPL 5	**GENERAL SWITCHES**				
		General switches complete with accessories				
		Day / night switch equal or similar Royce Thompson				
A21.219		Supply	No	10	1 340.02	13 400.20
A21.220		Install	No	10	86.24	862.40
						3 047 650.72

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						3 047 650.72
A21.221		Supply	No	4	5 092.07	20 368.28
A21.222		Install	No	4	199.01	796.04
		4.7VA Vertical shaver socket outlets				
A21.223		Supply	No	2	871.01	1 742.02
A21.224		Install	No	2	86.24	172.48
		5A Round three-pin unswitched socket outlet installed in a round conduit box or 100x50x50mm box (box measured elsewhere)				
A21.225		Supply	No	4	38.19	152.76
A21.226		Install	No	4	26.53	106.12
		5A three-pin unswitched socket outlet to fit P8300				-
						-
		Wiring channel				
A21.227		Supply	No	20	38.19	763.80
A21.228		Install	No	20	26.53	530.60
		16A three-pin switched socket outlet in weatherproof box				
A21.229		Supply	No	10	340.37	3 403.70
A21.230		Install	No	10	46.44	464.40
		16A Double three-pin switched socket outlet in weatherproof box				
A21.231		Supply	No	10	338.69	3 386.90
A21.232		Install	No	10	46.44	464.40
	ESPL 4	**OCCUPANCY SENSOR**				
		WALL SENSORS				
		Passive infrared wall switch sensor 93m² 180° coverage and Automatic on/off and Manual on / automatic off control as per specification.				
A21.233		Supply	No	4	3 118.41	12 473.64
A21.234		Install	No	4	86.24	344.96
		Ultrasonic wall switch 37m² 180° coverage with Automatic on/off and Manual on / automatic off control as per specification.				
A21.235		Supply	No	4	3 118.41	12 473.64
A21.236		Install	No	4	86.24	344.96
		Ultrasonic and Passive infrared wall switch 93m² 180° coverage and Automatic on/off and Manual on / automatic off control as per specification.				
A21.237		Supply	No	4	3 118.41	12 473.64
A21.238		Install	No	4	86.24	344.96
		Ultrasonic and Passive infrared ceiling sensor 46m² coverage with Automatic on/off and Manual on / automatic off control as per specification.				
A21.239		Supply	No	5	3 118.41	15 592.05
A21.240		Install	No	5	86.24	431.20
					Carried Forward	3 134 481.27

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					Brought Forward	3 134 481.27
		Ultrasonic and Passive infrared ceiling sensor 93m² coverage with intelligent and Automatic on/off and Manual on / automatic off control as per specification.				
A21.241		Supply	No	1	3 118.41	3 118.41
A21.242		Install	No	1	86.24	86.24
		Ultrasonic and Passive infrared ceiling sensor 186m² coverage with Automatic on/off and Manual on / automatic off control.				
A21.243		Supply	No	2	4 090.89	8 181.78
A21.244		Install	No	2	86.24	172.48
		Ultrasonic ceiling sensor 46m² coverage with Automatic on/off and Manual on / automatic off control as per specification.				
A21.245		Supply	No	4	3 118.41	12 473.64
A21.246		Install	No	4	86.24	344.96
		Ultrasonic ceiling sensor 93m² coverage with Automatic on/off and Manual on / automatic off control as per specification.				
A21.247		Supply	No	1	3 118.41	3 118.41
A21.248		Install	No	1	86.24	86.24
		Ultrasonic ceiling sensor 186m² coverage with Automatic on/off and Manual on / automatic off control 230VAC.				
A21.249		Supply	No	1	4 090.89	4 090.89
A21.250		Install	No	1	86.24	86.24
	ESPL 5	**WEATHERPROOF ISOLATORS**				
		20A Double-pole isolator in weatherproof box				
A21.251		Supply	No	6	365.82	2 194.92
A21.252		Install	No	6	46.44	278.64
		30A Double-pole isolator in weatherproof box				
A21.253		Supply	No	8	365.82	2 926.56
A21.254		Install	No	8	46.44	371.52
		60A Double-pole isolator in weatherproof box				
A21.255		Supply	No	4	377.88	1 511.52
A21.256		Install	No	4	46.44	185.76
		30A Triple-pole isolator in weatherproof box				
A21.257		Supply	No	6	440.87	2 645.22
A21.258		Install	No	6	53.07	318.42
		60A Triple-pole isolator in weatherproof box				
A21.259		Supply	No	8	440.87	3 526.96
A21.260		Install	No	8	53.07	424.56
	ESPL 5	**FLOOR RETICULATION BOX AND ACCESSORIES**				
		Floor reticulation box for under screed floor boxes flush				
					Carried Forward	3 180 624.64

					Brought Forward	3 180 624.64
		with the final floor surface complete with accessories draw box, removable lid and concrete ingress prevention plate equal or similar to Cabstrut Floor box - Colour to be advised 205 x 287 x 79mm Flush floor box and accessories as specified				
A21.261		Supply	No	2	1 433.82	2 867.64
A21.262		Install	No	2	265.35	530.70
		Floor reticulation box for access floor boxes flush with the final access floor surface complete with accessories draw box and removable lid equal or similar to Cabstrut Floor box - Colour to be advised 205 x 287 x 79mm floor box and accessories as specified				
A21.263		Supply	No	1	1 433.82	1 433.82
A21.264		Install	No	1	265.35	265.35
		Switching Accessories complete with cover plate as required and fitted to floor boxes equal or similar to Clipsal S2000				
		16A Three-pin switched socket outlet				
A21.265		Supply	No	1	100.50	100.50
A21.266		Install	No	1	33.16	33.16
		16A Three-pin dedicated switched socket outlet				
A21.267		Supply	No	1	127.30	127.30
A21.268		Install	No	1	33.16	33.16
		Telephone Point				
A21.269		Supply	No	1	87.10	87.10
A21.270		Install	No	1	26.53	26.53
		Data Point				
A21.271		Supply	No	1	87.10	87.10
A21.272		Install	No	1	26.53	26.53
		Blank cover plate for telephone / data points				
A21.273		Supply	No	1	87.10	87.10
A21.274		Install	No	1	19.90	19.90
	ESPL	**LUMINAIRES AND EQUIPMENT**				
	4	Supply and install luminaires or equipment complete with lamps, connections etc. mounted in position				
		Type A: [Refer to Project Specification]				
A21.275		Supply	No	6	8 527.35	51 164.10
A21.276		Install	No	6	86.24	517.44
		Type B: [Refer to Project Specification]				
A21.277		Supply	No	6	10 603.31	63 619.86
						3 301 651.93

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						3 301 651.93
A21.278		Install	No	6	86.24	517.44
		Type C: [Refer to Project Specification]				
A21.279		Supply	No	7	3 930.01	27 510.07
A21.280		Install	No	7	86.24	603.68
		Type D: [Refer to Project Specification]				
A21.281		Supply	No	7	6 811.59	47 681.13
A21.282		Install	No	7	86.24	603.68
		Type E: [Refer to Project Specification]				
A21.283		Supply	No	7	8 527.35	59 691.45
A21.284		Install	No	7	86.24	603.68
		Type F: [Refer to Project Specification]				
A21.285		Supply	No	7	10 603.31	74 223.17
A21.286		Install	No	7	86.24	603.68
		Type G: [Refer to Project Specification]				
A21.287		Supply	No	12	5 203.56	62 442.72
A21.288		Install	No	12	86.24	1 034.88
		Type H: [Refer to Project Specification]				
A21.289		Supply	No	12	7 094.60	85 135.20
A21.290		Install	No	12	86.24	1 034.88
		Type I: [Refer to Project Specification]				
A21.291		Supply	No	8	8 411.56	67 292.48
A21.292		Install	No	8	165.84	1 326.72
		Type J: [Refer to Project Specification]				
A21.293		Supply	No	4	8 411.56	33 646.24
A21.294		Install	No	4	165.84	663.36
		Type K: [Refer to Project Specification]				
A21.295		Supply	No	3	9 091.76	27 275.28
A21.296		Install	No	3	238.81	716.43
		Type L: [Refer to Project Specification]				
A21.297		Supply	No	8	14 028.40	112 227.20
A21.298		Install	No	8	331.69	2 653.52
		Type M: [Refer to Project Specification]				
A21.299		Supply	No	8	15 379.13	123 033.04
A21.300		Install	No	8	331.69	2 653.52
		Type N: [Refer to Project Specification]				
A21.301		Supply	No	4	9 038.28	36 153.12
A21.302		Install	No	4	86.24	344.96
		Type O: [Refer to Project Specification]				
A21.303		Supply	No	2	2 718.15	5 436.30
A21.304		Install	No	2	86.24	172.48
		Type P: [Refer to Project Specification]				
					Carried Forward	4 076 932.24

					Brought Forward	4 076 932.24
A21.305		Supply	No	4	2 215.85	8 863.40
A21.306		Install	No	4	86.24	344.96
		Type Q: [Refer to Project Specification]				
A21.307		Supply	No	2	4 563.57	9 127.14
A21.308		Install	No	2	86.24	172.48
	ESPL 9, 10 & 11	**TESTING, COMMISSIONING etc.**				
A21.309		Test and commission the complete low voltage system including certificate of compliance for each distribution board, asbuilt drawings,	Item	1	6 633.76	6 633.76
		BUILDINGS ELECTRICAL INSTALLATION				
	PSGEN (B)	**DESIGN, DRAWINGS AND GENERAL**				
A21.310	PSGEN B	Provide designs, calculations as stipulated in the contract (refer to PSGEN.B Design and Drawings)	Sum	-	16 125.00	16 125.00
A21.311	PSGEN B	Provide operating all maintenance manuals and "as-built" drawings	Sum	-	7 796.65	7 796.65
	ESPL 18.1	**SUPPLY AND DELIVERY TO SITE**				
A21.312	ESPL 18.1 (a)	Supply and delivery to site of a complete electrical installation (refer to project specification PSESPL-F)	Sum	-	-	Included
	ESPL 18.2	**INSTALLATION**				
A21.313	ESPL 18.2 (a)	Site Installation to site of a complete electrical installation (refer to project specification PSESPL-F)	Sum	-	-	Included
	ESPL 18.3	**COMMISSIONING**				
A21.314	ESPL 18.2 (a)	Commissioning to site of a complete electrical installation (refer to project specification PSESPL-F)	Sum	-	5 970.38	5 970.38
	ESPL	**DESIGNER / CONTRACTOR SPECIFIC REQUIREMENTS**				
	ESPL	All other items or equipment not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify)		Item		
					Carried Forward	4 131 966.01

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					Brought Forward	4 131 966.01
		.....				
		.....				
		.....				
		.....				
		.....				
		FIRE DETECTION AND SUPPRESSION				
	EPFD 1.1	**SUPPLY AND DELIVERY TO SITE**				
A21.315		Fire Panel complete with opertaing and LCD display unit with panel controller, universal power supply, batteries, housing, rails, battery controller module, analogue addressable line module, zone modules, annunciator modules, relay modules, input/output modules, communication module, interface module, all other modules required to successfully commission the Fire detection system [To City of Cape Town Specification]	No	1	47 806.10	47 806.10
~~A21.316~~		~~Gas release Panel and all accessories~~	~~No~~	~~1~~	-	-
A21.317		Addressable Strobe for base sounder accessories	Each	10	1 177.05	11 770.50
A21.318		Addressable Indoor Base sounder accessories	Each	10	1 177.05	11 770.50
A21.319		Addressable Optical smoke detector accessories	Each	10	570.42	5 704.20
A21.320		Addressable Thermal Detector accessories	Each	16	642.85	10 285.60
A21.321		Detector Base with Relay and Spring accessories	Each	46	72.42	3 331.32
A21.322		Red Manual call point Indoor surface mount, resettable, complete with test key accessories	Each	11	1 086.50	11 951.50
A21.323		Low voltage Relay interface module 230V accessories	Each	5	1 629.75	8 148.75
A21.324		Enclosure / Cabinets to house all equipment in a neat and tidy installation accessories	Each	2	9 054.19	18 108.38
A21.325		Fire resistant 2-Wire screened cable accessories	m	800	16.30	13 040.00
	EPFD 1.2	**INSTALLATION**				
A21.326		Fire Panel complete with opertaing and LCD display unit with panel controller, universal power supply, batteries, housing, rails, battery controller module, analogue addressable line module, zone modules, annunciator modules, relay modules, input/output modules, communication module, interface module, all other modules required to successfully commission the Fire detection system [To City of Cape Town Specification]	No	1	1 745.14	1 745.14
~~A21.327~~		~~Gas release Panel and all accessories~~	~~No~~	~~1~~	-	
					Carried Forward	4 275 628.00

					Brought Forward	4 275 628.00
A21.328		Addressable Strobe for base sounder accessories	Each	10	394.44	3 944.40
A21.329		Addressable Indoor Base sounder accessories	Each	10	394.44	3 944.40
A21.330		Addressable Optical smoke detector accessories	Each	10	394.44	3 944.40
A21.331		Addressable Thermal Detector accessories	Each	16	430.29	6 884.64
A21.332		Detector Base with Relay and Spring accessories	Each	46	430.29	19 793.34
A21.333		Red Manual call point Indoor surface mount, resettable, complete with test key accessories	Each	11	430.29	4 733.19
A21.334		Low voltage Relay interface module 230V accessories	Each	5	430.29	2 151.45
A21.335		Enclosure / Cabinets to house all equipment in a neat and tidy installation accessories	Each	2	430.29	860.58
A21.336		Fire resistant 2-Wire screened cable accessories	m	800	17.92	14 336.00
	EPFD 1.3	**COMMISSIONING**				
A21.337		Commissioning and Testing of the entire Fire Detection System in accordance with SANS 10139	Sum	-	6 275.17	6 275.17
A21.338		Commissioning and Testing of the Fire Suppression System in accordance with SANS 14520.	Sum	-	6 275.17	6 275.17
A21.339		As-Built drawings, User Manuals, Installation certificate, Commissioning certificate, Acceptance certificate, Verification certificate for the entire Fire Detection System in accordance with SANS 10139	Sum	-	17 929.08	17 929.08
		MULTICORE CABLES & EARTH WIRES				
	GEN	**DESIGN, DRAWINGS AND GENERAL**				
A21.340	PSGEN B	Provide designs, calculations as stipulated in the contract (refer to PSGEN.B Design and Drawings)	Sum	-	21 500.00	21 500.00
A21.341	PSGEN B	Provide operating all maintenance manuals and "as-built" drawings	Sum	-	7 796.65	7 796.65
	EMCA 21.1	**SUPPLY AND DELIVERY TO SITE**				
	EMCA 21.1 (a)	**Supply and delivery to site of cables, jointing, terminating materials, all earth wires and cable names tags as per the particular specification**				
A21.342		120mm² 4C PVC SWA PVC Cu Cable	m	160	1 656.45	265 032.00
A21.343		35mm² 4C PVC SWA PVC Cu Cable	m	252	524.11	132 075.72
					Carried Forward	4 793 104.19

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					Brought Forward	4 793 104.19
A21.344		25mm² 4C PVC SWA PVC Cu Cable	m	240	365.22	87 652.80
A21.345		10mm² 3C PVC SWA PVC Cu Cable	m	160	135.46	21 673.60
A21.346		6mm² 3C PVC SWA PVC Cu Cable	m	360	94.00	33 840.00
A21.347		4mm² 3C PVC SWA PVC Cu Cable	m	800	67.19	53 752.00
A21.348		2.5mm² 3C PVC SWA PVC Cu Cable	m	356	52.56	18 711.36
A21.349		6mm² 1C PVC Red	m	960	20.33	19 516.80
A21.350		6mm² 1C PVC Black	m	960	20.33	19 516.80
A21.351		4mm² 1C PVC Red	m	2310	13.43	31 023.30
A21.352		4mm² 1C PVC Black	m	2310	13.43	31 023.30
A21.353		2.5mm² 1C PVC Red	m	2500	8.26	20 650.00
A21.354		2.5mm² 1C PVC Black	m	2500	8.26	20 650.00
A21.355		1.5mm² 1C PVC Red	m	800	5.16	4 128.00
A21.356		1.5mm² 1C PVC Black	m	800	5.16	4 128.00
A21.357		1.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	360	22.36	8 049.60
A21.358		2.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	360	33.44	12 038.40
A21.359		4mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	360	53.70	19 332.00
A21.360		6mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	360	79.81	28 731.60
A21.361		1.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	100	27.46	2 746.00
A21.362		2.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	100	42.22	4 222.00
A21.363		4mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	100	63.98	6 398.00
A21.364		6mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	100	102.12	10 212.00
A21.365		70mm² PVC Green / Yellow Cu Cable	m	160	229.61	36 737.60
A21.366		25mm² PVC Green / Yellow Cu Cable	m	252	88.80	22 377.60
A21.367		16mm² PVC Green / Yellow Cu Cable	m	240	51.30	12 312.00
A21.368		10mm² PVC Green / Yellow Cu Cable	m	160	32.96	5 273.60
A21.369		6mm² 1C PVC Green / Yellow Cu Cable	m	960	20.33	19 516.80
A21.370		4mm² 1C PVC Green / Yellow Cu Cable	m	2310	13.43	31 023.30
A21.371		2.5mm² 1C PVC Green / Yellow Cu Cable	m	3300	8.26	27 258.00
	EMCA	**Enviro Glands Termination material including**				
					Carried Forward	5 405 598.65

[redacted]

					Brought Forward	5 405 598.65
	21.1 (a)	**glands, neoprene shrouds, lugs, insulating materials, cable ties and corrosion proof bolts, washers, spring washers, nuts, etc to terminate the following 600/1000V PVC SWA PVC electrical cables complete.**				
A21.372		120mm² 4C PVC SWA PVC Cu Cable	No.	4	649.91	2 599.64
A21.373		35mm² 4C PVC SWA PVC Cu Cable	No.	8	268.01	2 144.08
A21.374		25mm² 4C PVC SWA PVC Cu Cable	No.	8	160.80	1 286.40
A21.375		10mm² 3C PVC SWA PVC Cu Cable	No.	2	107.20	214.40
A21.376		6mm² 3C PVC SWA PVC Cu Cable	No.	24	68.34	1 640.16
A21.377		4mm² 3C PVC SWA PVC Cu Cable	No.	16	62.98	1 007.68
A21.378		2.5mm² 3C PVC SWA PVC Cu Cable	No.	32	46.90	1 500.80
A21.379		70mm² PVC Green / Yellow Cu Cable	No.	4	26.80	107.20
A21.380		25mm² PVC Green / Yellow Cu Cable	No.	8	16.08	128.64
A21.381		16mm² PVC Green / Yellow Cu Cable	No.	8	13.41	107.28
A21.382		10mm² PVC Green / Yellow Cu Cable	No.	2	10.72	21.44
A21.383		6mm² 1C PVC Green / Yellow Cu Cable	No.	20	5.36	107.20
A21.384		4mm² 1C PVC Green / Yellow Cu Cable	No.	80	4.02	321.60
A21.385		2.5mm² 1C PVC Green / Yellow Cu Cable	No.	80	4.02	321.60
A21.386		1.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	No.	100	4.02	402.00
A21.387		2.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	No.	100	4.02	402.00
A21.388		4mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	No.	60	4.02	241.20
A21.389		6mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	No.	50	5.36	268.00
A21.390		1.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	No.	50	4.02	201.00
A21.391		2.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	No.	50	4.02	201.00
A21.392		4mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	No.	50	4.02	201.00
A21.393		6mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	No.	50	5.36	268.00
	EMCA 21.1 (a)	**Terminating 300/500V PVC single core cable into electrical equipment [plug, light] complete**				
A21.394		6mm² 1C PVC Red	No.	24	5.36	128.64
A21.395		6mm² 1C PVC Black	No.	24	5.36	128.64
					Carried Forward	5 419 548.25

[redacted]

					Brought Forward	5 419 548.25
A21.396		4mm² 1C PVC Red	No.	196	4.02	787.92
A21.397		4mm² 1C PVC Black	No.	196	4.02	787.92
A21.398		2.5mm² 1C PVC Red	No.	500	4.02	2 010.00
A21.399		2.5mm² 1C PVC Black	No.	500	4.02	2 010.00
A21.400		1.5mm² 1C PVC Red	No.	179	4.02	719.58
A21.401		1.5mm² 1C PVC Black	No.	179	4.02	719.58
A21.402	EMCA 21.1 (b)	Supply and delivery to site of cable route markers	Each	10	335.00	3 350.00
A21.403	EMCA 21.1 (c)	Supply and delivery to site of concrete cable slabs	Each	20	134.00	2 680.00
	EMCA 21.1 (d)	Supply and delivery to site of cable trays, ladders and wire trunking				
		316 Stainless Steel heavy duty cable ladder, trunking, welded wire mesh and accessories including all necessary supports, clamps strapping, brackets, reducer splice, hangers, threaded rods, trunking, bolts, nuts and anchor bolts etc as specified				
A21.404		150mm Wide cable ladder	m	58	2 141.88	124 229.04
A21.405		150mm wide 90° Horizontal Bend	Each	4	2 412.03	9 648.12
A21.406		150mm wide 90° Internal elbow (Riser)	Each	4	2 323.59	9 294.36
A21.407		150mm wide 90° External elbow (Dropper)	Each	4	2 323.59	9 294.36
A21.408		150mm wide Tee	Each	4	4 237.14	16 948.56
A21.409		150mm wide 4 Way Cross-over	Each	4	5 740.64	22 962.56
A21.410		300mm Wide cable ladder	m	36	2 384.69	85 848.84
A21.411		300mm wide 90° Horizontal Bend	Each	2	2 862.28	5 724.56
A21.412		300mm wide 90° Internal elbow (Riser)	Each	2	2 524.59	5 049.18
A21.413		300mm wide 90° External elbow (Dropper)	Each	2	2 524.59	5 049.18
A21.414		300mm wide Tee	Each	2	4 984.87	9 969.74
A21.415		300mm wide 4 Way Cross-over	Each	2	6 673.30	13 346.60
A21.416		400mm Wide cable ladder	m	16	2 614.65	41 834.40
A21.417		400mm wide 90° Horizontal Bend	Each	3	3 175.84	9 527.52
A21.418		400mm wide 90° Internal elbow (Riser)	Each	3	2 677.36	8 032.08
					Carried Forward	5 809 372.35

[redacted]

					Brought Forward	5 809 372.35
A21.419		400mm wide 90° External elbow (Dropper)	Each	3	2 677.36	8 032.08
A21.420		400mm wide Tee	Each	3	5 571.80	16 715.40
A21.421		400mm wide 4 Way Cross-over	Each	3	7 179.82	21 539.46
A21.422		150mm Wide cable ladder flat covers	m	58	1 045.21	60 622.18
A21.423		300mm Wide cable ladder flat covers	m	36	1 683.06	60 590.16
A21.424		400mm Wide cable ladder flat covers	m	16	2 090.43	33 446.88
		316 Stainless Steel heavy duty return flange cable tray, trunking, welded wire mesh and accessories including all necessary supports, clamps strapping, brackets, reducer splice, hangers, threaded rods, trunking, bolts, nuts and anchor bolts etc as specified				
A21.425		150mm Wide return flange cable tray	m	40	955.17	38 206.80
A21.426		150mm wide 90° Horizontal Bend	Each	1	731.66	731.66
A21.427		150mm wide 90° Internal elbow (Riser)	Each	1	701.09	701.09
A21.428		150mm wide 90° External elbow (Dropper)	Each	1	701.09	701.09
A21.429		150mm wide Tee	Each	1	956.77	956.77
A21.430		150mm wide 4 Way Cross-over	Each	1	1 149.73	1 149.73
A21.431		200mm Wide return flange cable tray	m	40	1 197.98	47 919.20
A21.432		200mm wide 90° Horizontal Bend	Each	2	935.87	1 871.74
A21.433		200mm wide 90° Internal elbow (Riser)	Each	2	751.75	1 503.50
A21.434		200mm wide 90° External elbow (Dropper)	Each	2	751.75	1 503.50
A21.435		200mm wide Tee	Each	2	1 224.51	2 449.02
A21.436		200mm wide 4 Way Cross-over	Each	2	1 431.14	2 862.28
A21.437		300mm Wide return flange cable tray	m	80	1 415.07	113 205.60
A21.438		300mm wide 90° Horizontal Bend	Each	4	1 198.79	4 795.16
A21.439		300mm wide 90° Internal elbow (Riser)	Each	4	868.33	3 473.32
A21.440		300mm wide 90° External elbow (Dropper)	Each	4	868.33	3 473.32
A21.441		300mm wide Tee	Each	4	1 575.86	6 303.44
A21.442		300mm wide 4 Way Cross-over	Each	4	1 993.95	7 975.80
		316 Stainless Steel heavy duty welded wire mesh cable tray, trunking, welded wire mesh and accessories including all necessary supports,				
					Carried Forward	6 250 101.53

[redacted]

					Brought Forward	6 250 101.53
		clamps strapping, brackets, reducer splice, hangers, threaded rods,trunking, bolts, nuts and anchor bolts etc as specified				
A21.443		150mm Wide welded wire mesh cable tray	m	40	1 005.02	40 200.80
A21.444		150mm wide 90° Horizontal Bend	Each	1	1 334.66	1 334.66
A21.445		150mm wide 90° Internal elbow (Riser)	Each	1	1 072.55	1 072.55
A21.446		150mm wide 90° External elbow (Dropper)	Each	1	1 072.55	1 072.55
A21.447		150mm wide Tee	Each	1	3 199.96	3 199.96
A21.448		150mm wide 4 Way Cross-over	Each	1	5 402.96	5 402.96
A21.449		200mm Wide welded wire mesh cable tray	m	40	1 098.28	43 931.20
A21.450		200mm wide 90° Horizontal Bend	Each	5	1 599.99	7 999.95
A21.451		200mm wide 90° Internal elbow (Riser)	Each	5	1 342.70	6 713.50
A21.452		200mm wide 90° External elbow (Dropper)	Each	5	1 342.70	6 713.50
A21.453		200mm wide Tee	Each	5	3 545.69	17 728.45
A21.454		200mm wide 4 Way Cross-over	Each	5	5 539.64	27 698.20
A21.455		300mm Wide welded wire mesh cable tray	m	80	1 306.52	104 521.60
A21.456		300mm wide 90° Horizontal Bend	Each	4	2 026.11	8 104.44
A21.457		300mm wide 90° Internal elbow (Riser)	Each	4	1 616.06	6 464.24
A21.458		300mm wide 90° External elbow (Dropper)	Each	4	1 616.06	6 464.24
A21.459		300mm wide Tee	Each	4	3 883.37	15 533.48
A21.460		300mm wide 4 Way Cross-over	Each	4	6 576.82	26 307.28
	EMCA 21.1 (h)	Pratley EZEE-Fit with solid cover IP 68 including non sparking connectors, insulating sleeves, identification tag, mounting screws, locknuts , lock out device with lock, lid securing chain, reducers and all accessories				
A21.461		**Box 0**	No.	40	1 150.37	46 014.80
A21.462		Compression Kits (Small)	No.	160	32.43	5 188.80
A21.463		Compression Kits (large)	No.	160	32.43	5 188.80
A21.464		Blanking Plugs	No.	80	20.09	1 607.20
A21.465		**Box 1**	No.	40	1 413.40	56 536.00
A21.466		Reducing Glands [25-20]	No.	80	122.88	9 830.40
A21.467		Compression Kits (Small)	No.	80	70.95	5 676.00
A21.468		Compression Kits (large)	No.	80	70.95	5 676.00
A21.469		Blanking Plugs	No.	80	21.47	1 717.60
					Carried Forward	6 718 000.69

[redacted]

					Brought Forward	6 718 000.69
A21.470		**Box 2**	No.	20	2 154.64	43 092.80
A21.471		Reducing Glands [32-20]	No.	40	166.65	6 666.00
A21.472		Reducing Glands [32-25]	No.	40	197.93	7 917.20
A21.473		Compression Kits	No.	40	45.76	1 830.40
A21.474		Blanking Plugs	No.	40	25.12	1 004.80
A21.475		**Box 3**	No.	10	3 514.71	35 147.10
A21.476		Reducing Glands [40-20]	No.	20	220.34	4 406.80
A21.477		Reducing Glands [40-25]	No.	20	261.74	5 234.80
A21.478		Reducing Glands [40-32]	No.	20	297.56	5 951.20
A21.479		Compression Kits	No.	20	56.71	1 134.20
A21.480		Blanking Plugs	No.	20	38.46	769.20
A21.481		**Box 4**	No.	10	5 001.84	50 018.40
A21.482		Reducing Glands [50-20]	No.	20	318.34	6 366.80
A21.483		Reducing Glands [50-25]	No.	20	365.12	7 302.40
A21.484		Reducing Glands [50-32]	No.	20	418.87	8 377.40
A21.485		Reducing Glands [50-40]	No.	40	490.11	19 604.40
A21.486		Compression Kits	No.	20	72.37	1 447.40
A21.487		Blanking Plugs	No.	20	49.46	989.20
A21.488	EMCA 18.2 (g)	110mm² HDPE kabelflex Sleeves	m	200	209.62	41 924.00
A21.489		160mm² HDPE kabelflex Sleeves	m	120	274.12	32 894.40
A21.490		50mm² HDPE Optex Sleeves	m	120	166.62	19 994.40
						-
		All jointing, Coupling, sealing ring, end plugs, spacer modules bell mouth, mandrel, duct brush to complete the sleeve installation. The following is allowed for under the civil scope:				
A21.491		a) Concrete 1m x 1m x 1m manholes with lids	No.	10	18 812.50	188 125.00
A21.492		b) Drilling under existing road 160mm diameter holes for sleeves	m	20	1 128.75	22 575.00
A21.493	EMCA 21.2 (e)	Supply and delivery to site of cable supports to motors and other electrical equipment	Sum	-	16 125.00	16 125.00
A21.494	EMCA 21.2 (f)	Installation of pump set sensor termination cubicles	No.	1	3 762.50	3 762.50
	PSG 21.2	**INSTALLATION**				
	EMCA 21.2 (a)	**Installation of cables, jointing, terminating materials, all earth wires and cable name tags as per the particular specification**				-
A21.495		120mm² 4C PVC SWA PVC Cu Cable	m	160	73.26	11 721.60
A21.496		35mm² 4C PVC SWA PVC Cu Cable	m	252	42.09	10 606.68
A21.497		25mm² 4C PVC SWA PVC Cu Cable	m	240	38.93	9 343.20
					Carried Forward	7 282 332.97

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					Brought Forward	7 282 332.97
A21.498		10mm² 3C PVC SWA PVC Cu Cable	m	160	33.44	5 350.40
A21.499		6mm² 3C PVC SWA PVC Cu Cable	m	360	31.20	11 232.00
A21.500		4mm² 3C PVC SWA PVC Cu Cable	m	800	23.31	18 648.00
A21.501		2.5mm² 3C PVC SWA PVC Cu Cable	m	356	15.53	5 528.68
A21.502		6mm² 1C PVC Red	m	960	6.63	6 364.80
A21.503		6mm² 1C PVC Black	m	960	6.63	6 364.80
A21.504		4mm² 1C PVC Red	m	2310	5.31	12 266.10
A21.505		4mm² 1C PVC Black	m	2310	5.31	12 266.10
A21.506		2.5mm² 1C PVC Red	m	2500	3.98	9 950.00
A21.507		2.5mm² 1C PVC Black	m	2500	3.98	9 950.00
A21.508		1.5mm² 1C PVC Red	m	800	3.32	2 656.00
A21.509		1.5mm² 1C PVC Black	m	800	3.32	2 656.00
A21.510		1.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	360	3.32	1 195.20
A21.511		2.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	360	3.98	1 432.80
A21.512		4mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	360	5.31	1 911.60
A21.513		6mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	m	360	6.63	2 386.80
A21.514		1.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	100	3.32	332.00
A21.515		2.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	100	3.98	398.00
A21.516		4mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	100	5.31	531.00
A21.517		6mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	m	100	6.63	663.00
A21.518		70mm² PVC Green / Yellow Cu Cable	m	160	14.60	2 336.00
A21.519		25mm² PVC Green / Yellow Cu Cable	m	252	10.61	2 673.72
A21.520		16mm² PVC Green / Yellow Cu Cable	m	240	9.29	2 229.60
A21.521		10mm² PVC Green / Yellow Cu Cable	m	160	7.97	1 275.20
A21.522		6mm² 1C PVC Green / Yellow Cu Cable	m	960	6.63	6 364.80
A21.523		4mm² 1C PVC Green / Yellow Cu Cable	m	2310	5.31	12 266.10
A21.524		2.5mm² 1C PVC Green / Yellow Cu Cable	m	3300	3.98	13 134.00
	EMCA 21.1 (a)	**Enviro Glands Termination material including glands, neoprene shrouds, lugs, insulating materials, cable ties and corrosion proof bolts,**				
					Carried Forward	7 434 695.67

					Brought Forward	7 434 695.67
		washers, spring washers, nuts, etc to terminate the following 600/1000V PVC SWA PVC electrical cables complete.				
A21.525		120mm² 4C PVC SWA PVC Cu Cable	No.	4	199.01	796.04
A21.526		35mm² 4C PVC SWA PVC Cu Cable	No.	8	159.21	1 273.68
A21.527		25mm² 4C PVC SWA PVC Cu Cable	No.	8	145.94	1 167.52
A21.528		10mm² 3C PVC SWA PVC Cu Cable	No.	2	112.78	225.56
A21.529		6mm² 3C PVC SWA PVC Cu Cable	No.	24	99.50	2 388.00
A21.530		4mm² 3C PVC SWA PVC Cu Cable	No.	16	92.87	1 485.92
A21.531		2.5mm² 3C PVC SWA PVC Cu Cable	No.	32	86.24	2 759.68
A21.532		70mm² PVC Green / Yellow Cu Cable	No.	4	19.90	79.60
A21.533		25mm² PVC Green / Yellow Cu Cable	No.	8	15.92	127.36
A21.534		16mm² PVC Green / Yellow Cu Cable	No.	8	13.27	106.16
A21.535		10mm² PVC Green / Yellow Cu Cable	No.	2	10.61	21.22
A21.536		6mm² 1C PVC Green / Yellow Cu Cable	No.	20	7.97	159.40
A21.537		4mm² 1C PVC Green / Yellow Cu Cable	No.	80	6.63	530.40
A21.538		2.5mm² 1C PVC Green / Yellow Cu Cable	No.	80	6.63	530.40
A21.539		1.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	No.	100	6.63	663.00
A21.540		2.5mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	No.	100	6.63	663.00
A21.541		4mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	No.	60	6.63	397.80
A21.542		6mm² 3C PVC ALU PVC [Round Surfix] Cu Cable	No.	50	6.63	331.50
A21.543		1.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	No.	50	6.63	331.50
A21.544		2.5mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	No.	50	6.63	331.50
A21.545		4mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	No.	50	6.63	331.50
A21.546		6mm² 4C PVC ALU PVC [Round Surfix] Cu Cable	No.	50	6.63	331.50
	EMCA 21.1 (a)	**Terminating 300/500V PVC single core cable into electrical equipment [plug, light] complete**				
A21.547		6mm² 1C PVC Red	No.	24	7.97	191.28
A21.548		6mm² 1C PVC Black	No.	24	7.97	191.28
A21.549		4mm² 1C PVC Red	No.	196	6.63	1 299.48
					Carried Forward	7 451 409.95

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					Brought Forward	7 451 409.95
A21.550		4mm² 1C PVC Black	No.	196	6.63	1 299.48
A21.551		2.5mm² 1C PVC Red	No.	500	6.63	3 315.00
A21.552		2.5mm² 1C PVC Black	No.	500	6.63	3 315.00
A21.553		1.5mm² 1C PVC Red	No.	179	5.31	950.49
A21.554		1.5mm² 1C PVC Black	No.	179	5.31	950.49
A21.555	EMCA 21.1 (b)	Installation of cable route markers	Each	10	33.16	331.60
A21.556	EMCA 21.1 (c)	Installation of concrete cable slabs	Each	20	33.16	663.20
	EMCA 21.1 (d)	Installation complete of all cable trays, ladders and wire trunking				
		316 Stainless Steel heavy duty cable ladder, trunking, welded wire mesh and accessories including all necessary supports, clamps strapping, brackets, reducer splice, hangers, threaded rods, trunking, bolts, nuts and anchor bolts etc as specified				
A21.557		150mm Wide cable ladder	m	58	37.95	2 201.10
A21.558		150mm wide 90° Horizontal Bend	Each	4	34.50	138.00
A21.559		150mm wide 90° Internal elbow (Riser)	Each	4	34.50	138.00
A21.560		150mm wide 90° External elbow (Dropper)	Each	4	34.50	138.00
A21.561		150mm wide Tee	Each	4	37.95	151.80
A21.562		150mm wide 4 Way Cross-over	Each	4	43.12	172.48
A21.563		300mm Wide cable ladder	m	36	43.12	1 552.32
A21.564		300mm wide 90° Horizontal Bend	Each	2	39.67	79.34
A21.565		300mm wide 90° Internal elbow (Riser)	Each	2	39.67	79.34
A21.566		300mm wide 90° External elbow (Dropper)	Each	2	39.67	79.34
A21.567		300mm wide Tee	Each	2	43.12	86.24
A21.568		300mm wide 4 Way Cross-over	Each	2	46.57	93.14
A21.569		400mm Wide cable ladder	m	16	46.57	745.12
A21.570		400mm wide 90° Horizontal Bend	Each	3	43.12	129.36
A21.571		400mm wide 90° Internal elbow (Riser)	Each	3	43.12	129.36
A21.572		400mm wide 90° External elbow (Dropper)	Each	3	43.12	129.36
					Carried Forward	7 468 277.51

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					Brought Forward	7 468 277.51
A21.573		400mm wide Tee	Each	3	46.57	139.71
A21.574		400mm wide 4 Way Cross-over	Each	3	50.02	150.06
A21.575		150mm Wide cable ladder flat covers	m	58	25.88	1 501.04
A21.576		300mm Wide cable ladder flat covers	m	36	25.88	931.68
A21.577		400mm Wide cable ladder flat covers	m	16	25.88	414.08
		316 Stainless Steel heavy duty return flange cable tray, trunking, welded wire mesh and accessories including all necessary supports, clamps strapping, brackets, reducer splice, hangers, threaded rods, trunking, bolts, nuts and anchor bolts etc as specified				
A21.578		150mm Wide return flange cable tray	m	40	37.95	1 518.00
A21.579		150mm wide 90° Horizontal Bend	Each	1	34.50	34.50
A21.580		150mm wide 90° Internal elbow (Riser)	Each	1	34.50	34.50
A21.581		150mm wide 90° External elbow (Dropper)	Each	1	34.50	34.50
A21.582		150mm wide Tee	Each	1	37.95	37.95
A21.583		150mm wide 4 Way Cross-over	Each	1	43.12	43.12
A21.584		200mm Wide return flange cable tray	m	40	41.40	1 656.00
A21.585		200mm wide 90° Horizontal Bend	Each	5	37.95	189.75
A21.586		200mm wide 90° Internal elbow (Riser)	Each	5	37.95	189.75
A21.587		200mm wide 90° External elbow (Dropper)	Each	5	37.95	189.75
A21.588		200mm wide Tee	Each	5	41.40	207.00
A21.589		200mm wide 4 Way Cross-over	Each	5	44.85	224.25
A21.590		300mm Wide return flange cable tray	m	80	43.12	3 449.60
A21.591		300mm wide 90° Horizontal Bend	Each	4	39.67	158.68
A21.592		300mm wide 90° Internal elbow (Riser)	Each	4	39.67	158.68
A21.593		300mm wide 90° External elbow (Dropper)	Each	4	39.67	158.68
A21.594		300mm wide Tee	Each	4	43.12	172.48
A21.595		300mm wide 4 Way Cross-over	Each	4	46.57	186.28
		316 Stainless Steel heavy duty welded wire mesh cable tray, trunking, welded wire mesh and accessories including all necessary supports, clamps strapping, brackets, reducer splice, hangers, threaded rods,trunking, bolts, nuts and				
					Carried Forward	7 480 057.55

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					Brought Forward	7 480 057.55
		anchor bolts etc as specified				
A21.596		150mm Wide welded wire mesh cable tray	m	40	49.33	1 973.20
A21.597		150mm wide 90° Horizontal Bend	Each	1	44.85	44.85
A21.598		150mm wide 90° Internal elbow (Riser)	Each	1	44.85	44.85
A21.599		150mm wide 90° External elbow (Dropper)	Each	1	44.85	44.85
A21.600		150mm wide Tee	Each	1	49.33	49.33
A21.601		150mm wide 4 Way Cross-over	Each	1	56.05	56.05
A21.602		200mm Wide welded wire mesh cable tray	m	40	53.81	2 152.40
A21.603		200mm wide 90° Horizontal Bend	Each	5	49.33	246.65
A21.604		200mm wide 90° Internal elbow (Riser)	Each	5	49.33	246.65
A21.605		200mm wide 90° External elbow (Dropper)	Each	5	49.33	246.65
A21.606		200mm wide Tee	Each	5	53.81	269.05
A21.607		200mm wide 4 Way Cross-over	Each	0 5	58.30	291.50
A21.608		300mm Wide welded wire mesh cable tray	m	80	56.05	4 484.00
A21.609		300mm wide 90° Horizontal Bend	Each	4	51.57	206.28
A21.610		300mm wide 90° Internal elbow (Riser)	Each	4	51.57	206.28
A21.611		300mm wide 90° External elbow (Dropper)	Each	4	51.57	206.28
A21.612		300mm wide Tee	Each	4	56.05	224.20
A21.613		300mm wide 4 Way Cross-over	Each	4	46.57	186.28
A21.614	EMCA 21.2 (e)	Installation of cable supports to motors and other electrical equipment	Sum	1	26 875.00	26 875.00
A21.615	EMCA 21.2 (f)	Installation of pump set sensor termination cubicles	No.	1	2 687.50	2 687.50
	EMCA 21.2 (g)	Excavating, back filling, consolidation, importation of soil and dumping of all rock and stone removed during excavations including cleaning of cable routes all according to particular specifications (including hand excavations where necessary along existing cable routes)				
A21.616		a) Pickable soil	m³	56	231.12	12 942.72
A21.617		b) Soft rock	m³	24	274.12	6 578.88
A21.618		c) Hard rock	m³	10	396.68	3 966.80
					Carried Forward	7 544 287.80

					Brought Forward	7 544 287.80
A21.619		Importation of additional soil for the bedding of cables and the backfilling of trenches complete as per particular specification.	m³	34	268.75	9 137.50
A21.620		Dumping and removing of all rock and stone removed during excavations including cleaning of cable routes complete as per particular specification.	m³	34	59.12	2 010.08
A21.621		The restoration of road and paving to the original condition complete	m	250	376.25	94 062.50
A21.622		The restoration of paving to the original condition complete	m	158	268.75	42 462.50
A21.623		Sifting soil through a 4mm mesh size for the bedding of cables and the backfilling of trenches complete as per particular specification.	m³	34	134.38	4 568.92
A21.624		Nett amount for core drilling 100mm diameter holes through 250mm concrete	Each	25	1 775.90	44 397.50
A21.625	EMCA 18.2 (g)	110mm² HDPE kabelflex Sleeves	m	100	209.62	20 962.00
A21.626		160mm² HDPE kabelflex Sleeves	m	60	274.12	16 447.20
A21.627		50mm² HDPE Optex Sleeves	m	50	166.62	8 331.00
A21.628		All jointing, Coupling, sealing ring, end plugs, spacer modules bell mouth, mandrel, duct brush to complete the sleeve installation. The following is allowed for under the civil scope: a) Concrete 1m x 1m x 1m manholes with lids b) Drilling under existing road 160mm diameter	No.	10	18 812.50	188 125.00 - -
A21.629		holes for sleeves	m	25	1 128.75	28 218.75
A21.630	EMCA 21.2 (e)	Supply and delivery to site of cable supports to motors and other electrical equipment	Sum	1	26 875.00	26 875.00
A21.631	EMCA 21.2 (f)	Installation of pump set sensor termination cubicles	No.	1	3 762.50	3 762.50 -
A21.632	PSEMCA 9	Gound penetrating radar and cable detection of all excavations/trenches (Refer to project specification PSEMCA-9)	m	600	1 612.50	967 500.00
A21.633	PSEMCA 9	Detail surveying and plotting of all existing structures within 3m of the propose route proposed by Contractor (Refer to project specification PSEMCA-9)	m	600	376.25	225 750.00
	PSEMCA 9	All new cable routes shall first be planned with information obtained from surveyor and submitted for approval to the Engineer and City of Cape				
					Carried Forward	9 226 898.25

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					Brought Forward	9 226 898.25
A21.634		Town. All shall be completed in AutoCad format and Report for approval from the Engineer (Refer to project specification PSEMCA-9)	Sum	-	6 633.76	6 633.76
	PSEMCA 9	Time related matters for arranging, coordinating, shut down procedure, approval from City of City of Cape Town (Refer to project specification PSEMCA-9)				
A21.635		a) Enginneer rate per hour	hr	40	862.39	34 495.60
A21.636		b) Electrician rate per hour	hr	288	238.81	68 777.28
A21.637		c) Artisan rate per hour	hr	320	159.21	50 947.20
A21.638		d) Labourer rate per hour	hr	96	106.15	10 190.40
A21.639		e) Rate per kilometer	km	600	9.29	5 574.00
A21.640		f) Report printing A4 Black and white	Pages	1600	4.00	6 400.00
A21.641		g) Medium Voltage testing and confimation	No.	10	1 612.50	16 125.00
A21.642		h) Low Voltage testing and confimation	No.	60	2 687.50	161 250.00
A21.643		h) Low Voltage testing and confimation	No.	60	2 687.50	161 250.00
		All of the above time related item shall be submitted weekly to the Engineer for approval.				
	EMCA 21.3	**COMMISSIONING**				
A21.644	EMCA 21.3 (a)	Testing and commissioning of all cables as above mentioned	Sum	-	3 316.88	3 316.88
A21.645	EMCA 21.3 (b)	Updating, verifying and submission of Electronic Cable schedules with Tag numbers and final agreed lengths	Sum	-	3 316.88	3 316.88
A21.646	EMCA 21.3 (c)	Surveyor to mark-up as-built cable route plans and all mark-up-ups must be on AutoCAD format	Sum	-	19 887.50	19 887.50
	ERMU	**DESIGNER / CONTRACTOR SPECIFIC REQUIREMENTS**				
	EMCA	All other items or equipment not included above but which are nevertheless necessary to meet the Scope of Work and/or are required for the proper, safe and effective operation of the plant (Specify)		Item		
		.....				
		.....				
		.....				
		.....				
		.....				
		.....				
		BILL NO. A21 **PORTION A ELECTRICAL**				
		Carried forward to Summary of Bills			**Total**	9 775 062.75

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - B				
		MANAGEMENT BUILDING				
		B1 - Provisional sums and Dayworks				
		PROVISIONAL SUMS				
	SANS 1200 A	**BILL NO. B1** **PROVISIONAL SUMS AND PRIME COST ITEMS (BUILDING WORK)**				
		Note: Provisional sums applicable to the building work are to be priced under relevant Building Works bills of quantities				
		Note: Expenditure under the following provisional sums is for work executed by the Contractor\Sub-contractor or Supplier during the construction phase of the contract. Values paid under these items shall be "nett values excluding discount and VAT". Invoices shall be supplied for each expenditure and attached to the payment certificates.				
		For work to be executed by the Contractor and valued in terms of the "Valuation of Variations" clause in the Conditions of Contract				
		ENGINEERS REQUIREMENTS				
	8.5	(a) .2 Engineers requirements				
B1.1	PSA7.6	.3 Acceptance control testing	Prov sum		50 000.00	50 000.00
B1.2		.4 Overheads, charges and profit on above	%		10%	5 000.00
		WORK TO EXISTING SERVICES				
	8.5	(a) .3 Existing services				
B1.3	PSA7.9	.1 Locating existing services	Prov sum		50 000.00	50 000.00
B1.4		.2 Overheads, charges and profit on above	%		10%	5 000.00
B1.5	PSA7.10	.3 Relocating existing services	Prov sum		100 000.00	100 000.00
B1.6		.4 Overheads, charges and profit on above	%		10%	10 000.00
		NOMINATED SUB-CONTRACTORS				
		GAS INSTALLATION				
B1.7	8.5 PSA7.14	(b) .1 Gas installation	Prov sum		50 000.00	50 000.00
B1.8		.2 Overheads, charges and profit on above	%		10%	5 000.00
		PARTITIONS, ETC				
					Carried Forward	275 000.00

						Brought Forward	275 000.00
B1.9	8.5 PSA7.15	(c) .1 Toilet partitions and shower doors	Prov sum		260 000.00	260 000.00
B1.10		.2 Overheads, charges and profit on above	%		10%	26 000.00
		SKYLIGHTS				
B1.11	8.5 PSA7.16	(d) .1 Skylight installation	Prov sum		260 000.00	260 000.00
B1.12		.2 Overheads, charges and profit on above	%		10%	26 000.00
		SIGNAGE				
B1.13	8.5 PSA7.17	(e) .1 Signage installation	Prov sum		260 000.00	260 000.00
B1.14		.2 Overheads, charges and profit on above	%		10%	26 000.00
		STEEL STAIRCASES				
B1.15	8.5 PSA7.18	(f) .1 Steel staircases	Prov sum		260 000.00	260 000.00
B1.16		.2 Overheads, charges and profit on above	%		10%	26 000.00
		BALUSTRADING				
B1.17	8.5 PSA7.19	(g) .1 Balustrading	Prov sum		260 000.00	260 000.00
B1.18		.2 Overheads, charges and profit on above	%		10%	26 000.00
		PRIME COST ITEMS				
	8.6	Materials for dayworks				
B1.19	PSA8.1	(a) Materials used in the execution of dayworks	PC item		260 000.00	260 000.00
B1.20		(b) Overheads, charges and profit on above	%		10%	26 000.00
		DESIGN, SUPPLY AND INSTALL SERVICES				
		LIFT INSTALLATION				
B1.21	8.5 **PU 8.22**	(r) .1 Passanger lift installation	Sum	-	642 001.12	642 001.12
B1.22		.2 Overheads, charges and profit on above	%		10%	
		BILL NO. B1 **PROVISIONAL SUMS AND PRIME COST ITEMS (BUILDING WORK)**				
		Carried forward to Summary of Bills			**Total**	2 633 001.12

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - B				
		MANAGEMENT BUILDING				
		B1 - Provisional sums and Dayworks				
	SANS 1200 A	**BILL NO. B2**				
		DAYWORKS AND TEMPORARY WORKS (CIVIL WORK)				
	PSC	**Note:** Dayworks executed on instruction of the Engineer only. Supervision of dayworks is not payable under this section and is deemed to be included under Preliminary and General items in 1200A. Daywork sheets shall be delivered to the Engineer at the end of each day for approval, failing this, the Engineer may reject the dayworks.				
		DAYWORKS				
	8.7.1	**LABOUR**				
B2.1		(a) Skilled	hr	1000	87.31	87 310.00
B2.2		(b) Semi-skilled	hr	3000	86.00	258 000.00
B2.3		(c) Un-skilled	hr	5000	58.41	292 050.00
		PLANT HIRE (WORK RATES ON SITE)				
		TRUCKS				
	8.7.2	.1 Tipper trucks (specify capacity)				
B2.4		(a) Capacity_____m³ (small)	hr	500	4.26	2 130.00
B2.5		(b) Capacity_____m³ (medium)	hr	500	5.59	2 795.00
B2.6		(c) Capacity_____m³ (large)	hr	500	6.58	3 290.00
	8.7.2	.2 Off highway dump trucks (specify capacity)				
B2.7		(a) Capacity_____m³ (medium)	hr	500	7.32	3 660.00
B2.8		(b) Capacity_____m³ (large)	hr	500	9.17	4 585.00
	8.7.2	.3 Flatbed trucks (specify capacity)				
B2.9		(a) Capacity_____m³ (small)	hr	500	2.71	1 355.00
B2.10		(b) Capacity_____m³ (medium)	hr	500	5.14	2 570.00
B2.11		(c) Capacity_____m³ (large)	hr	500	6.58	3 290.00
		LDV'S				
	8.7.2	.4 LDV (specify size)				
B2.12		(a) LDV_____ton	km	5000	3.84	19 200.00
		WATER TANKERS				
	8.7.2	.5 Water tankers (specify capacity)				
B2.13		(a) Capacity_____liter (small, towable)	hr	500	0.87	435.00
B2.14		(b) Capacity_____liter (medium)	hr	500	4.26	2 130.00
					Carried Forward	682 800.00

					Brought Forward	682 800.00
B2.15		(c) Capacity_____liter (large)	hr	500	5.48	2 740.00
		LOADERS				
	8.7.2	.6 Wheel loaders (specify capacity)				
B2.16		(a) Capacity_____m³ (small)	hr	500	3.38	1 690.00
B2.17		(b) Capacity_____m³ (medium)	hr	500	6.46	3 230.00
B2.18		(c) Capacity_____m³ (large)	hr	500	8.62	4 310.00
		GRADERS				
	8.7.2	.7 Motor graders (specify model/kw)				
B2.19		(a) Model _____/_____kw	hr	500	14.43	7 215.00
		BULLDOZERS				
	8.7.2	.8 Bulldozers (specify model/mass/kw)				
B2.20		(a) Model____/_____/kg____kw (small)	hr	500	9.91	4 955.00
B2.21		(b) Model____/_____/kg____kw (medium)	hr	500	11.15	5 575.00
B2.22		(c) Model____/_____/kg____kw (large)	hr	500	22.29	11 145.00
		EXCAVATORS				
	8.7.2	.9 Crawler excavators (specify model/mass/kw)				
B2.23		(a) Model____/_____/kg____kw (small)	hr	500	3.29	1 645.00
B2.24		(b) Model____/_____/kg____kw (medium)	hr	500	7.79	3 895.00
B2.25		(c) Model____/_____/kg____kw (large)	hr	500	10.17	5 085.00
		TLB'S				
	8.7.2	.10 Tractor loader backhoe (TLB)(specify model)				
B2.26		(a) Model_____	hr	1000	4.50	4 500.00
		RIDE-ON ROLLERS				
	8.7.2	.11 Self propelled vibrating rollers (smooth drum) (specify mass)				
B2.27		(a) Mass_____kg (medium)	hr	500	2.13	1 065.00
B2.28		(b) Mass_____kg (large)	hr	500	5.48	2 740.00
	8.7.2	.12 Self propelled vibrating rollers (padfoot) (specify mass)				
B2.29		(a) Mass_____kg (medium)	hr	500	5.48	2 740.00
B2.30		(b) Mass_____kg (large)	hr	500	7.91	3 955.00
		WALK BEHIND ROLLERS				
	8.7.2	.14 Walk behind vibrating rollers (specify model)				
B2.31		(a) Model_____(BW 61) (small)	hr	500	1.15	575.00
B2.32		(b) Model_____(BW 76) (medium)	hr	500	1.27	635.00
					Carried Forward	750 495.00

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					Brought Forward	750 495.00
B2.33		(c) Model_____(BW 90) (large)	hr	500	1.43	715.00
		COMPACTORS				
	8.7.2	.15 Plate compactors (specify model)				
B2.34		(a) Model_____	hr	500	0.99	495.00
	8.7.2	.16 Wackers (specify model)				
B2.35		(a) Model_____	hr	500	1.33	665.00
		COMPRESSORS				
	8.7.2	.18 Portable diesel compressors (specify capacity)				
B2.36		(a) Capacity_____cfm (small)	hr	500	3.80	1 900.00
B2.37		(b) Capacity_____cfm (medium)	hr	500	0.92	460.00
B2.38		(c) Capacity_____cfm (large)	hr	500	14.78	7 390.00
		WATERPUMPS				
	8.7.2	.19 Waterpump (specify capacity)				
B2.39		(a) Capacity_____ liter/sec (small)	hr	500	1.17	585.00
B2.40		(b) Capacity_____ liter/sec (medium)	hr	500	1.72	860.00
B2.41		(c) Capacity_____ liter/sec (large)	hr	500	3.44	1 720.00
		GENERATORS				
	8.7.2	.21 Mobile generator set (specify KVA)				
B2.42		(a) _____KVA (small)	hr	500	0.92	460.00
B2.43		(b) _____KVA (medium])	hr	500	1.15	575.00
B2.44		(c) _____KVA (large)	hr	500	1.84	920.00
		TRANSPORT (COST TO AND FROM SITE)				
		Note: Distance shall be measured one way only (tender rates shall include for transport in both directions to and from site)				
	8.7.3	.1 Low bed				
B2.45		(a) Low-bed (suitable for the largest piece of equipment above)	km	5000	0.33	1 650.00
	8.7.3	.2 Tipper truck				
B2.46		(a) Small	km	500	0.21	105.00
B2.47		(b) Medium	km	500	0.23	115.00
B2.48		(c) Large	km	500	0.27	135.00
	8.7.3	.3 Flatbed truck				
B2.49		(a) Small	km	500	0.16	80.00
B2.50		(b) Medium	km	500	0.21	105.00
					Carried Forward	769 430.00

					Brought Forward	769 430.00
B2.51		(c) Large	km	500	0.26	130.00
	8.7.3	.4 Water tanker				
B2.52		(a) Small	km	500	0.21	105.00
B2.53		(b) Medium	km	500	0.21	105.00
B2.54		(c) Large	km	500	0.21	105.00
		EXISTIG SERVICES				
		EXISTING SERVICES				
	8.8.4	Existing services				
B2.55		(a) Supply or hire specialist equipment for the detection of services	sum	-	-	Included
B2.56		(b) The use of equipment referred to above	day	50	785.82	39 291.00
B2.57		(c) Excavation by hand in soft material to expose services	m^3	2000	5.04	10 080.00
		Carried forward to Summary of Bills			**Total**	819 246.00

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - B				
		MANAGEMENT BUILDING				
		B2 - Earthworks				
		BILL NO. B3 **EARTHWORKS - GZB**				
		CIVIL WORKS				
	SANS 1200 C	**SITE CLEARANCE**				
	PSC	**CLEAR SITE**				
	8.2.1.a	Clear and grub area for the following construction activity, and dispose of all material off site at a spoil site established by the Contractor				
B3.1		3. Platforms	m^2	600	2.94	1 764.00
	8.2.2	Remove and grub large trees and tree stumps, including filling in of holes, levelling of site and compaction, with trees of following girth, and dispose of material off site at a spoil site established by the Contractor				
B3.2		a) Exceeding 1m and up to and including 2m girth	no	5	541.46	2 707.30
	SANS 1200 C	**REMOVE EXISTING STRUCTURES**				
		REMOVAL OF EXISTING STRUCTURES Take down existing structures and stockpile usable material to be re-used on site designated by the Engineer and protect from damage and theft (re-erection measured elsewhere). Unsuitable material to be spoiled off site at a site established by the Contractor				
	8.2.12	Precast concrete palisade fencing				
B3.3		a) Precast concrete palisade fence 1,8 m high	m	10	30.17	301.70
B3.4		b) Diamond mesh fence 1,8 m high	m	200	19.96	3 992.00
	SANS 1200 C	**REMOVE EXISTING SERVICES**				
		REMOVE EXISTING SERVICES Removal of underground services as follows				
	8.2.7.a	Dismantle remove and spoil pipelines, powerlines, cables, etc (excavation, backfilling and removal of concrete, etc measured (elswhere) including necessary precautions applying to hazardous materials, etc				
					Carried Forward	8 765.00

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					Brought Forward	8 765.00
B3.5		.1 100 mm asbestos cement water pipeline	m	110	33.95	3 734.50
B3.6		.2 250 mm asbestos cement re-use pipeline	m	110	57.23	6 295.30
		REMOVE EXISTING STRUCTURES				
		Demolish and spoil material for structures, buildings, etc at a spoil site established by the Contractor				
	8.2.8.a	Sundry structures, etc				
B3.7		.3 Mass concrete structures	m^3	2	792.45	1 584.90
B3.8		.4 Reinforced concrete structures	m^3	20	914.69	18 293.80
B3.9		.5 150 mm thick concrete paving	m^2	10	71.98	719.80
B3.10		.6 Building rubble, trees, etc	m^3	8	124.03	992.24
	SANS 1200 DM	**ROADBED IN POOR SOIL CONDITIONS**				
	PSDM	**ROADBED IN POOR SOIL CONDITIONS**				
	8.3.3	Roadbed preparation and compaction of material consisting of roller compaction with				
		Note: scarifying 200 mm deep, watering up to saturation				
B3.11		.1 10 Roller pass compaction with 10 ton padfoot vibratory roller below filling for soil mattresses, etc	m^2	2400	9.51	22 824.00
	SANS 1200 D	**EARTHWORKS**				
	PSD	**Shoring** Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard				
		Dewatering Dewatering of earthworks will not be measured separately and shall be included in SANS 1200A reference 8.3.2.2.(h) in the Preliminary and General bill				
	8.3.2.a.1	Excavate in all materials and spoil off site at a site established by the Contractor for				
B3.12		.1 Platforms (soil rafts)	m^3	300	126.55	37 965.00
	8.3.2.a.2	Excavate in all materials and stockpile on site for				
B3.13		.1 Platforms (soil rafts)	m^3	5400	65.33	352 782.00
					Carried Forward	453 956.54

[redacted]

					Brought Forward	453 956.54
	8.3.2.a.3	Excavate in all materials and use as fill over site, compacted to 90% mod AASHTO density for				
B3.14		.1 Filling to existing redundant ponds on site	m³	2200	102.11	224 642.00
B3.15		.2 Levelling over site	m³	60	81.66	4 899.60
	8.3.2.a.4	Excavate in all materials and use as fill over site, compacted to 98% mod AASHTO density for				
B3.16		.1 Platforms (soil rafts)	m³	50	102.11	5 105.50
B3.17		.2 Levelling over site	m³	30	86.20	2 586.00
		EARTHWORKS WITH SAND MATERIAL FROM SITE				
	8.3.2.a.7	Excavate in all materials and use as fill over site, compacted to 100% mod AASHTO density for				
B3.18		.1 Platforms (soil rafts)	m³	120	102.11	12 253.20
B3.19		.2 Levelling over site	m³	90	81.66	7 349.40
	SANS 1200 ME	**EARTHWORKS WITH MODIFIED MATERIAL**				
	PSME	**SUPPLY OF MATERIAL**				
	8.3.3.5	Extra over reference 8.3.2.(a) (b) & c) for the supply of the following material supplied by the Contractor from commercial sources for modifying excavated material from site (mechanical modification measured under reference 8.3.5. a) (elsewhere) of the following quality				
B3.20		a) G7 material	m³	50	248.89	12 444.50
B3.21		b) G5 material	m³	50	259.05	12 952.50
		PROCESSING				
	8.3.3.5	Process layerwork material by the following process				
B3.22		c) Mechanical modification	m³	50	55.36	2 768.00
	SANS 1200 D	**EARTHWORKS WITH COMMERCIAL MATERIAL**				
	PSD	**EARTHWORKS WITH COMMERCIAL MATERIAL**				
		Extra over reference 8.3.2. above for constructin filling with material supplied by the Contractor from commercial sources of the following quality				
	8.3.4.a	G7 material in				
					Carried Forward	738 957.24

[redacted]

					Brought Forward	738 957.24
B3.23		.2 Platforms compacted to 98% mod AASHTO density	m^3	150	296.45	44 467.50
		EARTHWORKS WITH MATERIAL STOCKPILED ON SITE				
		The following work is to be constructed with stockpiled material on site (including material stockpiled outside the site perimeter fence - as indicated on the pre-tender site inspection) from previous contracts, and must be loaded and hauled to the place of use, including all haul, accommodation of traffic and complying to all requirements on site as specified				
	8.3.4.1	Crushed stone material and compacted to 98% mod AASHTO density				
B3.24		.1 Platforms (soil rafts)	m^3	120	81.68	9 801.60
	8.3.4.1	Gravel and soil material and compacted to 98% mod AASHTO density				
B3.25		2. Platforms (soil rafts)	m^3	4400	81.68	359 392.00
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
		RESTRICTED EXCAVATIONS Note: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
B3.26		.1 strip foundation	m^3	225	157.80	35 505.00
B3.27		.2 Column bases, lift pit, etc	m^3	65	218.23	14 184.95
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
	8.3.9.a	Extra over reference 8.3.3 a for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
B3.28		.1 Alongside walls in foundations	m^3	590	-	-
B3.29		.2 Under floors	m^3	430	-	-
		COMMERCIAL MATERIAL				
					Carried Forward	1 202 308.29

[redacted]

					Brought Forward	1 202 308.29
	8.3.4.b	Extra over reference 8.3.3.a for backfill or for fill with G5 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density				
B3.30		.1 Under floors	m^3	220	356.41	78 410.20
		BILL NO. B3 **EARTHWORKS - GZB**				
		Carried forward to Summary of Bills			**Total**	1 280 718.49

[redacted]

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - B				
		MANAGEMENT BUILDING				
		B3 - Water and sewer connections				
		BILL NO. B4 **WATER AND SEWER CONNECTIONS**				
	SANS 1200D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for:				
B4.1		1 Chambers and manholes	m³	36	201.44	7 251.84
	SANS 1200DB	**EARTHWORKS (Pipe trenches)**				
	8.3.2	Excavate in all material for trenches, backfill and compact to 90% mod AASHTO desnity, and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches				
	8.3.2.a.1	Up to 0.8 m wide				
B4.2		i) 0,00 m - 1,00 m depth	m³	100	286.91	28 691.00
B4.3		ii) 1,01 m - 1,50 m depth	m³	190	326.76	62 084.40
B4.4		iii) 1,51 m - 2,00 m depth	m³	80	406.46	32 516.80
		EXISTING SERVICES (that intersect or adjoin a pipe trench				
	8.3.5	a) Services that intersect a trench				
		i) Sewers				
B4.5		.1 100 mm dia	no	1	503.55	503.55
		ii) Water and recycle water pipes				
B4.6		.1 100 mm dia - 300 mm dia	no	2	503.55	1 007.10
		iii) Electrical				
B4.7		.1 11 Kw cable	no	1	503.55	503.55
	8.3.5	Existing services that intersect or adjoin a pipe trench				
	8.3.5.b	Services that adjoin a trench				
					Carried Forward	132 558.24

[redacted]

					Brought Forward	132 558.24
		1 Stormwater pipes				
B4.8		1 450 mm dia	m	10	125.89	1 258.90
	SANS 1200LB	**BEDDING**				
		FROM EXCAVATIONS				
	8.2.1	Provision of bedding material from trench excavations, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
B4.9		a) Selected granular material	m³	17	97.37	1 655.29
B4.10		b) Selected fill material	m³	85	97.37	8 276.45
		FROM COMMERCIAL SOURCES				
	8.2.2.3	Provision of bedding material by importation from commercial sources selected by the Contractor				
B4.11		a) Selected granular material	m³	5	356.41	1 782.05
B4.12		b) Selected fill material	m³	20	379.55	7 591.00
		SUNDRIES				
	8.2.4	Class 20/19 concrete for pipe thrust blocks				
B4.13		(a) pipe thrust blocks	m³	1	2 159.14	2 159.14
B4.14		(b) encacing of pipes	m³	3	2 089.80	6 269.40
	SANS 1200L	**SCHEDULE - MEDIUM - PRESSURE PIPELINE**				
	8.2.1	Supply, lay, joint, bed (flexible pipe bedding) and test water pipes				
		uPVC pipelines, Class 12				
B4.15		i) 75 mm dia	m	10	96.92	969.20
	8.2.2	Type 4 HDPE, Class 12 pipes for water reticulation Rate to include for all bends, cut lengths, couplings, tees reducers, etc				
B4.16		i) 63 mm dia	m	45	86.76	3 904.20
B4.17		ii) 40 mm dia	m	60	51.45	3 087.00
B4.18		iii) 25 mm dia	m	30	37.76	1 132.80
					Carried Forward	170 643.67

					Brought Forward	170 643.67
	8.2.3	Supply and bedding of specials complete with couplings				
		Saddles				
B4.19		i) 75 mm dia with 63 mm dia drilling on uPVC pipe	no	1	839.36	839.36
B4.20		Stand pipe with tap garden hose connection clamped to concrete or brick wall or fixed on to MS iron dropper, complete as shown on drawing 3089.00.00.DET.14.D005	no	3	1 664.64	4 993.92
	8.2.4	Stop cock chamber complete as shown on drawing 3089.00.00.DET.14.D005				
B4.21		i) for 63mm dia. Bronze globe valve	no	1	2 694.49	2 694.49
B4.22	8.2.11	Soilcrete backfill with 5% OPC for pipelines where vehicle traffic is expected. Top 500 mm of trench at positions to be determined by Engineer on site.	m^3	2	1 191.52	2 383.04
	SANS 1200LD	**SEWERS**				
	8.2.1	Supply, lay, joint, bed sewer pipes and test Class 34 uPVC heavy duty pipe in accordance to SANS 1601 or similar and approved				
B4.23		i) 160 mm dia	m	25	216.72	5 418.00
B4.24		ii) 110 mm dia	m	125	127.50	15 937.50
	8.2.2	Extra over item 8.2.1 for specials				
B4.25		i) 110 mm dia Junction plain 45° with access	no	12	95.89	1 150.68
B4.26		ii) 110 mm dia Rodding eye 45° complete as shown on CoCT drawing S3	no	4	575.12	2 300.48
	8.2.3	Manholes				
		Precast concrete ring type sewer manhole with cover slab, spacers and manhole cover and frame. Refer detail drawing S1 and SW11A				
		Note: Rate to include for water tight joints				
		Manhole depths as follows				
B4.27		i) 1.25 m - 1.50 m	no	1	26 523.41	26 523.41
B4.28		ii) 1.50 m - 1.75 m	no	2	27 028.66	54 057.32
B4.29		iii) 1.75 m - 2,00 m	no	1	28 028.41	28 028.41
					Carried Forward	314 970.28

[redacted]

					Brought Forward	314 970.28
		MISCELLANEOUS				
B4.30		1. Break through concrete ring type manhole wall to suit new 160 mm dia uPVC pipe. Repair watertight after pipe installation	no	1	2 535.92	2 535.92
		BILL NO. B4 **WATER AND SEWER CONNECTIONS**				
		Carried forward to Summary of Bills			**Total**	317 506.20

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - B				
		MANAGEMENT BUILDING				
		B4 - Site works				
		BILL NO. B5 **MANAGEMENT BUILDING PARKING - SUA**				
		CLEAR SITE				
	SANS 1200 C	**CLEAR SITE**				
	PSC 8.2.1	(a) Clear and grub area for the following construction activity, and dispose of all material off site at a spoil site established by the Contractor				
B5.1		.2 Roads servitudes	m²	2000	29.41	58 820.00
	SANS 1200 C	**REMOVE TREES**				
	8.2.2	Remove and grub large trees and tree stumps, including filling in of holes, levelling of site and compaction, with trees of the following girth, and dispose of material off site at a spoil site established by the Contractor				
B5.2		(a) Exceeding 1m and up to and including 2m girth	no	2	541.46	1 082.92
B5.3		(b) Exceeding 2m and up to and including 3m girth	no	2	789.27	1 578.54
		TOPSOIL				
	SANS 1200 C	**TOPSOIL**				
	8.2.10	(a) Remove topsoil to a depth of 150mm and				
B5.4		.1 Stockpile on site and maintain	m³	100	59.55	5 955.00
B5.5		.2 Spoil off site at spoil site established by the Contractor	m³	100	59.55	5 955.00
	SANS 1200 C	**REMOVE EXISTING STRUCTURES**				
		Demolish and spoil material for structures, buildings, etc at a spoil site established by the Contractor				
	8.2.8	(a) Sundry structures, etc				
B5.6		.3 Mass concrete structures	m³	5	792.45	3 962.25
B5.7		.4 Reinforced concrete structures	m³	5	914.69	4 573.45
B5.8		.5 150mm Thick concrete paving	m²	20	224.53	4 490.60
B5.9		.6 150mm Thick reinforced concrete paving	m²	20	242.86	4 857.20
B5.10		.7 Concrete kerbing (all types and sizes)	m	50	73.28	3 664.00
B5.11		.8 Mass brickwork structures	m³	5	124.03	620.15
					Carried Forward	95 559.11

[redacted]

					Brought Forward	95 559.11
		EXISTING SERVICES				
	SANS 1200 D	**EXISTING SERVICES**				
	PSD 8.3.8	.2 Dealing with services that are at risk because of construction of earthworks (other than trenching)				
		(a) Type of service				
B5.12		.1 Electric cable	no	3	-	Included
B5.13		.2 Water pipelines	no	3	-	Included
B5.14		.3 Sewer pipelines	no	3	-	Included
B5.15		(b) .4 600 mm dia sewer main (2 no)	m	90	-	Included
		ROADBED				
	SANS 1200 DM	**ROADBED**				
	8.3.3	(a) Roadbed preparation and compaction of soil to				
B5.16		.3 300mm Minimum of 93% mod AASHTO density below roads	m³	430	73.82	31 742.60
B5.17		.4 150mm Minimum of 93% mod AASHTO density below sidewalks, islands, etc	m³	50	73.82	3 691.00
	8.3.3	(a) Roadbed preparation and compaction of sand to				
B5.18		.6 300mm Minimum of 100% mod AASHTO density below roads	m³	430	73.82	31 742.60
B5.19		.7 150mm Minimum of 100% mod AASHTO density below sidewalks, islands, etc	m³	50	73.82	3 691.00
		ROADBED IN POOR SOIL CONDITIONS				
	SANS 1200 DM	**ROADBED IN POOR SOIL CONDITIONS**				
	PSDM	Roadbed preparation and compaction of material consisting of roller compaction with				
B5.20		.5 20 Ton padfoot vibratory roller below roads, etc	m²-pass	500	1.26	630.00
		CUT OR BORROW TO FILL				
	SANS 1200 DM	**CUT OR BORROW TO FILL**				
		Cut or borrow to fill				
	8.3.4	(a) Excavate from road prism, select, load, transport to point of use and fill over site				
B5.21		.2 Compacted to 95% mod AASHTO density	m³	300	86.22	25 866.00
					Carried Forward	192 922.31

[redacted]

					Brought Forward	192 922.31
	8.3.4	(b) Excavate from road prism, select, load, transport to point of use and fill below and alongside roads				
B5.22		.5 Compacted to 95% mod AASHTO density	m³	300	86.22	25 866.00
		COMMERCIAL MATERIAL				
	SANS 1200 DM	**COMMERCIAL MATERIAL**				
		Construct filling over site, below roads or alongside roads with material supplied by the Contractor from commercial sources of the following quality				
	8.3.4	(c) G7 material				
B5.23		.2 Compacted to 95% mod AASHTO density	m³	100	291.17	29 117.00
	8.3.4	(c) G5 material				
B5.24		.5 Compacted to 95% mod AASHTO density	m³	100	301.33	30 133.00
		COMMERCIAL DUMP ROCK				
	SANS 1200 DM	**COMMERCIAL DUMP ROCK**				
	8.3.4	(d) Construct dump rock layer with material supplied by the Contractor from commercial sources of suitable size, quality and grading				
B5.25		.1 Dump rock layer 300mm thick placed in position and compacted with 10 pass 10 ton roller compaction below roads	m³	50	445.24	22 262.00
		LAYERWORKS FROM EXCAVATION				
	SANS 1200 DM	**LAYERWORKS FROM EXCAVATION**				
		Excavate from road prism, select, load, transport to point of use and construct layerworks as follows				
		Selected layers				
	8.3.5	(b) Compacted to 95% mod AASHTO density				
B5.26		.2 150mm Thick in roads	m³	100	106.35	10 635.00
B5.27		.3 150mm Thick below sidewalks, islands, etc	m³	50	106.35	5 317.50
		LAYERWORKS WITH COMMERCIAL MATERIAL				
	SANS 1200 DM	**LAYERWORKS WITH COMMERCIAL MATERIAL**				
		Construct layerworks with material supplied by the Contractor from commercial sources of the following quality				
	8.3.5	(e) G7 Selected layers				
		.2 Compacted to 95% mod AASHTO density				
					Carried Forward	316 252.81

					Brought Forward	316 252.81
B5.28		.2 150mm Thick in roads	m³	100	304.25	30 425.00
B5.29		.3 150mm Thick below sidewalks, islands, etc	m³	50	355.24	17 762.00
		ROCK EXCAVATION				
	SANS 1200 DM	**ROCK EXCAVATION**				
	8.3.6	Extra over reference 8.3.4 and 8.3.5 for excavating and breaking down material in				
B5.30		(b) Hard rock excavation	m³	10	1 205.68	12 056.80
		CUT TO SPOIL				
	SANS 1200 DM	**CUT TO SPOIL**				
	8.3.7	Cut from site and spoil off site at spoil site established by the Contractor from				
B5.31		(a) Soft excavation	m³	300	126.55	37 965.00
B5.32		(c) Hard rock excavation	m³	5	774.09	3 870.45
		CUT TO STOCKPILE				
	SANS 1200 DM	**CUT TO STOCKPILE**				
	8.3.7	Cut from site or road box cut to stockpile on site from				
B5.33		(f) Soft excavation	m³	200	68.96	13 792.00
		REMOVE OVERSIZE MATERIAL				
	SANS 1200 DM	**REMOVE OVERSIZE MATERIAL**				
	8.3.8	Removal of oversize material (only applicable to earthworks from site - not for commercial material supplied) and spoil off site at site established by the Contractor				
B5.34			m³	10	774.09	7 740.90
		CABLE DUCTS				
	SANS 1200 DB	**TRENCHING**				
	PSDB	Excavate in all materials, backfill and compact to 90% mod AASHTO density, and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches				
	8.3.2	(a) .1 Up to 0.8m wide				
B5.35		.2 Over 1m and up to 2m deep	m	50	108.54	5 427.00
	8.3.2	(b) Extra over reference 8.2.2 (a) for				
B5.36		.2 Hard rock excavation	m³	2	803.79	1 607.58
	SANS 1200 DB	**DEFICIENCY MATERIAL**				
					Carried Forward	446 899.54

					Brought Forward	446 899.54
		Excavation ancillaries				
	8.3.3.1	.1 Make up deficiency in backfill material, including disposing of unsuitable material off site at a site established by the Contractor				
		Note: Payment of commercial deficiency in backfill material will only be paid if instructed by the Engineer				
B5.37		(a) From other necessary excavations on site	m³	10	56.73	567.30
B5.38		(c) By importation of G7 material from commercial sources selected by the Contractor	m³	10	248.89	2 488.90
		CABLE DUCTS				
	SANS 1200 LC	**CABLE DUCTS**				
	PSLC 8.2.5	(a) Supply, lay, bed, and prove Kabelflex ducts including providing draw wires complete				
B5.39		.1 110mm Diameter	m	25	71.96	1 799.00
B5.40		.2 160mm Diameter	m	25	202.04	5 051.00
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 6 ducts including providing draw wires complete				
B5.41		.5 110mm Diameter	m	25	80.68	2 017.00
B5.42		.6 160mm Diameter	m	25	210.76	5 269.00
	8.2.5	(d) uPVC end caps to ducts				
B5.43		.1 110mm Duct	no	6	31.18	187.08
B5.44		.2 160mm Duct	no	6	31.18	187.08
		BEDDING				
	SANS 1200 LC	**FROM TRENCH EXCAVATIONS**				
	8.2.6	(a) Provision of bedding material from trench excavations, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
B5.45		(a) Selected granular material	m³	5	97.37	486.85
B5.46		(b) Selected fill material	m³	5	97.37	486.85
	SANS 1200 LC	**FROM OTHER EXCAVATIONS**				
	8.2.6	(b) Provision of bedding material by importation from other necessary excavations within the freehaul distance, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
						465 439.60

[redacted]

						465 439.60
B5.47		(a) Selected granular material	m³	5	158.27	791.35
B5.48		(b) Selected fill material	m³	5	158.27	791.35
	SANS 1200 LC	**FROM COMMERCIAL SOURCES**				
	8.2.6	(c) Provision of bedding material by importation from commercial sources selected by the Contractor				
B5.49		(a) Selected granular material	m³	10	346.26	3 462.60
B5.50		(b) Selected fill material	m³	10	346.26	3 462.60
		SUNDRIES				
	SANS 1200 LC	**KERB MARKINGS**				
	8.2.8	(b) Inscribed and painted marking on kerbing				
B5.51		.1 Kerb marking	no	6	86.00	516.00
		SOILCRETE				
	SANS 1200 LC	**SOILCRETE**				
		Soilcrete (5% OPC)				
B5.52		.1 Backfilling around pipes	m³	5	1 191.52	5 957.60
		SUBBASE				
	SANS 1200 ME	**LAYERWORKS WITH COMMERCIAL MATERIAL**				
	PSME	Construct layerworks with material supplied by the Contractor from commercial sources of the following quality				
		G5 Subbase layers				
	8.3.3	.1 .3 Compacted to 95% mod AASHTO density				
B5.53		.2 150mm Thick in roads	m³	430	332.87	143 134.10
B5.54		.3 150mm Thick below sidewalks, islands, etc	m³	50	365.40	18 270.00
		PROCESSING				
	SANS 1200 ME	**PROCESSING**				
		Process layerwork material by the following process				
B5.55	8.3.5	(d) Stabilization (all layer thicknesses)	m³	430	73.82	31 742.60
		STABLILZATION				
	SANS 1200 ME	**STABILIZATION**				
	8.3.8	Stabilizing agent				
B5.56		(b) Portland cement	ton	25	1 692.05	42 301.25
					Carried Forward	715 869.05

[redacted]

					Brought Forward	715 869.05
		BASE				
	SANS 1200 MF	**LAYERWORKS WITH COMMERCIAL MATERIAL**				
	PSMF	Construct layerworks with material supplied by the Contractor from commercial sources of the following quality				
		G4 Graded crushed stone base				
	8.3.3	(a) .1 Compacted to 98% mod AASHTO density				
B5.57		.2 150mm Thick in roads	m³	100	554.34	55 434.00
		G2 Graded crushed stone base				
	8.3.3	(b) .3 Compacted to 88% apparent density				
B5.58		.2 150mm Thick in roads	m³	275	629.55	173 126.25
		ASPHALT				
	SANS 1200 MH	**PRIME**				
	PSMH 8.5.1	Prime coat using				
B5.59		.1 MC-30 cut-back bitumen	liter	1950	23.70	46 215.00
	SANS 1200 MH	**TACK COAT**				
	8.5.3	Tack coat using				
B5.60		.1 30% Cationic stable grade emulsion	liter	1100	6.73	7 403.00
		ASPHALT SURFACING				
	SANS 1200 MH	**ASPHALT SURFACING**				
	8.5.4	.2 .1 Continuously graded medium asphalt with 50/70 penetrating grade bitumen binder				
B5.61		.2 30mm Thick	m²	2500	129.73	324 325.00
		CORE DRILLING				
	SANS 1200 MH	**CORE DRILLING**				
B5.62		100mm Dia cores in asphalt paving and testing	no	10	368.94	3 689.40
		SAW CUTTING				
	SANS 1200 MH	**SAW CUTTING**				
		Saw-cutting of asphalt base or paving				
B5.63		.02 30mm Thick asphalt surfacing	m	50	13.61	680.50
		EDGE RESTRAINTS				
					Carried Forward	1 326 742.20

					Brought Forward	1 326 742.20
	SANS 1200 MJ	**EDGE RESTRAINTS**				
	PSMJ 8.2.1	.1 [illegible]				
B5.64		.1 Straight sections	m	10	92.59	925.90
B5.65		.2 Circular sections	m	10	92.59	925.90
		PRECAST CONCRETE PAVING				
	SANS 1200 MJ	**CONCRETE PAVING**				
		Grey interlocking precast concrete paving blocks type SA.				
	8.2.2	.1 Class 25 concrete paving blocks				
B5.66		.1 60mm Paving blocks to roads	m²	100	265.80	26 580.00
B5.67		.2 60mm Paving blocks to sidewalks	m²	50	265.80	13 290.00
B5.68		.3 80mm Paving blocks to roads	m²	50	275.64	13 782.00
		KERBING, CHANNELLING, ETC				
	SANS 1200 MK	**PRECAST CONCRETE KERBING**				
	PSMK	Supply and install precast concrete kerbing				
	8.2.1	(a) .1 MK5 kerbing				
B5.69		.1 Straight sections	m	400	281.56	112 624.00
B5.70		.2 Curved sections, radius over 20m	m	20	281.56	5 631.20
B5.71		.3 Curved sections, radius over 4m, but up to and including 20m	m	10	442.61	4 426.10
B5.72		.4 Curved sections, radius over 1m, but up to and including 4m	m	10	442.61	4 426.10
	8.2.1	(a) .2 BK2 kerbing				
B5.73		.1 Straight sections	m	50	229.27	11 463.50
B5.74		.2 Curved sections, radius over 20m	m	20	229.27	4 585.40
B5.75		.3 Curved sections, radius over 4m, but up to and including 20m	m	10	332.59	3 325.90
B5.76		.4 Curved sections, radius over 1m, but up to and including 4m	m	10	332.59	3 325.90
	8.2.1	(a) .5 E3 kerbing				
B5.77		.1 Straight sections	m	20	226.03	4 520.60
B5.78		.2 Curved sections, radius over 20m	m	10	226.03	2 260.30
					Carried Forward	1 538 835.00

[redacted]

					Brought Forward	1 538 835.00
B5.79		.3 Curved sections, radius over 4m, but up to and including 20m	m	10	226.03	2 260.30
B5.80		.4 Curved sections, radius over 1m, but up to and including 4m	m	10	226.03	2 260.30
	8.2.1	(a) .7 MK10 kerbing				
B5.81		.1 Straight sections	m	50	246.10	12 305.00
B5.82		.2 Curved sections, radius over 20m	m	20	246.10	4 922.00
B5.83		.3 Curved sections, radius over 4m, but up to and including 20m	m	10	274.23	2 742.30
B5.84		.4 Curved sections, radius over 1m, but up to and including 4m	m	10	274.23	2 742.30
		PRECAST CONCRETE KERBING AND CHANNELLING				
	SANS 1200 MK	**PRECAST CONCRETE KERBING AND CHANNELING COMBINATION**				
	8.2.2	(a) .1 BK2 & C1 kerbing combination				
B5.85		.1 Straight sections	m	150	413.60	62 040.00
B5.86		.2 Curved sections, radius over 20m	m	50	413.60	20 680.00
B5.87		.3 Curved sections, radius over 4m, but up to and including 20m	m	20	464.22	9 284.40
B5.88		.4 Curved sections, radius over 1m, but up to and including 4m	m	20	464.22	9 284.40
	8.2.2	(a) .2 MK5 & C1 kerbing combination				
B5.89		.1 Straight sections	m	70	396.44	27 750.80
B5.90		.2 Curved sections, radius over 20m	m	30	396.44	11 893.20
B5.91		.3 Curved sections, radius over 4m, but up to and including 20m	m	10	635.74	6 357.40
B5.92		.4 Curved sections, radius over 1m, but up to and including 4m	m	10	635.74	6 357.40
	8.2.2	(a) .3 Two C1 kerbings as V-channel				
B5.93		.1 Straight sections	m	20	341.33	6 826.60
B5.94		.2 Curved sections, radius over 20m	m	10	341.33	3 413.30
B5.95		.3 Curved sections, radius over 4m, but up to and including 20m	m	10	443.72	4 437.20
					Carried Forward	1 734 391.90

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					Brought Forward	1 734 391.90
B5.96		.4 Curved sections, radius over 1m, but up to and including 4m	m	10	443.72	4 437.20
		TRANSITIONS TO KERBS				
	SANS 1200 MK	**TRANSITIONS TO KERBS**				
	8.2.6	.1 .3 Cast-in-situ strength concrete 30Mpa/19mm transitions				
B5.97		.1 Transitions 2m long (all types of kerbs)	no	20	770.98	15 419.60
		TRAFFIC SIGNS MEASURED IN NUMBER				
	SANS 1200 MM	**TRAFFIC SIGNS ERECTED COMPLETE**				
	PSMM	Statutory signs, street names, etc supplied and erected complete, including posts, excavation, etc				
	8.3.6	(a) Provision and erection of regulatory traffic signs for 60km/h design standard, complete				
B5.98		.1 Stop sign (R1)	no	2	1 061.02	2 122.04
B5.99		.2 4-Way Stop sign (R1.4)	no	2	1 061.02	2 122.04
B5.100		.3 Stop/yield sign (R1.2)	no	2	1 061.02	2 122.04
B5.101		.4 Yield sign (R2)	no	2	1 061.02	2 122.04
B5.102		.5 Yield at traffic circle sign (R2.2)	no	2	1 061.02	2 122.04
B5.103		.6 Speed limit (R201)	no	2	1 061.02	2 122.04
	8.3.6	(b) Provision and erection of warning traffic signs for 60km/h design standard, complete				
B5.104		.1 T-junction (W104)	no	2	2 514.96	5 029.92
B5.105		.2 Traffic circle (W201)	no	2	2 514.96	5 029.92
B5.106		.3 Left lane ends (W215) Gentle curve-right/left (W202/3)	no	2	2 514.96	5 029.92
B5.107		.4 Gentle curve-right/left (W202/3)	no	2	2 514.96	5 029.92
B5.108		.5 Single sharp curve chevron (W405/6)	no	2	2 514.96	5 029.92
B5.109		.6 Dead end/road closed chevron (W410)	no	2	2 514.96	5 029.92
	8.3.6	(c) Provision and erection of information traffic signs for 60km/h design standard, complete				
B5.110		.1 Cul-de-sac (IN4)	no	2	1 112.23	2 224.46
		RETRO-REFLECTIVE ROAD MARKINGS				
	SANS	**ROAD MARKINGS**				
					Carried Forward	1 799 384.92

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					Brought Forward	1 799 384.92
	1200 MM	Retro-reflective paint applied at a nominal rate of 0,42l/m²				
	8.4.1	(a) White lines (broken or unbroken)				
B5.111		.1 100mm Lines	m	300	7.31	2 193.00
B5.112		.2 150mm Lines	m	200	10.96	2 192.00
B5.113		.3 200mm Lines	m	100	14.62	1 462.00
B5.114		.4 300mm Lines	m	50	25.80	1 290.00
	8.4.1	(b) Yellow lines (broken or unbroken)				
B5.115		.1 100mm Lines	m	100	7.31	731.00
B5.116		.2 150mm Lines	m	50	10.96	548.00
B5.117		.3 200mm Lines	m	20	14.62	292.40
B5.118		.4 300mm Lines	m	20	25.80	516.00
B5.119	8.4.1	(c) White characters and symbols	m²	50	91.38	4 569.00
B5.120	8.4.1	(d) Yellow characters and symbols	m²	10	91.38	913.80
B5.121	8.4.1	(e) Traffic island markings (any colour)	m²	10	91.38	913.80
	SANS 1200 MM	**SETTING OUT**				
		Setting out and pre-marking				
	8.4.4	(a) Lines (excluding traffic island, symbols, etc.)				
B5.122		.1 Lines	km	0.5	2 150.00	1 075.00
		CARPORTS AND WALKWAYS				
		Dwg 3089.92.00.SUA.16.U013				
B5.123		Carports supplied and installed complete as per drawing, including foundations, etc	no of parkings	32	88 236.00	2 823 552.00
B5.124		Walkway canopy supplied and installed complete as per drawing, including foundations, etc	m	40	5 481.17	219 246.80
		BILL NO. B5 **MANAGEMENT BUILDING PARKING - SUA**				
		Carried forward to Summary of Bills			**Total**	4 858 879.72

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - B				
		MANAGEMENT BUILDING				
		B4 - Site works				
		BILL NO. B6 **STORMWATER - GZC**				
		CLEAR SITE				
	SANS 1200 DB	**CLEAR SITE**				
	8.3.1	(a) Clear and grub area for the following construction activity, and dispose of all material off site at a spoil site established by the Contractor				
B6.1		.2 Pipeline 5m wide	m	50	14.41	720.50
		TRENCHING				
		Shoring: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service, Refer to the Project Specification in this regard.				
		Dewatering: Dewatering of earthworks will not be measured seperately and shall be included in SANS 1200A reference 8.3.2.2.(h) in the Preliminary and General bill				
		Excavate in all materials, backfill and compact to 90% mod AASHTO density, and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches				
	SANS 1200 DB	**TRENCHING**				
	8.3.2	(a) .1 Up to 1.0m wide				
B6.2		.2 Over 1m and up to 2m deep	m	235	500.80	117 688.00
B6.3		.3 Over 2m and up to 3m deep	m	25	1 168.53	29 213.25
	8.3.2	(b) .2 Over 1.0m and up to 1.3m wide				
B6.4		.2 Over 1m and up to 2m deep	m	25	560.90	14 022.50
B6.5		.3 Over 2m and up to 3m deep	m	10	1 268.69	12 686.90
	8.3.2	(c) Extra over reference 8.3.2 (a) for				
B6.6		.2 Hard rock excavation	m^3	5	803.79	4 018.95
					Carried Forward	178 350.10

					Brought Forward	178 350.10
B6.7	8.3.2	(d) Excavate unsuitable material from trench bottom, and dispose off site at a site established by the Contractor, and re-fill with suitable imported material compacted to 90% mod AASHTO density	m^3	5	90.45	452.25
	SANS 1200 DB	**DEFICIENCY MATERIAL**				
	8.3.3	Excavation ancillaries				
		.1 Make up deficiency in backfill material, including disposing of unsuitable material off site at a site established by the Contractor				
		Note: Payment of commercial deficiency in backfill material will only be paid if instructed by the Engineer				
B6.8		(a) From other necessary excavations on site	m^3	50	42.55	2 127.50
B6.9		(c) By importation of G7 material from commercial sources selected by the Contractor	m^3	50	248.89	12 444.50
		EXISTING SERVICES				
	SANS 1200 DB	**PROTECT EXISTING SERVICES**				
		Existing services that intersect or adjoin pipe trench excavations				
	8.3.5	(a) Services that intersect a trench				
B6.10		.1 Electric cable	no	2	503.55	1 007.10
B6.11		.2 Telephone cable	no	1	503.55	503.55
B6.12		.3 Fibre optic cable	no	1	503.55	503.55
B6.13		.4 Water main not exceeding 300mm dia (house connection pipes not measurable)	no	2	503.55	1 007.10
B6.14		.5 Sewer main not exceeding 300mm dia	no	2	503.55	1 007.10
B6.15		.6 600 mm dia CI sewer pipe	no	4	503.55	2 014.20
	8.3.5	(b) Services that adjoin a trench				
B6.16		.1 Electric cable	m	20	125.89	2 517.80
B6.17		.2 Telephone cable	m	20	125.89	2 517.80
B6.18		.3 Fibre optic cable	m	20	125.89	2 517.80
B6.19		.4 Water main not exceeding 300mm dia (house connection pipes not measurable)	m	20	125.89	2 517.80
B6.20		.5 Sewer main not exceeding 300mm dia	m	20	125.89	2 517.80
		GABIONS AND PITCHING				
					Carried Forward	212 005.95

					Brought Forward	212 005.95
	SANS 1200 DK	**PREPARATION**				
	8.2.1	Surface preparation for bedding of gabions and mattresses				
B6.21		(b) Cavities filled with approved excavated material or rock and compacted to 93% mod AASHTO density	m²	50	67.38	3 369.00
		GABIONS AND MATTRESSES (COASTAL)				
	SANS 1200 DK	**GABIONS**				
	8.2.2	.3 Gabions using plastic coated galvanized wire of the following sizes				
B6.22		(a) 2,0 x 1,0 x 1,0m Box of 80mm mesh size	m³	5	1 641.93	8 209.65
	SANS 1200 DK	**MATTRESSES**				
	8.2.2	.4 Reno Mattresses using plastic coated galvanized wire of the following sizes				
B6.23		(a) 2,0 x 1,0 X 0,3m Mattress of 50mm mesh size at in- and stormwater outlet+E154	m³	3	2 486.70	7 460.10
		GEOTEXTILES				
	SANS 1200 DK	**GEOTEXTILES**				
	8.2.4	Supply and lay geotextile fabric below gabions and mattresses with suitable overlaps (net area of Bidim will be measured for payment)				
B6.24		(b) Bidim A4	m²	80	19.89	1 591.20
		STONE PITCHING				
	SANS 1200 DK	**GROUTED**				
	8.2.5	Pitching including trimming and compaction of excavated surfaces to 90% mod AASHTO density				
		(b) 200mm Thick ordinary 1:3 cement/riversand grouted stone pitching to				
B6.25		.1 Flat slope	m²	50	288.71	14 435.50
B6.26		.2 Steep slope	m²	50	288.71	14 435.50
		BEDDING				
	SANS 1200 LB	**FROM EXCAVATIONS**				
	8.2.1	Provision of bedding material from trench excavations, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
B6.27		(a) Selected granular material	m³	20	97.37	1 947.40
					Carried Forward	263 454.30

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					Brought Forward	263 454.30
B6.28		(b) Selected fill material	m³	20	97.37	1 947.40
	SANS 1200 LB	**FROM OTHER EXCAVATIONS**				
	8.2.2	.1 Provision of bedding material by importation from other necessary excavations within the freehaul distance, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
B6.29		(a) Selected granular material	m³	15	417.32	6 259.80
B6.30		(b) Selected fill material	m³	100	407.16	40 716.00
	SANS 1200 LB	**FROM COMMERCIAL SOURCES**				
	8.2.2	.3 Provision of bedding material by importation from commercial sources selected by the Contractor				
B6.31		(a) Selected granular material	m³	20	97.37	1 947.40
B6.32		(b) Selected fill material	m³	60	97.37	5 842.20
	SANS 1200 L	**MEIDUM PRESSURE PIPELINES**				
	PSL 8.2.1	Supply, lay and bed pipes complete with couplings				
		(a) uPVC pipes Class 9				
B6.33		.1 160 mm diameter	m	70	288.44	20 190.80
B6.34		.2 200 mm diameter	m	215	412.07	88 595.05
B6.35		.3 250 mm diameter	m	30	615.24	18 457.20
	8.2.4	Extra-over 8.2.1 for the cutting of the pipe and the supplying and fixing of the extra coupling				
B6.36		.1 160 mm diameter	m	3	288.44	865.32
B6.37		.2 200 mm diameter	m	5	412.07	2 060.35
B6.38		.3 250 mm diameter	m	1	615.24	615.24
		STORMWATER PIPES				
	SANS 1200 LE	**SPIGOT AND SOCKET PIPES WITH RUBBER RINGS**				
	PSLE	Supply, lay, bed (class C bedding) and test concrete pipe culverts including all cutting to ends of pipes				
	8.2.1	(f) Spigot and socket class 100D with rubber rings				
B6.39		.1 375mm Diameter	m	15	967.07	14 506.05
B6.40		.2 450mm Diameter	m	12	1 078.09	12 937.08
					Carried Forward	478 394.19

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					Brought Forward	478 394.19
B6.41		.3 525mm Diameter	m	20	1 235.38	24 707.60
		Rectangular portals culverts in accordance to SANS 986				
B6.42		.1 1200 x 600 mm	m	12	4 618.13	55 417.56
		SOILCRETE				
	SANS 1200 LE	**SOILCRETE**				
		Soilcrete (5% OPC)				
B6.43		(a) Backfilling around pipe culverts	m^3	5	1 191.52	5 957.60
		CONCRETE ENCASEMENT				
	SANS 1200 LE	**CONCRETE ENCASEMENT**				
	8.2.6	Strength concrete 15Mpa/19mm				
B6.44		(a) Backfilling around pipe culverts	m^3	5	2 079.05	10 395.25
		MANHOLES, CATCHPITS, ETC				
	SANS 1200 LE	**MANHOLES**				
		Precast concrete ring type sewer manhole with cover slab, spacers and manhole cover and frame. Refer detail drawing S1 and SW11A				
		Note: Rate to include for water tight joints				
B6.45		i) 1.25 m - 1.50 m depth	no	2	26523.41	53 046.82
B6.46		ii) 1.50 m - 1.75 m depth	no	2	27028.66	54 057.32
B6.47		iii) 1.75 m - 2,00 m depth	no	1	28028.41	28 028.41
	SANS 1200 LE	**KERB INLETS**				
		Ref dwg. R0-2272/1A (CoC)				
	8.2.8	(e) Kerb inlets complete with kerbs, gutters, etc with opening length of				
B6.48		.1 2m Long	no	2	16 790.38	33 580.76
B6.49		.2 3m Long	no	2	25 185.57	50 371.14
	SANS 1200 LE	**DRAIN CHAMBERS**				
		Refer detail dwg.3089.30.01.GZC.03.D004				
	8.2.8	(f) Drain chambers complete with following pipe sizes				
B6.50		.1 150 - 225mm Diameter pipe	no	9	17 400.83	156 607.47
	SANS 1200 LE	**OUTLET STRUCTURES**				
		Refer detail dwg.3089.30.01.GZC.03.D004 and SW9				
					Carried Forward	950 564.12

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					Brought Forward	950 564.12
	8.2.8	(g) Pipe outlet structure complete for the following pipe sizes				
B6.51		.1 300 - 600mm Diameter pipe	no	2	12 010.40	24 020.80
B6.52		.2 In- and outlet structure for 1200 x 600 mm rectangular portals culvert	no	2	24 020.79	48 041.58
	SANS 1200 G	**CONCRETE STRUCTURAL**				
	PSG	Refer detail dwg.3089.30.01.GZC.03.D003 & D004				
		SMOOTH FORMWORK				
	8.2.5	Smooth formwork to narrow widths				
		(a) edges, risers, etc. not exceeding 300 mm				
B6.53		1. Portals culvert floor, 150 mm	m	30	56.36	1 690.80
B6.54		.2 Dished channel	m	270	56.36	15 217.20
		REINFORCEMENT				
		Rod Reinforcement refer dwg. SW10B				
	8.3.1a	Mild steel				
B6.55		1. All sizes	ton	0.1	20 024.02	2 002.40
	8.3.1b	High tensile steel				
B6.56		1. All sizes	ton	0.5	20 024.02	10 012.01
		CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
B6.57		(a) Blinding layer 50 mm thick	m^3	1	2 815.01	2 815.01
	8.4.3	Strength concrete 35Mpa/19mm				
B6.58		.1 Floor slabs	m^3	4	2 716.11	10 864.44
B6.59		.2 Drain channel	m^3	9	2 716.11	24 444.99
	8.4.4a	UNFORMED SURFACE FINISHES				
B6.60		.1 Wood floated finish	m^2	22	13.92	306.24
B6.61		.2 Steel floated finish	m^2	75	19.44	1 458.00
	SANS 1200 GB	**EXPANSION JOINTS**				
B6.62	8.2.8	12 mm thick jointex placed vertically between concrete surfaces	m^2	7	191.67	1 341.69
					Carried Forward	1 092 779.28

					Brought Forward	1 092 779.28
	8.2.8	Polyurethane joint sealer				
B6.63		1. Remove 12 x 12 mm tear off strip, prime with an approved primer and fill joint with suitable polyurethane sealer	m	35	153.31	5 365.85
		BILL NO. B6 **STORMWATER - GZC**				
		Carried forward to Summary of Bills			**Total**	1 098 145.13

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - B				
		MANAGEMENT BUILDING				
		Sub portion B6 - Building works				
		BILL NO. B7 **MANAGEMENT BUILDING - SUA**				
		EARTHWORKS				
	SANS 1200 D	**EARTHWORKS**				
		Shoring: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
		Dewatering: Dewatering of earthworks will not be measured seperately and shall be included in SANS 1200A reference 8.3.2.2.(h) in the Preliminary and General bill				
		RESTRICTED EXCAVATIONS				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
B7.1		.1 Wall footings	m³	315	365.86	115 245.90
B7.2		.3 Column bases	m³	315	365.86	115 245.90
B7.3		.4 Lift base	m³	105	365.86	38 415.30
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
B7.4		.2 Hard rock excavation	m³	21	803.79	16 879.59
		WORKING SPACE				
		WORKING SPACE Excavate vertical face of excavation beyond the measured excavation face around the perimeter of the structure				
B7.5	8.3.5	(a) Excavate for working space (previously excavated face +- 300mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 1,5m deep, including backfilling and compaction to 93% mod AASHTO density	m²	315	292.69	92 197.35
					Carried Forward	377 984.04

					Brought Forward	377 984.04
B7.6	8.3.5	(b) Excavate for working space (previously excavated face on the perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 1,5m deep, including backfilling and compaction to 93% mod AASHTO density	m²	315	292.69	92 197.35
		BACKFILLING				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
B7.7		.1 Alongside walls, etc in foundations	m³	315	248.89	78 400.35
B7.8		.2 Behind retaining walls	m³	315	248.89	78 400.35
B7.9		.3 Below floors	m³	1260	248.89	313 601.40
		CONCRETE WORKS				
		ROUGH FORMWORK				
	SANS 1200 GB	**ROUGH FORMWORK**				
	8.2.1	(a) .2 Plane vertical				
B7.10		.1 Sides of column bases and wall footings	m²	477	397.68	189 693.36
B7.11		.2 Sides of downstand ground beams	m²	53	397.68	21 077.04
B7.12		.3 Walls	m²	105	397.68	41 756.40
B7.13		.4 Square or rectangular columns	m²	53	397.68	21 077.04
B7.14		.5 Circular columns	m²	11	397.68	4 374.48
	8.2.1	(b) .5 Plane circular				
B7.15		.1 Walls circular on plan to 2m radius	m²	32	451.05	14 433.60
	8.2.2	Rough formwork to narrow widths				
B7.16		(a) Edges, risers, etc not exceeding 300mm wide	m	105	119.30	12 526.50
B7.17		(b) Circular edges, risers, etc not exceeding 300mm wide	m	32	504.42	16 141.44
		SMOOTH FORMWORK				
		SMOOTH FORMWORK				
	8.2.1	(b) .1 Plane horizontal				
B7.18		.1 Slabs	m²	2243	470.47	1 055 264.21
					Carried Forward	2 316 927.56

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					Brought Forward	2 316 927.56
B7.19		.2 Canopy slabs	m²	90	662.41	59 616.90
B7.20		.3 Beams	m²	139	854.55	118 782.45
B7.21		.4 Landings	m²	6	662.41	3 974.46
	8.2.1	(b) .2 Plane vertical				
B7.22		.1 Upstands	m²	273	397.68	108 566.64
B7.23		.2 Walls	m²	410	397.68	163 048.80
B7.24		.3 Square or rectangular columns	m²	648	397.68	257 696.64
B7.25		.4 Circular columns	m²	6	397.68	2 386.08
B7.26		.5 Beams	m²	606	451.05	273 336.30
	8.2.1	(b) .3 Plane sloping				
B7.27		.1 Slabs	m²	475	811.38	385 405.50
B7.28		.2 Landings	m²	8	811.38	6 491.04
B7.29		.3 Stairs	m²	25	989.29	24 732.25
	8.2.1	(b) .5 Plane circular				
B7.30		.1 Walls circular on plan to 2m radius	m²	11	803.92	8 843.12
B7.31		.2 Beam circular soffits to 2m radius	m²	20	1 266.17	25 323.40
B7.32		.3 Beam circular sides to 2m radius	m²	232	803.92	186 509.44
	8.2.2	Normal formwork to narrow widths				
B7.33		(a) Edges, risers, etc not exceeding 300mm wide	m	1140	119.30	136 002.00
B7.34		(b) Circular edges, risers, etc not exceeding 300mm wide	m	63	151.33	9 533.79
B7.35		(c) Raking side of stairs maximum 400mm wide	m	13	321.57	4 180.41
	8.1.1.2	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
B7.36		(a) Chamfer size 50 x 50mm	m	53	150.20	7 960.60
B7.37		(b) Groove size 70mm wide x 50mm deep	m	53	160.80	8 522.40
B7.38		(c) Rebate size 100mm x 100mm	m	53	241.12	12 779.36
B7.39		(e) V-reedings 75mm wide in top of concrete treads	m	84	99.42	8 351.28
		BOXING IN FOR HOLES AND VOIDS				
	8.2.3	(a) Small, circular, up to 0.35m diameter with depth				
B7.40		.1 Over 0m and up to 0,5m	no	5	504.42	2 522.10
					Carried Forward	4 131 492.52

[redacted]

					Brought Forward	4 131 492.52
B7.41		.2 Over 0,5m and up to 1,0m	no	5	504.42	2 522.10
B7.42		.3 Over 1,0m and up to 1,5m	no	5	504.42	2 522.10
B7.43		.4 Over 1,5m and up to 2,0m	no	5	504.42	2 522.10
	8.2.3	(b) Small, other shapes, up to 0,1m² in area with depth				
B7.44		.1 Over 0m and up to 0,5m	no	5	584.48	2 922.40
B7.45		.2 Over 0,5m and up to 1,0m	no	5	584.48	2 922.40
B7.46		.3 Over 1,0m and up to 1,5m	no	5	584.48	2 922.40
B7.47		.4 Over 1,5m and up to 2,0m	no	5	584.48	2 922.40
	8.2.3	(c) Large, circular, over 0,35m and up to 0,7m diameter with depth				
B7.48		.1 Over 0m and up to 0,5m	no	5	717.92	3 589.60
B7.49		.2 Over 0,5m and up to 1,0m	no	5	717.92	3 589.60
B7.50		.3 Over 1,0m and up to 1,5m	no	5	717.92	3 589.60
B7.51		.4 Over 1,5m and up to 2,0m	no	5	717.92	3 589.60
	8.2.3	(d) Large, other shapes, over 0,1m² up to 0,5m² in area with depth				
B7.52		.1 Over 0m and up to 0,5m	no	5	984.79	4 923.95
B7.53		.2 Over 0,5m and up to 1,0m	no	5	984.79	4 923.95
B7.54		.3 Over 1,0m and up to 1,5m	no	5	984.79	4 923.95
B7.55		.4 Over 1,5m and up to 2,0m	no	5	984.79	4 923.95
		PERMANENT FORMWORK				
B7.56		Permanent formwork vertically in brick cavity wall to retain concrete filling to wall cavity and leave in place (no removal required) cavity width maximum 150mm wide	m	315	105.86	33 345.90
		REINFORCEMENT				
		ROD REINFORCEMENT				
		Steel bars				
	8.2.4	(a) .1 Mild steel				
B7.57		.1 All sizes	ton	37	18 976.98	702 148.26
	8.2.4	(a) .2 High tensile steel				
B7.58		.1 All sizes	ton	210	18 976.98	3 985 165.80
					Carried Forward	8 905 462.58

[redacted]

					Brought Forward	8 905 462.58
		MESH REINFORCEMENT				
	8.2.4	(c) High tensile welded mesh				
B7.59		.1 Ref no.245	m²	613	71.15	43 614.95
B7.60		.2 Ref no.395	m²	525	107.37	56 369.25
		CONCRETE				
		STRENGTH CONCRETE				
	8.2.5.1	(b) .3 Strength concrete 35Mpa/19mm				
B7.61		.1 Column bases	m³	140	1 978.65	277 011.00
B7.62		.2 Wall footings	m³	168	1 978.65	332 413.20
B7.63		.3 Lift base	m³	30	1 978.65	59 359.50
B7.64		.4 Slabs	m³	680	1 978.65	1 345 482.00
B7.65		.5 Canopy slabs	m³	25	1 978.65	49 466.25
B7.66		.6 Floor slabs	m³	278	1 978.65	550 064.70
B7.67		.7 Walls	m³	62	1 978.65	122 676.30
B7.68		.8 Parapet walls	m³	2	1 978.65	3 957.30
B7.69		.9 Beams	m³	128	1 978.65	253 267.20
B7.70		.10 Columns	m³	59	1 978.65	116 740.35
B7.71		.11 Upstands	m³	11	1 978.65	21 765.15
B7.72		.12 Stairs and landings	m³	16	1 978.65	31 658.40
B7.73		.13 Filling to brick cavity wall 110mm wide	m³	53	2 594.95	137 532.35
		CONCRETE IN SMALL QUANTITIES				
	8.2.5.1	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
B7.74		.1 50mm Thick	m³	37	1 857.71	68 735.27
		PRECAST CONCRETE WINDOW SURROUNDS				
		SUPPLY PRECAST CONCRETE				
	8.2.5.1	(f) .1 Provision of precast units including all concrete, formwork, reinforcement,etc Dwg 3089.92.00.SUA.16.F040				
B7.75		.1 Window surround type S01 for window size 500 x 1500mm high complete	no	9	3 756.05	33 804.45
					Carried Forward	12 409 380.20

[redacted]

					Brought Forward	12 409 380.20
B7.76		.2 Window surround type S01 for window size 1500 x 1500mm high complete	no	11	5 635.15	61 986.65
B7.77		.3 Window surround type S02 for window size 1500 x 1500mm high complete	no	9	5 635.15	50 716.35
		ERECT PRECAST CONCRETE				
	8.2.5.1	(f) .2 Erection of precast units described above, including all fixings, sealants, supports, etc Dwg 3089.92.00.SUA.16.F040				
B7.78		.1 Window surround type S01 for window size 500 x 1500mm high complete	no	9	558.89	5 030.01
B7.79		.2 Window surround type S01 for window size 1500 x 1500mm high complete	no	11	558.89	6 147.79
B7.80		.3 Window surround type S02 for window size 1500 x 1500mm high complete	no	9	558.89	5 030.01
		SURFACE FINISHES				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.2.6	(a) Wood floated finish				
B7.81		.1 Slabs, floor slabs, etc	m²	2959	13.92	41 189.28
B7.82		.2 Top of walls, beams, etc	m²	84	13.92	1 169.28
	8.2.6	(b) Steel floated finish				
B7.83		.1 Floor slabs	m²	2100	19.44	40 824.00
B7.84		.2 Top of walls, beams, etc	m²	53	19.44	1 030.32
	8.2.6	(c) Power floated finish				
B7.85		.1 Floor slabs	m²	210	38.87	8 162.70
		SPECIAL SURFACE FINISHES				
	8.2.7	(a) Polished exposed aggregate concrete floors Dwg 3089.92.00.SUA.16.F040				
		Seven stage grinding process				
B7.86		.1 Polished exposed aggregate concrete surface finish as described on finishing schedule	m²	525	241.88	126 987.00
B7.87		.2 Sealer to polished concrete surface with Crete Colors Colourhard C2 Hard sealer and C2 Ultra seal complete	m²	525	75.25	39 506.25
					Carried Forward	12 797 159.84

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					Brought Forward	12 797 159.84
	SANS 1200G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
B7.88		.1 Expansion joint in columns	m²	105	118.25	12 416.25
B7.89		.2 Expansion joint in beams	m²	210	118.25	24 832.50
B7.90		.4 Narrow widths not exceeding 300mm wide	m	210	35.48	7 450.80
		SEALERS				
		(b) Polyurethane joint sealer				
B7.91		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	840	153.31	128 780.40
		SAWCUT JOINTS				
B7.92	8.7	(a) 6 x 40mm Deep sawcut joint in top of concrete floor slab	m	1943	113.98	221 463.14
		CONSTRUCTION JOINTS				
B7.93	8.8	(a) Construction joint in concrete slabs, etc not exceeding 150mm thick by placing formwork to edge of slab during casting of concrete, removing of formwork later, cleaning and scabbling of exposed face to concrete for adhesion to new concrete, placing of approved swellable bar and casing of new concrete to form	m	315	80.06	25 218.90
		BRICKWORK				
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
B7.94		.1 115mm Thick wall in lining to concrete structure including hoop iron ties plugged to concrete and built into brickwork	m²	21	266.49	5 596.29
B7.95		.2 Ditto circular on plan to 2m radius	m²	10	269.37	2 693.70
B7.96		.3 230mm Thick wall	m²	53	508.77	26 964.81
B7.97		.4 230mm Thick wall in planters	m²	53	508.77	26 964.81
B7.98		.5 Ditto circular on plan	m²	21	514.69	10 808.49
					Carried Forward	13 290 349.93

					Brought Forward	13 290 349.93
B7.99		.6 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	420	613.01	257 464.20
B7.100		.7 Ditto circular on plan	m²	105	618.93	64 987.65
B7.101		.8 345mm Cavity wall of two 115mm walls with 115mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	53	702.95	37 256.35
B7.102		.9 450mm Cavity wall of two 115mm walls with 220mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	53	874.67	46 357.51
B7.103		.10 345mm Thick solid wall	m²	21	782.90	16 440.90
B7.104		.11 460mm Thick solid wall	m²	21	1 017.52	21 367.92
B7.105		.12 Mass brickwork	m³	5	3 555.51	17 777.55
		SUPERSTRUCTURE				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
B7.106		.1 115mm Thick wall	m²	84	250.95	21 079.80
B7.107		.2 115mm Thick wall in window surround	m²	74	250.95	18 570.30
B7.108		.3 115mm Thick wall in lining to concrete structure including hoop iron ties plugged to concrete and built into brickwork	m²	53	266.49	14 123.97
B7.109		.4 Ditto circular on plan	m²	53	269.37	14 276.61
B7.110		.5 230mm Thick wall	m²	1019	508.77	518 436.63
B7.111		.6 Ditto circular on plan	m²	11	514.69	5 661.59
B7.112		.7 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	1817	508.01	923 054.17
B7.113		.8 Ditto circular on plan	m²	200	513.76	102 752.00
B7.114		.9 345mm Cavity wall of two 115mm walls with 115mm cavity between including butterfly wall ties	m²	105	514.89	54 063.45
B7.115		.10 450mm Cavity wall of two 115mm walls with 220mm cavity between including butterfly wall ties	m²	210	514.89	108 126.90
B7.116		.11 345mm Thick solid wall	m²	32	782.90	25 052.80
B7.117		.12 460mm Thick solid wall	m²	32	1 017.52	32 560.64
B7.118		.13 Mass brickwork	m³	5	3 555.51	17 777.55
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
					Carried Forward	15 607 538.42

					Brought Forward	15 607 538.42
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
B7.119		.1 Stretcher course bond	m²	756	586.45	443 356.20
B7.120		.2 Ditto in foundations	m²	158	546.50	86 347.00
B7.121		.3 Stretcher course bond circular on plan	m²	231	586.44	135 467.64
B7.122		.4 Ditto in foundations	m²	53	546.50	28 964.50
B7.123		.5 Soldier course bond	m²	53	548.59	29 075.27
		FACE BRICKWORK - INTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
B7.124		.10 Stretcher course bond	m²	504	586.44	295 565.76
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
B7.125		.20 Stretcher course bond	m²	210	630.06	132 312.60
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
B7.126		.1 110mm Wide brickforce	m	210	2.19	459.90
B7.127		.2 150mm Wide brickforce	m	3360	2.19	7 358.40
B7.128		.3 Rod reinforcing (all sizes)	kg	105	23.75	2 493.75
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
B7.129		.1 75 x 110mm Lintol	m	105	70.12	7 362.60
		ROOF TIES				
B7.130	8.4.1d	.1 6mm Galvanised wire roof tie 2,5m girth, with one end built into brickwork and other end fixed to roof timbers	no	21	19.25	404.25
		WALL TIES				
					Carried Forward	16 776 706.29

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					Brought Forward	16 776 706.29
	8.4.1c	Hoop iron ties between concrete and brickwork				
B7.131		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	525	27.62	14 500.50
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
B7.132		.1 Vertically	m	315	63.68	20 059.20
B7.133		2 Horizontally	m	420	23.53	9 882.60
		Two coarses of brickwork in closing of 115m cavity of cavity walls where required				
B7.134		.3 Vertically	m	53	146.46	7 762.38
B7.135		4 Horizontally	m	53	54.13	2 868.89
		Two coarses of brickwork in closing of 220mm cavity of cavity walls where required				
B7.136		.5 Vertically	m	53	280.19	14 850.07
B7.137		6 Horizontally	m	53	103.54	5 487.62
	PU	**PRECAST CONCRETE COPINGS**				
		COPINGS				
	8.20	Precast concrete copings supplied and installed complete				
B7.138		.1 260 x 100mm Moulded coping fitted to top of 230mm cavity wall complete with all mitres, end blocks, etc	m	53	396.32	21 004.96
B7.139		.2 Ditto circular on plan	m	21	427.17	8 970.57
B7.140		.3 300 x 100mm Moulded coping fitted to top of 280mm cavity wall complete with all mitres, end blocks, etc	m	210	440.40	92 484.00
		WATERPROOFING				
	PU	**WATERPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
B7.141		.1 375 Micron under walls including cement mortar triangular fillet in cavity walls	m²	158	32.28	5 100.24
					Carried Forward	16 979 677.32

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					Brought Forward	16 979 677.32
B7.142		.2 375 Micron under sills	m²	53	18.83	997.99
	8.4.4	Polyethelene sheeting				
B7.143		.1 250 Micron USB green under floors	m²	2138	12.73	27 216.74
		WATERPROOFING OF WINDOWS				
B7.144	8.4.5	250 Mic damp proof sheeting strip of suitable width built into brickwork for sealing window frames all round	m	210	5.65	1 186.50
		WATERPROOFING				
	8.20	ABE Unigum MS duel reinforced mineral surface "torch on fusion" waterproofing membrane - or other approved - fixed to concrete roofs with 100mm side laps and 150mm end laps all to manufacturers specifications complete, including all cutting and waste, dressing up to walls, etc and cutting, fitting and sealing around all outlet pipes, etc				
B7.145		.1 Concrete flat roofs	m²	2100	213.39	448 119.00
B7.146		.2 Concrete upstand beams	m²	300	247.68	74 304.00
B7.147		.3 Concrete box gutters	m²	200	247.68	49 536.00
B7.148		.4 Turnup 200mm high	m	500	48.38	24 190.00
	8.21	Two coats aluminium paint applied to waterproofing including all preparation and approved undercoat complete				
B7.149		.1 General surfaces of waterproofing	m²	2800	48.38	135 464.00
	PU	**INSULATION**				
	8.22	50mm Thick Isoboard - or other approved - high density 32-36kg/m3 rigid extruded ploystyrene 100% closed cell insulation boards in 600mm widths with shiplap joints laid on and including Bidim A2 geotextile blanket all to manufacturers specifications on				
B7.150		.1 Concrete flat roofs	m²	2100	281.81	591 801.00
		PROTECTION LAYER				
		Crushed stone protection layer carefully placed on waterproofing				
B7.151	8.23	.1 20mm Clean washed crushed stone layer 100mm thick placed on waterproofed concrete roofs	m³	210	1 216.90	255 549.00
		CEILINGS AND PARTITIONS				
	PU	**SUSPENDED CEILINGS**				
		SUSPENDED CEILINGS				
		Supply and erect suspended ceilings complete				
						18 588 041.55

[redacted]

						18 588 041.55
	8.10	.1 Pre-painted mineral wool ceilings				
B7.152		.1 15mm Ecophon Gedina E-Tech mineral wool suspended ceiling of 600 x 600mm ceiling panels type Ecophon Akutex T-colour white 500 painted finish laid loose on fire rated Ecuphon Connect T15 suspension system with shadowlines and accessories with 4mm galvanized wire hangers approximately 600mm below concrete slabs, complete with powdercoated aluminium shadowline W-trim cornice at junction of ceilings and walls	m²	1029	719.85	740 725.65
B7.153		.2 Form hole through ceiling for light fittings	no	53	18.54	982.62
	8.10	.2 Pre-painted mineral wool ceilings				
B7.154		.1 20mm Ecophon Focus LP-Tech Accoustic mineral wool suspended ceiling of various size ceiling panels such as 150 x 600 - 300 x 600 - 600 x 600 - 150 x 1200 and 600 x 1200 mm laid in staggered pattern with white painted finish laid loose on semi-concealed Connect fire rated suspension system with 4mm galvanized wire hangers approximately 600mm below concrete slabs, complete with powdercoated aluminium shadowline W-trim cornice at junction of ceiling and wall	m²	220	6 451.16	1 419 255.20
B7.155		.2 Form hole through ceiling for light fittings	no	53	30.91	1 638.23
	8.10	.3 Pre-varnished accoustic ceilings				
B7.156		.1 44mm Owacoustic Idealux LT Accoustic suspended ceiling of 600 x 1935mm colourless varnished slatted ceiling panels mounted to galvanised sub-frame to soffit of steel roof construction (steel roof construction measured elsewhere) all to manufacturers instructions complete	m²	378	4 215.49	1 593 455.22
B7.157		.2 Form hole through ceiling for light fittings	no	21	18.54	389.34
	8.10	.4 Skimmed plasterboard ceilings				
B7.158		.1 12,5mm Plasterboard suspended ceiling of suitable ceiling panels sizes fixed to approved galvanised grid system with 25 x 25 x 0,6mm galvanised angle hangers approximately 600mm below concrete slabs, complete with 30 x 30mm C557aluminium angle section cornice at junction of ceiling and wall, the joints covered wth FIBA tape and entire surface skimmed with approved plaster finish 3-6mm thick	m²	431	253.43	109 228.33
B7.159		.2 Form hole through ceiling for light fittings	no	53	18.54	982.62
	8.10	.5 Skimmed plasterboard bulkheads				
					Carried Forward	22 454 698.76

					Brought Forward	22 454 698.76
B7.160		.1 9,5mm Plasterboard vertical bulkheads in suitable panels sizes fixed to approved galvanised grid system with 25 x 25 x 0,6mm galvanised angle hangers, complete with 30 x 30mm aluminium angle section cornice at junction of ceiling and wall, the joints covered wth FIBA tape and entire surface skimmed with approved plaster finish 3-6mm thick	m²	210	562.49	118 122.90
B7.161		.2 Form hole through ceiling for light fittings	no	30	18.54	556.20
	8.10	.6 Pre-painted acoustic ceilings				
B7.162		.1 Vogl Acoustic Ceiling 8/18Q (Quadrant) or similar approved acoustic ceiling system, with VoglFuge system kit, including perforated panel screws SN 3.5 x 30mm and joint finishing with the unique VoglFuge strip all to manufacturers specifications	m²	400	1 128.54	451 416.00
B7.163		.2 Form hole through ceiling for light fittings	no	30	18.54	556.20
	PU	**DRYWALL PARTITIONS**				
	8.20	**DRYWALL PARTITIONS**				
B7.164		.1 Gyproc Sound Resistant Wall System of 146 x 50mm Gypframe with 12,5mm Soundbloc Rhinoboard cladding on both sides with 102mm Isover Cavitybatt 14kg/m3 insulation fitted in cavity, the joints covered wth FIBA tape and entire surface skimmed with approved plaster finish 3-6mm thick	m²	126	1 063.45	133 994.70
B7.165		.2 Extra over the above for forming opening for single door (door and frames measured elsewhere)	no	2	1 916.19	3 832.38
B7.166		.3 Extra over the above for forming opening for double door (door and frames measured elsewhere)	no	3	2 287.06	6 861.18
		TIMBER DOORS AND FRAMES				
	PU	**TIMBER DOORS AND FRAMES**				
		TIMBER FRAMES				
		Wrot Sapele				
	8.8	Single rebated 80 x 55mm hardwood door frame for the following size doors, built into brickwork complete with galvanised hoop iron straps fixed to frames and built into brickwork, including polysulphide sealant both sides of frames complete				
		Dwg 3089.92.00.SUA.16.F004				
B7.167		.1 Door size 813 x 2400mm (Type A)	no	18	1 885.53	33 939.54
B7.168		.2 Door size 1000 x 2400mm (Type B)	no	2	1 941.43	3 882.86
					Carried Forward	23 207 860.72

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					Brought Forward	23 207 860.72
B7.169		.3 Door size 900 x 2400mm (Type D)	no	1	1 913.48	1 913.48
B7.170		.4 Door size 590 x 2400mm (Type F)	no	1	1 829.63	1 829.63
		SOLID CORE DOORS				
	8.9	44mm Solid core doors with masonite veneer suitable for painting Dwg 3089.92.00.SUA.16.F004				
B7.171		.1 Door size 813 x 2400mm (Type A)	no	18	2 158.60	38 854.80
B7.172		.2 Door size 1000 x 2400mm (Type B)	no	2	2 659.55	5 319.10
B7.173		.3 Door size 900 x 2400mm (Type D)	no	1	2 430.58	2 430.58
B7.174		.4 Door size 590 x 2400mm (Type F)	no	1	1 745.80	1 745.80
		IRONMONGERY				
		Note: Ironmongery specified for all aluminium shopfronts, doors, windows etc are to be included with the relevant shopfront, door or window prices Ironmongery specified for all timber doors, etc are priced seperately below Priced items below shall include for all ironmongery to doors and frames as specified on the ironmongery schedules complete				
	8.10	Ironmongery to solid core doors and frames above Dwg no 3089.92.00.SUA.16.F043				
B7.175		.1 Door size 813 x 2400mm (Type A)	no	18	3 408.80	61 358.40
B7.176		.2 Door size 1000 x 2400mm (Type B)	no	2	5 537.71	11 075.42
B7.177		.3 Door size 900 x 2400mm (Type D)	no	1	1 535.71	1 535.71
B7.178		.4 Door size 590 x 2400mm (Type F)	no	1	1 257.19	1 257.19
	PU	**SKIRTINGS**				
		TIMBER SKIRTINGS				
	8.9	Wrot Sapele				
B7.179		.1 22 x 200mm Single rebated skirting nailed to walls	m	714	357.24	255 069.36
		FLOOR COVERINGS				
	PU	**FLOOR COVERINGS**				
		VINYL TIMBER FLOOR				
					Carried Forward	23 590 250.19

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					Brought Forward	23 590 250.19
	8.20	Vinyl timber floor (Allow R800.00/m² for supply and installing flooring complete excluding VAT) fixed to screeded floors (screed measured elsewhere) all to manufacturers instructions				
B7.180		.1 To floors	m²	378	946.00	357 588.00
		CARPET TILES				
	8.21	7 x 500 x 500mm Van Dyk Lineal - Anaseed carpet tiles (Location Grade - Heavy Commercial) of Tufted Solution Dyed Nylon and backing bitumen fixed to screeded floors (screed measured elsewhere) all to manufacturers instructions				
B7.181		.1 To floors	m²	1019	483.75	492 941.25
		METALWORK				
		RECORD ROOM DOORS				
	8.8	Record room door and ventilator as per manufacturers specification installed complete with all ironmongery Dwg 3089.92.00.SUA.16.F004				
B7.182		.1 Mutual Austen Safe record room door Type DS1 size 760 x 1883mm high	no	1	14 172.80	14 172.80
	PU	**ALUMINIUM WINDOWS**				
		WINDOWS				
	8.8	Purpose made powder coated aluminium glazed windows supplied and installed complete with glazing, ironmongery, etc to manufacturers specification Prices to include for fixing damp proof sheeting (dampproof sheeting measured elsewhere) to window frame when fixing window to brickwork or concrete and sealing joint between window frame and plaster or brickwork finish with approved Polyurethane sealant all round to external faces Dwg 3089.92.00.SUA.16.F005				
B7.183		.1 Window size 1500 x 1500mm (type A)	no	14	1 935.00	27 090.00
B7.184		.2 Window size 1500 x 1500mm (type B)	no	11	1 935.00	21 285.00
B7.185		.3 Window size 500 x 1500mm (type C)	no	9	1 075.00	9 675.00
B7.186		.4 Window size 500 x 500mm (type D)	no	9	645.00	5 805.00
B7.187		.5 Window size 500 x 500mm (type E)	no	55	645.00	35 475.00
B7.188		.5 Window size 1610 x 1200mm (type F)	no	1	1 290.00	1 290.00
	PU	**ALUMINIUM SHOPFRONTS**				
		SHOPFRONTS				
					Carried Forward	24 555 572.24

					Brought Forward	24 555 572.24
	8.20	Type ISF001 & 002 Dwg 3089.92.00.SUA.16.F006 Dwg 3089.92.00.SUA.16.F067				
B7.189		.1 Shopfront size 2920 x 2400mm high	no	2	14 577.00	29 154.00
B7.190		.2 Extra over the above for double door complete with ironmongery, etc	no	2	4 837.50	9 675.00
B7.191		.3 Extra for applying frosted window film complete	no	2	645.00	1 290.00
	8.21	Type ISF003 & 011 Dwg 3089.92.00.SUA.16.F007 Dwg 3089.92.00.SUA.16.F072				
B7.192		.1 Shopfront size 4225 x 3395mm high	no	2	21 016.25	42 032.50
B7.193		.2 Extra over the above for single door complete with ironmongery, etc	no	2	4 837.50	9 675.00
B7.194		.3 Extra for applying frosted window film complete	no	2	645.00	1 290.00
	8.22	Type ISF004 & 012 Dwg 3089.92.00.SUA.16.F008 Dwg 3089.92.00.SUA.16.F073				
B7.195		.1 Shopfront size 4225 x 3395mm high	no	2	16 125.00	32 250.00
B7.196		.2 Extra over the above for single door complete with ironmongery, etc	no	2	4 837.50	9 675.00
B7.197		.3 Extra for applying frosted window film complete	no	2	645.00	1 290.00
	8.23	Type ISF005 & 009 Dwg 3089.92.00.SUA.16.F009 Dwg 3089.92.00.SUA.16.F074				
B7.198		.1 Shopfront size 5075 x 2650mm high	no	2	23 650.00	47 300.00
B7.199		.2 Extra over the above for single door complete with ironmongery, etc	no	2	4 837.50	9 675.00
B7.200		.3 Extra for applying frosted window film complete	no	2	645.00	1 290.00
	8.24	Type ISF006 & 010 Dwg 3089.92.00.SUA.16.F010 Dwg 3089.92.00.SUA.16.F075				
B7.201		.1 Shopfront size 5075 x 2650mm high	no	2	23 650.00	47 300.00
B7.202		.2 Extra over the above for single door complete with ironmongery, etc	no	2	4 837.50	9 675.00
B7.203		.3 Extra for applying frosted window film complete	no	2	645.00	1 290.00
	8.25	Type ISF007 Dwg 3089.92.00.SUA.16.F011 Dwg 3089.92.00.SUA.16.F076				
					Carried Forward	24 808 433.74

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					Brought Forward	24 808 433.74
B7.204		.1 Shopfront size 4200 x 3395mm high	no	1	21 500.00	21 500.00
B7.205		.2 Extra over the above for single door complete with ironmongery, etc	no	1	4 837.50	4 837.50
B7.206		.3 Extra for applying frosted window film complete	no	1	645.00	645.00
	8.26	Type ISF008 Dwg 3089.92.00.SUA.16.F012 Dwg 3089.92.00.SUA.16.F077				
B7.207		.1 Shopfront size 4200 x 3395mm high	no	1	21 500.00	21 500.00
B7.208		.2 Extra over the above for single door complete with ironmongery, etc	no	1	4 837.50	4 837.50
B7.209		.3 Extra for applying frosted window film complete	no	1	645.00	645.00
	8.27	Type ISF013 Dwg 3089.92.00.SUA.16.F013 Dwg 3089.92.00.SUA.16.F071				
B7.210		.1 Shopfront size 4980 x 2400mm high	no	1	21 500.00	21 500.00
B7.211		.2 Extra over the above for double door complete with ironmongery, etc	no	1	4 837.50	4 837.50
B7.212		.3 Extra for applying frosted window film complete	no	1	645.00	645.00
	8.28	Type ISF014 Dwg 3089.92.00.SUA.16.F014				
B7.213		.1 Shopfront size 2590 x 2400mm high	no	1	12 900.00	12 900.00
B7.214		.2 Extra over the above for single door complete with ironmongery, etc	no	1	3 225.00	3 225.00
B7.215		.3 Extra over the above for double door complete with ironmongery, etc	no	1	4 837.50	4 837.50
	8.29	Type ISF015 Dwg 3089.92.00.SUA.16.F015				
B7.216		.1 Shopfront size 2950 x 2700mm high	no	1	12 900.00	12 900.00
	8.30	Type ISF016 Dwg 3089.92.00.SUA.16.F016				
B7.217		.1 Shopfront size 2300 x 2400mm high	no	1	10 750.00	10 750.00
B7.218		.2 Extra over the above for double door complete with ironmongery, etc	no	1	4 837.50	4 837.50
	8.31	Type ISF020 & 021 & 022 & 023 & 025 Dwg 3089.92.00.SUA.16.F017 Dwg 3089.92.00.SUA.16.F078				
					Carried Forward	24 938 831.24

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					Brought Forward	24 938 831.24
B7.219		.1 Shopfront size 2500 x 2400mm high	no	5	12 900.00	64 500.00
B7.220		.2 Extra over the above for double door complete with ironmongery, etc	no	5	4 837.50	24 187.50
B7.221		.3 Extra for applying frosted window film complete	no	5	645.00	3 225.00
	8.32	Type ISF024 Dwg 3089.92.00.SUA.16.F018 Dwg 3089.92.00.SUA.16.F079				
B7.222		.1 Shopfront size 1730 x 2440mm high	no	1	9 675.00	9 675.00
B7.223		.2 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
B7.224		.3 Extra for applying frosted window film complete	no	1	645.00	645.00
	8.33	Type SF001 Dwg 3089.92.00.SUA.16.F019				
B7.225		.1 Shopfront size 2070 x 575mm high	no	2	12 900.00	25 800.00
B7.226		.2 Shopfront size 3090 x 575mm high	no	2	16 125.00	32 250.00
B7.227		.3 Shopfront size 2070 x 3500mm high	no	1	12 900.00	12 900.00
B7.228		.4 Shopfront size 3090 x 3500mm high	no	1	16 125.00	16 125.00
B7.229		.5 Extra over the above for double door complete with ironmongery, etc	no	1	4 837.50	4 837.50
	8.34	Type SF002 Dwg 3089.92.00.SUA.16.F020				
B7.230		.1 Shopfront size 1100 x 3500mm high	no	1	8 600.00	8 600.00
B7.231		.2 Shopfront size 2750 x 3500mm high	no	1	15 050.00	15 050.00
B7.232		.3 Shopfront size 3230 x 3500mm high	no	1	16 125.00	16 125.00
B7.233		.4 Extra over the above for double door complete with ironmongery, etc	no	1	4 837.50	4 837.50
	8.35	Type SF003a Dwg 3089.92.00.SUA.16.F021				
B7.234		.1 Shopfront size 5770 x 3090mm high	no	1	36 077.00	36 077.00
B7.235		.2 Extra over the above for double door complete with ironmongery, etc	no	1	4 837.50	4 837.50
	8.36	Type SF003b Dwg 3089.92.00.SUA.16.F022				
B7.236		.1 Shopfront size 5770 x 6680mm high	no	1	36 077.00	36 077.00
	8.37	Type SF004				
					Carried Forward	25 257 805.24

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					Brought Forward	25 257 805.24
		Dwg 3089.92.00.SUA.16.F023				
B7.237		.1 Shopfront size 1490 x 3300mm high	no	1	9 675.00	9 675.00
B7.238		.2 Shopfront size 3090 x 3300mm high	no	1	16 125.00	16 125.00
B7.239		.3 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
	8.38	Type SF005 Dwg 3089.92.00.SUA.16.F024 Dwg 3089.92.00.SUA.16.F070				
B7.240		.1 Shopfront size 6200 x 2400mm high	no	1	24 187.50	24 187.50
B7.241		.2 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
B7.242		.3 Extra for applying frosted window film complete	no	1	3 225.00	3 225.00
	8.39	Type SF006 Dwg 3089.92.00.SUA.16.F025				
B7.243		.1 Shopfront size 2550 x 2400mm high	no	1	13 437.50	13 437.50
B7.244		.2 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
	8.40	Type SF007 Dwg 3089.92.00.SUA.16.F026				
B7.245		.1 Shopfront size 4760 x 2400mm high	no	1	32 088.75	32 088.75
B7.246		.2 Extra over the above for single opening window with ironmongery, etc	no	2	3 225.00	6 450.00
	8.41	Type SF008 Dwg 3089.92.00.SUA.16.F027				
B7.247		.1 Shopfront size 2760 x 2400mm high	no	1	16 125.00	16 125.00
B7.248		.2 Extra over the above for single opening window with ironmongery, etc	no	2	3 225.00	6 450.00
	8.42	Type SF009 Dwg 3089.92.00.SUA.16.F028 Dwg 3089.92.00.SUA.16.F068				
B7.249		.1 Shopfront size 2550 x 2400mm high	no	1	16 125.00	16 125.00
B7.250		.2 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
B7.251		.3 Extra for applying frosted window film complete	no	1	3 225.00	3 225.00
	8.43	Type SF010 Dwg 3089.92.00.SUA.16.F029				
					Carried Forward	25 417 818.99

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					Brought Forward	25 417 818.99
B7.252		.1 Shopfront size 5260 x 3260mm high	no	1	39 259.00	39 259.00
B7.253		.2 Extra over the above for single opening window with ironmongery, etc	no	2	3 225.00	6 450.00
	8.44	Type SF011 Dwg 3089.92.00.SUA.16.F030				
B7.254		.1 Shopfront size 5060 x 3260mm high	no	1	38 700.00	38 700.00
B7.255		.2 Extra over the above for single opening window with ironmongery, etc	no	2	3 225.00	6 450.00
	8.45	Type SF012 Dwg 3089.92.00.SUA.16.F031 Dwg 3089.92.00.SUA.16.F069				
B7.256		.1 Shopfront size 2850 x 3260mm high	no	1	10 750.00	10 750.00
B7.257		.2 Extra over the above for sliding door complete with ironmongery, etc	no	1	3 225.00	3 225.00
B7.258		.3 Extra for applying frosted window film complete	no	1	3 225.00	3 225.00
	8.46	Type SF013 Dwg 3089.92.00.SUA.16.F032				
B7.259		.1 Shopfront size 2000 x 2400mm high	no	2	9 675.00	19 350.00
	8.47	Type SF020 Dwg 3089.92.00.SUA.16.F033				
B7.260		.1 Shopfront size 5260 x 3260mm high	no	1	38 700.00	38 700.00
B7.261		.2 Extra over the above for single opening window with ironmongery, etc	no	2	3 225.00	6 450.00
	8.48	Type SF021 Dwg 3089.92.00.SUA.16.F034				
B7.262		.1 Shopfront size 5060 x 3259mm high	no	1	38 700.00	38 700.00
B7.263		.2 Extra over the above for single opening window with ironmongery, etc	no	2	3 225.00	6 450.00
	8.49	Type SF022 Dwg 3089.92.00.SUA.16.F035				
B7.264		.1 Shopfront size 4880 x 3260mm high	no	1	35 475.00	35 475.00
B7.265		.2 Extra over the above for single opening window with ironmongery, etc	no	2	3 225.00	6 450.00
	8.50	Type SF023 Dwg 3089.92.00.SUA.16.F036				
B7.266		.1 Shopfront size 2850 x 3260mm high	no	1	12 900.00	12 900.00
					Carried Forward	25 690 352.99

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					Brought Forward	25 690 352.99
B7.267		.2 Extra over the above for sliding door complete with ironmongery, etc	no	1	3 225.00	3 225.00
	8.51	Type SF024 Dwg 3089.92.00.SUA.16.F037				
B7.268		.1 Shopfront size 2500 x 2400mm high	no	1	10 750.00	10 750.00
B7.269		.2 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
	8.52	Type SF025 Dwg 3089.92.00.SUA.16.F038				
B7.270		.1 Shopfront size 1730 x 2400mm high	no	1	8 600.00	8 600.00
B7.271		.2 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
	8.53	Type SF026 Dwg 3089.92.00.SUA.16.F039				
B7.272		.1 Shopfront size 2500 x 2400mm high	no	1	10 750.00	10 750.00
B7.273		.2 Extra over the above for double door complete with ironmongery, etc	no	1	3 225.00	3 225.00
	PU	**SHOWER DOORS**				
		SHOWER DOORS				
	8.20	Aluglass Bautech - or other approved - framed Bi-glider shower door 1350mm wide x 1800mm high with silver grey powder coated aluminium frame and clear toughened safety glass fixed complete to manufacturers specifications.				
B7.274		.1 Shower door	no	2	6 041.50	12 083.00
	PU	**TOILET PARTITIONS**				
	8.20	Toilet partions and doors 2000mm high fixed complete as per manufacturers specifications Dwg 3089.92.00.SUA.16.F004				
B7.275		.1 Toilet partition 2m long	no	14	9 808.38	137 317.32
B7.276		.2 Toilet door 813 x 2000mm complete with ironmongery	no	14	5 593.47	78 308.58
	PU	**SKYLIGHTS**				
	8.20	Velux CFP white PVC fixed flat roof skylight - or similar approved - with laminate glass inner and acrylic protective dome installed to manufacturers specifications **Ref dwg 3089.92.00.SUA.16.U002 and 16 X001** Product code: CFP150150 and 73UT **(domed skylights)**				
					Carried Forward	25 961 061.89

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					Brought Forward	25 961 061.89
B7.277		.1 Skylight size **R=670mm**	no	1	8 761.25	8 761.25
B7.278		.2 Skylight size **R=2280mm (Segmented)**	no	4	14 888.75	59 555.00
B7.279		.3 Skylight size **R=1200mm**	no	6	29 562.50	177 375.00
		RAINWATER DISPOSAL				
	PU	**RAINWATER DISPOSAL**				
		GUTTERS				
	8.16	Gutters supplied and fixed complete, including all mitres, stopped ends, outlets, etc				
		1.2mm Powder coated aluminium				
B7.280		.1 Size 100 x 100mm	m	50	1 886.62	94 331.00
B7.281		.2 Size 150x 150mm	m	50	1 886.62	94 331.00
		DOWNPIPES				
	8.17	Rainwater pipes supplied and fixed complete, including offsets, shoes, etc				
		1.2mm Powder coated aluminium				
B7.282		.1 Size 100 x 100mm	m	20	1 886.62	37 732.40
B7.283		.2 Size 150 x 150mm	m	20	1 886.62	37 732.40
		DOWNPIPES				
	8.18	GMS rainwater pipes supplied and fixed complete to columns or walls, or cast into concrete columns or concrete floors, etc, including all bends, offsets, shoes, etc				
B7.284		.1 80mm Dia rainwater pipe	m	100	352.60	35 260.00
B7.285		.2 110mm Dia rainwater pipe	m	200	465.48	93 096.00
B7.286		.3 150mm Dia rainwater pipe	m	200	576.20	115 240.00
		FULLBORE OUTLETS				
	8.19	Fullbore type rainwater outlet cast into concrete and connected to GMS rainwater pipe complete				
B7.287		.1 80mm Dia	no	10	1 844.70	18 447.00
B7.288		.2 110mm Dia	no	20	2 500.99	50 019.80
B7.289		.3 150mm Dia	no	20	3 711.98	74 239.60
		JUNCTION BOXES				
					Carried Forward	26 857 182.34

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					Brought Forward	26 857 182.34
	8.20	Junction box size 300 x 300 x 300mm internally of concrete base and cover slab and one brick sides installed complete on ground floor level				
B7.290		.1 Junction box	no	20	722.40	14 448.00
		RAINWATER CHANNELS				
	8.21	Precast concrete rainwater channel size 450mm wide x 150mm thick x 1000mm long placed on ground surface below rainwater pipe outlet complete				
B7.291		.1 Rainwater channel	no	20	1 279.25	25 585.00
		PLASTER AND SCREED				
	PU	**SCREED**				
		SCREED				
	8.6	1:3 Cement screed with steel floated finish				
B7.292		.1 30mm Thick to floors	m²	1764	93.52	164 969.28
B7.293		.2 Ditto to landings	m²	4	93.52	374.08
B7.294		.3 Ditto to treads and risers of stairs	m²	21	212.85	4 469.85
B7.295		.4 60mm Average thick to floors to falls	m²	399	123.62	49 324.38
B7.296		.5 100mm Average thick to roofs to falls	m²	2100	203.18	426 678.00
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
B7.297		.1 Walls	m²	1040	105.35	109 564.00
B7.298		.2 Ditto in foundations	m²	105	109.65	11 513.25
B7.299		.3 Walls circular on plan	m²	221	121.48	26 847.08
B7.300		.4 Ditto in foundations	m²	53	124.70	6 609.10
B7.301		.5 Top and soffit of window surround slabs	m²	126	166.62	20 994.12
B7.302		.4 Soffit of concrete slabs	m²	326	98.90	32 241.40
		TWO COAT PLASTER				
	8.6	Two coat plaster consisting of one coat 1:6 cement plaster, including all narrow widths, angles, V-joints, etc finished with 6mm thick Rhinolite gypsum plaster coat steel floated to				
					Carried Forward	27 750 799.88

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					Brought Forward	27 750 799.88
B7.303		.1 Walls	m²	3318	193.50	642 033.00
B7.304		.2 Ditto circular on plan	m²	221	225.75	49 890.75
		TILING				
	PU	**TILING**				
		WALL TILING				
	8.7	Wall tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to plaster (plaster measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
B7.305		.1 Walls with 600 x 300mm porcelain tiles	m²	368	611.90	225 179.20
		FLOOR TILING				
	8.8	Floor tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to screed (screed measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
B7.306		.1 Floors with 600 x 600mm porcelain tiles	m²	368	619.01	227 795.68
B7.307		.2 Ditto to landings	m²	4	619.01	2 476.04
B7.308		.3 Ditto to treads and risers of stairs	m²	21	1 018.18	21 381.78
B7.309		.4 Ditto non slip tiles to falls	m²	399	619.01	246 984.99
	8.9	Tiling sundries				
B7.310		.1 150mm Tile skirting fixed to walls	m	158	135.30	21 377.40
B7.311		.2 150mm Tile skirting fixed over treads and risers of stairs	m	21	364.34	7 651.14
	8.10	Mosaic tiling (Allow R400.00/m² for purchasing and delivery of mosaics to site excluding VAT) fixed to screed (screed measured elsewhere) with approved tile adhesive and grouted with waterproof tile grout				
B7.312		.1 Shower floors	m²	10	1 010.68	10 106.80
	PU	**PAINTING**				
		PAINTING				
		Note:				
		All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions				
					Carried Forward	29 205 676.66

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					Brought Forward	29 205 676.66
		All paint to be of an approved colour as specified by the Architect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
B7.313		.1 Steel doors and frames	m²	20	107.50	2 150.00
B7.314		.2 General surfaces of structural steelwork	m²	100	198.88	19 888.00
B7.315		.3 Timber doors and frames	m²	200	107.50	21 500.00
B7.316		.4 Timber skirting's not exceeding 150mm girth	m	350	37.62	13 167.00
	8.19	Prepare and apply one coat Dulux Pre Paint Smooth over and two coats Dulux Trade 100 low sheen code T2001 paint to internal				
B7.317		.1 Plastered walls	m²	3330	66.65	221 944.50
B7.318		.2 Plastered or concrete ceilings	m²	326	64.50	21 027.00
B7.319		.3 Skimmed plasterboard ceilings	m²	435	64.50	28 057.50
B7.320		.4 Skimmed drywall partitions	m²	260	66.65	17 329.00
	8.20	Prepare and apply one coat Dulux Trade Primer code T1011 and two coats Dulux Pearlglo water based paint code D40 to internal				
B7.321		.2 Plastered walls in ablution areas	m²	210	66.65	13 996.50
	8.21	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wall guard (Code:D44) paint to external				
B7.322		.2 Plastered walls	m²	1418	68.80	97 558.40
B7.323		.3 Plastered or concrete ceilings	m²	200	66.65	13 330.00
B7.324		.4 Facias and barge boards	m²	50	66.65	3 332.50
	8.22	Extra over external painting to walls for painting plaster recess joint in different colour				
B7.325		.1 Recessed joint	m	500	23.65	11 825.00
		PLUMBING AND DRAINAGE				
	PU	**PLUMBING AND DRAINAGE**				
		PLUMBING AND DRAINAGE				
		Note:				
					Carried Forward	29 690 782.06

[redacted]

					Brought Forward	29 690 782.06
		Plumbing measured in elements (plumbing points) and shall be priced accordingly. Prices must include for supply and installation of all fittings, taps, supply and discharge piping from the fitting to the perimeter of the building face complete. Supply and discharge piping from the perimeter of the building up to the connection point on the site, will be measured separately, and must be priced accordingly. The external supply and discharge piping must include all items such as, excavation, bedding, backfilling, pipe fittings, manholes, etc complete				
		PLUMBING				
		Plumbing points in building Dwg 3089.92.00.SUA.16.F041				
		TOILETS				
	8.17	.1 Toilets				
B7.326		O.Novo white wall hung toilet pan (code 56601001) with O.Novo seat (code 9M396101) with Alpha 8c concealed cistern (code 110.179.001) and Alpha 10 face plate flush (code 115.040.11.1) installed complete to manufacturers instructions	no	16	7 912.30	126 596.80
	8.17	.2 Paraplegic toilets				
B7.327		Villeroy & Boch - O.Novo white wall hung paraplegic toilet pan (code 76011001) with seat and 80mm cistern Design Range (code 110.798.00.1) and Mambo flush plate (code 115.751.00.1) installed complete to manufacturers instructions	no	2	13 248.30	26 496.60
		HANDWASH BASINS				
	8.17	.3 Paraplegic hand wash basins				
B7.328		Villeroy & Boch - Subway 2.0 600 x 470mm basin (code 71136G01) fitted to wall with 10mm basin fixing bolts (code 13001) with 32mm slotted basin waste (code P8657) concealed chrome basin trap (code 151.120.21.1) installed complete to manufacturers instructions including Hansgrohe Focus Care 70 chrome basin mixer (code 31910223)	no	2	6 612.16	13 224.32
	8.17	.4 Hand wash basins				
B7.329		Villeroy & Boch - O.Novo 530 x 320mm undermount basin fitted to vanity slab (vanity slab measured elsewhere) installed complete to manufacturers instructions including Focus Electric chrome basin mixer (code 31174223)	no	9	12 436.97	111 932.73
		SINKS				
	8.20	.5 Canteen sink				
					Carried Forward	29 969 032.51

[redacted]

					Brought Forward	29 969 032.51
B7.330		Franke ZRX Model ZRX120b Grade 304 18/10 polished stainless steel double bowl undermount sink (code 1220009) size 840 x 470mm with two 380 x 420 x 200mm deep bowls fixed to granite top (granite top measured elsewhere) with Spazi F/2 plumbing kit (code 1120009) two 90mm waste fittings complete to manufacturers instructions including Lucido Swivel mixer (code 1150026) with overarm swivel spout, 15mm flexible connectors	no	1	7 916.26	7 916.26
	8.20	.6 Braai sink				
B7.331		Franke ZRX Model ZRX120b Grade 304 18/10 polished stainless steel double bowl undermount sink (code 1220009) size 840 x 470mm with two 380 x 420 x 200mm deep bowls fixed to granite top (granite top measured elsewhere) with Spazi F/2 plumbing kit (code 1120009) two 90mm waste fittings complete to manufacturers instructions including Lucido Swivel mixer (code 1150026) with overarm swivel spout, 15mm flexible connectors	no	1	7 894.76	7 894.76
	8.20	.7 Tea kitchen sink				
B7.332		Stainless steel single Blanko Tipo 45S sink (code BL00511942) with Spazio 1 kit, 50/90mm outlet (code 1120008) installed to manufacturers instructions including Meir Modern chrome kitchen mixer (code SMK03-C)	no	1	3 893.11	3 893.11
	8.20	.8 Tea kitchen sink				
B7.333		Stainless steel single Blanko Tipo 45S sink (code BL00511942) with Spazio 1 kit, 50/90mm outlet (code 1120008) installed to manufacturers instructions including Focus Care 70 chrome basin mixer (code 31910223)	no	1	3 893.44	3 893.44
	8.20	.9 Braai area prep bowl				
B7.334		Franke Rondo Model RDX610-45grade 304 18/10 polished stainless steel ingle prep bowl (code 1990012) size overall 450mm diameter with one 380mm dia x 161 mm deep bowl fitted into cupboard (cupboard measured elsewhere) including Spazi F/1 plumbing kit (code 1120008) and 90mm waste without overflow installed to manufacturers instructions including Meir Modern chrome kitchen mixer (code SMK03-C) installed to manufacturers instructions	no	1	3 893.44	3 893.44
	8.20	.10 Passage sink				
					Carried Forward	29 996 523.52

[redacted]

					Brought Forward	29 996 523.52
B7.335		Franke Rondo Model RDX610-45grade 304 18/10 polished stainless steel ingle prep bowl (code 1990012) size overall 450mm diameter with one 380mm dia x 161 mm deep bowl fitted into cupboard (cupboard measured elsewhere) including Spazi F/1 plumbing kit (code 1120008) and 90mm waste without overflow and inset bin (code 1340003) installed to manufacturers instructions including Meir Modern chrome kitchen mixer (code SMK03-C) installed to manufacturers instructions	no	1	3 893.44	3 893.44
	8.17	.11 Urinal bowl				
B7.336		Villeroy & Boch - Subway wall mounted white urinal (no lid) (code 75130001) with flush installation set (code 116.003.00.1) with Sigma urinal flush plate (code 116.011.11.5) with urinal trap (code 152.950.11.10) and urinal division (code 11.202.11.1) installed complete to manufacturers instructions	no	4	12 787.12	51 148.48
		SHOWERS				
	8.20	.12 Shower				
B7.337		900 x 900 x 120mm Acrylic Perspex white shower tray from approved supplier fixed to floors complete and sealing edges with approved silicone sealant with Kessel shower trap with horizontal outlet (code 40150.20) installed to suppliers instructions including Meir chrome shower mixer (code MN03-C) and Chroma 100 vario shower rose (code 27441000) and Selecta plus arm (code 27411) installed to manufacturers instructions	no	3	3 913.00	11 739.00
		GEYSERS				
	8.20	.13 Geyser				
B7.338		200 Liter geyser	no	3	12 951.49	38 854.47
		FIRE FIGHTING				
	8.20	.14 Fire hose reel				
B7.339		20m Fire hose reel including two fire extinguishers	no	4	6 385.65	25 542.60
	PU	**DRAINAGE**				
	8.15	External supply and discharge piping, etc				
B7.340		.1 20mm Dia HDPE water supply in ground	m	200	8.58	1 716.00
B7.341		.2 32mm Dia HDPE water supply in ground	m	200	23.27	4 654.00
B7.342		.3 110mm Dia uPVC sewer pipe in ground	m	200	143.51	28 702.00
B7.343		.4 160mm Dia uPVC sewer pipe in ground	m	200	349.91	69 982.00
B7.344		.7 20mm Yard stand tap	no	10	209.59	2 095.90
					Carried Forward	30 234 851.41

[redacted]

					Brought Forward	30 234 851.41
	PU	**VANITY SLABS**				
	8.20	Vanity slabs Caesar stone Classico 20mm thick pure white code 1141 with 150mm fascia, approved support brackets and silicone sealant fixed complete to manufacturers instructions'900 x 900 x 120mm Acrylic Perspex white shower tray from approved supplier fixed to floors complete and sealing edges with approved silicone sealant Dwg 3089.92.00.SUA.16.F040				
B7.345		.1 1500mm Long with hand wash basin cut outs	no	1	6 633.43	6 633.43
B7.346		.2 2000mm Long with hand wash basin cut outs	no	3	9 375.24	28 125.72
B7.347		.3 4200mm Long with hand wash basin cut outs	no	1	18 573.58	18 573.58
B7.348		.4 6100mm Long with hand wash basin cut outs	no	1	26 975.92	26 975.92
	PU	**BATHROOM FITTINGS**				
	8.20	Bathroom fittings				
B7.349		.1 F16C stainless steel grade 304 cistern grab rail 750 x 220mm and F14C grab rail 300x 300 x 300mm installed complete as per supplier instructions	set	2	2 272.67	4 545.34
B7.350		.2 Franke Rodan RODX605 0,8mm thick satin finished stainless steel waste bin (code 2120097) size 355 x 168 x 460mm high with capacity of 23 litres and cylinder lock and standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	9	4 336.67	39 030.03
B7.351		.3 Franke HF2400HD 1,2/1,5mm thick stainless steel satin finished automatic hand free hand dryer (code 2500001) size 280 x 207 x 245mm high with two vandal proof lock screws and key wrench, fixed to walls with stainless steel screws and 200W motor connected to power supply as per suppliers instructions	no	8	14 015.58	112 124.64
B7.352		.4 Franke Rodan RODX625 0,8mm thick satin finished stainless steel soap dispenser (code 2120107) size 120 x 107 x 296mm high fixed to wall with stainless steel screws as per suppliers instructions	no	11	3 229.62	35 525.82
B7.353		.5 Franke Rodan RODX600 0,8mm thick satin finished stainless steel paper towel dispenser (code 2120099) size 275 x 112 x 355mm high with capacity of 500-800 towels, inspection window on the side with Franke standard key, fixed to wall with stainless steel screws as per suppliers instructions	no	9	3 074.50	27 670.50
					Carried Forward	30 534 056.39

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					Brought Forward	30 534 056.39
B7.354		.6 Franke Rodan RODX672 0,8mm thick satin finished stainless steel double toilet roll holder (code 2120101) size 144 x 138 x 301mm high for two rolls maximum, 120mm diameter with cylinder lock with standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	9	3 728.77	33 558.93
		STRUCTURAL STEELWORK				
	SANS 1200 H	**STRUCTURAL STEELWORK MEASURED IN DETAIL**				
		SHOP DRAWINGS				
		SHOP DRAWINGS				
	8.3.1	.1 Preparation of shop detail drawings and submit for approval				
B7.355		.1 Structural steelwork.	ton	5	1 075.00	5 375.00
		SUPPLY AND FABRICATE				
		SUPPLY AND FABRICATION				
		SINGLE SECTION STEELWORK				
		Single section steelwork				
	8.3.1	.2 .1 .1 Single section columns and posts with cap and base plates, stiffeners, splice material, etc				
B7.356		.1 254 x 254 x 73kg/m I-section column	ton	2	34 400.00	68 800.00
B7.357		.2 152 x 152 x 23kg/m H-section column	ton	2	34 400.00	68 800.00
	8.3.1	.2 .1 .2 Single section beams, girders and rafters including connections, stiffeners, splice material, etc				
B7.358		.1 254 x 146 x 31kg/m I-section floor beam	ton	2	34 400.00	68 800.00
B7.359		.2 254 x 146 x 31kg/m I-section rafter	ton	2	34 400.00	68 800.00
B7.360		.3 533 x 210 x 92kg/m I-section crane	ton	2	34 400.00	68 800.00
		LATTICE STEELWORK				
		Lattice steelwork				
	8.3.1	.2 .2 .1 Lattice trusses and girders including connections stiffeners, splice material, etc				
					Carried Forward	30 916 990.32

					Brought Forward	30 916 990.32
B7.361		.1 5 No of, triangular shaped flat roof	ton	3	36 550.00	109 650.00
		BRACING				
		Bracing				
	8.3.1	.2 .3 .1 Hot rolled sections				
B7.362		.1 76 x 76 x 6mm Angle section roof	ton	0.5	34 400.00	17 200.00
B7.363		.2 80 x 80 x 6mm Angle section floor	ton	0.5	34 400.00	17 200.00
	8.3.1	.2 .3 .2 Hollow sections				
B7.364		.1 60 x 60 x 2mm Square section roof	ton	0.5	40 850.00	20 425.00
		CLADDING SUPPORT				
		Cladding support				
	8.3.1	.2 .4 .1 Hot rolled sections				
B7.365		.1 76 x 76 x 6mm Angle section sag	ton	1	34 400.00	34 400.00
	8.3.1	.2 .4 .2 Cold rolled sections				
B7.366		.1 125 x 75 x 2,5mm Lipped channel	ton	1	34 400.00	34 400.00
		GUTTERS AND RAINWATER PIPES				
		Gutters and rainwater pipes				
	8.3.1	.2 .6 .1 Galvanized mild steel				
B7.367		.1 3mm Thick box gutter, 900mm girth 6	m	200	1 236.25	247 250.00
B7.368		.2 Extra for stopped end	no	10	-	Included
B7.369		.3 Extra for 90° bend	no	10	-	Included
B7.370		.4 Extra for 150mm diameter outlet	no	10	-	Included
B7.371		.5 1mm Thick 150mm diameter rainwater	m	10	548.25	5 482.50
B7.372		.6 Extra for 45° bend	no	10	548.25	5 482.50
		FASTENERS				
					Carried Forward	31 408 480.32

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					Brought Forward	31 408 480.32
	8.3.1	.2 .8 Fasteners				
B7.373		.1 Class 4.8 bolts with nuts and washers	ton	0.5	107 500.00	53 750.00
B7.374		.2 Class 8.8 bolts with nuts and washers	ton	0.5	107 500.00	53 750.00
B7.375		.3 15mm Diameter expansion bolt 150mm long	no	100	268.75	26 875.00
		TRANSPORT				
		Transport steelwork to site				
	8.3.2	.1 Normal transport				
B7.376		.1 Structural steelwork	ton	16.5	1 075.00	17 737.50
B7.377		.2 Steel flooring	m²	100	3 225.00	322 500.00
B7.378		.3 Gutters and rainwater pipes	m	200	26.88	5 376.00
B7.379		.4 Stairs	ton	5	1 075.00	5 375.00
		ERECTION				
		ERECTION				
		Off loading of steelwork on site, storage and erection				
	8.3.3	.1 Structural steelwork				
B7.380		.1 Structural steelwork	ton	16.5	5 375.00	88 687.50
	8.3.3	.3 Gutters and rainwater pipes				
B7.381		.1 Box gutter	m	200	134.38	26 876.00
B7.382		.2 150mm Diameter rainwater pipe	m	200	134.38	26 876.00
	8.3.4	Erection bolts				
B7.383		.1 Class 4.8 bolts with nuts and washers	ton	0.5	10 750.00	5 375.00
B7.384		.2 Class 8.8 bolts with nuts and washers	ton	0.5	10 750.00	5 375.00
	8.3.6	Holding down bolts				
B7.385		.1 Drilling and fixing expansion bolt in concrete	no	100	107.50	10 750.00
		CORROSION PROTECTION				
	SANS 1200H	**CORROSION PROTECTION**				
		Extra over reference 8.3.1 to 8.3.9 for corrosion protection				
		AT WORKSHOP				
	8.3.13	.1 .1 Mechanical wire brush or light blast to remove all mill scale and apply one coat high build Zinc Phosphate primer to 50 micron DFT				
B7.386		.1 General surfaces of structural steel	m²	200	107.50	21 500.00
					Carried Forward	32 079 283.32

[redacted]

					Brought Forward	32 079 283.32
B7.387		.2 External surface of box gutters	m²	100	107.50	10 750.00
	8.3.13	.1 .2 Mechanical wire brush or light blast to remove all mill scale and apply one coat epoxy tar to 75 micron DFT				
B7.388		.1 Internal surface of box gutters	m²	150	107.50	16 125.00
	8.3.13	.1 .3 Hot dipped galvanising				
B7.389		.1 Structural steel	ton	16.5	11 825.00	195 112.50
		ON SITE AFTER ERECTION				
	8.3.13	.2 .1 Repair damaged primer coat and apply one coat universal undercoat to 25um DFT and one coat gloss enamel finish to 30 micron DFT				
B7.390		.1 General surfaces of structural steel	m²	100	136.52	13 652.00
B7.391		.2 External surface of box gutters	m²	100	136.52	13 652.00
	8.3.13	.2 .2 Repair damaged epoxy tar coat and apply one coat epoxy tar to 75 micron DFT				
B7.392		.1 Internal surface of box gutters	m²	100	153.72	15 372.00
		SUPPLY, FABRICATE AND ERECT STEELWORK - ALL INCLUSIVE				
		HANDRAILS				
	8.3.7	(a) Hot dip galvanised handrail assembly installed complete				
B7.393		.1 Handrail assembly complete	sum	-	698.75	698.75
		LADDERS				
	8.3.8	(a) Hot dip galvanised ladders installed complete				
B7.394		.1 Ladder 4m long	no	5	17 200.00	86 000.00
	8.3.8	(b) Stainless steel ladders installed complete				
B7.395		.1 Ladder 4m long	no	5	22 252.50	111 262.50
		SUPPLY, FABRICATE AND ERECT STEEL GLASS BALUSTRADES COMPLETE				
		GLASS BALUSTRADES				
	8.3.9	Glass balustrade with stainless steel top rail and 12mm thick laminated safety glass infills, installed complete to manufacturers specifications Dwg 3089.92.00.SUA.16.F044				
B7.396		.1 Balustrade 1m high	m	60	6 733.70	404 022.00
					Carried Forward	32 945 930.07

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					Brought Forward	32 945 930.07
B7.397		.2 Balustrade 1m high circular on plan	m	10	6 733.70	67 337.00
		CLADDING AND SHEETING				
	SANS 1200 HB	**CLADDING AND SHEETING**				
		Supply, deliver to site and fix cladding and sheeting including all necessary approved fasteners, closures, seals, etc and cutting and notching complete (colour dark green)				
		ROOF SHEETING				
		Roof sheeting				
	8.2.2	.1 .3 0,58mm Klip-Lok 700 Chromadek Z200 galvanised and colour coated both sides roof sheeting fixed to				
B7.398		.2 Steel purlins	m²	1700	335.60	570 520.00
	8.2.2	.1 .4 0,8mm Klip-Lok 700 Chromadek Z200 galvanised and colour coated both sides roof sheeting fixed to				
B7.399		.2 Steel purlins	m²	1700	361.88	615 196.00
		VERTICAL CLADDING				
		Vertical cladding				
	8.2.2	.2 .2 0,58mm Klip-Lok 700 Chromadek Z200 galvanised and colour coated both sides roof sheeting fixed to				
B7.400		.2 Steel rails	m²	425	338.59	143 900.75
		ANCILLARIES				
		Ancillaries				
		Supply, deliver to site and fix all ancillaries including all necessary approved fasteners, closures, seals, etc and cutting and notching complete (colour dark green)				
	8.2.3	.1 Chromadek ridging				
B7.401		.1 0,6mm Ridge capping 450mm girth 3 times bent along length	m	400	310.52	124 208.00
	8.2.3	.2 Chromadek flashings				
B7.402		.1 0,6mm Stepped sidewall flashing 350mm girth 2 times bent along length	m	400	220.96	88 384.00
B7.403		.2 0,6mm Headwall flashing 300mm girth 2 times bent along length	m	400	244.84	97 936.00
		INSULATION				
					Carried Forward	34 653 411.82

					Brought Forward	34 653 411.82
		INSULATION				
	8.2.3	Supply, deliver to site and fix Sisalation 420 roof insulation, including all galvanised wire support work, cutting and notching complete to				
B7.404		.7 Underside of roof sheeting	m²	1700	51.35	87 295.00
B7.405		.8 Behind vertical cladding	m²	425	53.15	22 588.75
		BILL NO. B7 **MANAGEMENT BUILDING - SUA**				
		Carried forward to Summary of Bills			**Total**	34 763 295.57

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - B				
		MANAGEMENT BUILDING				
		B6 - Building works				
		BILL NO. B8 **JOINERY - SUA**				
	PU	**JOINERY**				
		JOINERY				
	8.9	Purpose made joinery fittings supplied and installed complete with ironmongery, etc to manufacturers specification. And sealing all round frames adjoining walls, ceilings, floors, etc with approved sealant Note: Refer to the following drawings for position of joinery Dwg 3089.92.00.SUA.16.F002 & F003				
	8.10	Meeting room units Joinery item J1 Dwg 3089.92.00.SUA.16.F045				
B8.1		.1 Complete installation as shown on drawings	no	3	30 007.55	90 022.65
	8.11	Office built in cupboards for lever arch files Joinery item J2 Dwg 3089.92.00.SUA.16.F046				
B8.2		.1 Complete installation as shown on drawings	no	13	5 640.52	73 326.76
	8.12	Office wall mounted open shelves Joinery item J3 Dwg 3089.92.00.SUA.16.F047				
B8.3		.1 Complete installation as shown on drawings	no	13	10 144.78	131 882.14
	8.13	Library open shelves Joinery item J4 Dwg 3089.92.00.SUA.16.F048				
B8.4		.1 Complete installation as shown on drawings	no	13	25 079.75	326 036.75
	8.14	Breakaway space open shelves Joinery item J5 Dwg 3089.92.00.SUA.16.F049				
B8.5		.1 Complete installation as shown on drawings	no	4	23 378.02	93 512.08
	8.15	Breakaway space wall units Joinery item J6 Dwg 3089.92.00.SUA.16.F050				
B8.6		.1 Complete installation as shown on drawings	no	4	12 772.08	51 088.32
					Carried Forward	765 868.70

					Brought Forward	765 868.70
	8.16	Breakaway space seating pod Joinery item J7 Dwg 3089.92.00.SUA.16.F051				
B8.7		.1 Complete installation as shown on drawings	no	1	122 937.00	122 937.00
	8.17	Canteen counters Joinery item J8 Dwg 3089.92.00.SUA.16.F052 & F053				
B8.8		.1 Complete installation as shown on drawings	no	1	203 537.28	203 537.28
	8.18	Canteen interior booths Joinery item J9 Dwg 3089.92.00.SUA.16.F054				
B8.9		.1 Complete installation as shown on drawings	no	5	55 948.38	279 741.90
	8.19	Canteen exterior booths Joinery item J10 Dwg 3089.92.00.SUA.16.F055				
B8.10		.1 Complete installation as shown on drawings	no	6	64 287.15	385 722.90
	8.20	Built in canteen bench Joinery item J11 Dwg 3089.92.00.SUA.16.F056				
B8.11		.1 Complete installation as shown on drawings	no	1	88 795.00	88 795.00
	8.21	Kitchen Counter Joinery item J12 Dwg 3089.92.00.SUA.16.F057				
B8.12		.1 Complete installation as shown on drawings	no	1	59 938.78	59 938.78
	8.22	Braai area counter Joinery item J13 Dwg 3089.92.00.SUA.16.F058				
B8.13		.1 Complete installation as shown on drawings	no	1	69 284.82	69 284.82
	8.23	Reception desk Joinery item J14 Dwg 3089.92.00.SUA.16.F060				
B8.14		.1 Complete installation as shown on drawings	no	1	146 147.32	146 147.32
	8.24	Electrical built in cupboard in hallway Joinery Item J15 Dwg 3089.92.00.SUA.16.F061				
B8.15		.1 Complete installation as shown on drawings	no	2	14 951.10	29 902.20
					Carried Forward	2 151 875.90

					Brought Forward	2 151 875.90
	8.25	Meeting room units Joinery item J16 Dwg 3089.92.00.SUA.16.F062				
B8.16		.1 Complete installation as shown on drawings	no	2	20 234.72	40 469.44
	8.26	Beverage pods Joinery Item J17 Dwg 3089.92.00.SUA.F063				
B8.17		.1 Complete installation as shown on drawings	no	2	20 234.72	40 469.44
	8.27	Open shelves for control room Joinery item J18 Dwg 3089.92.00.SUA.16.F064				
B8.18		.1 Complete installation as shown on drawings	no	1	63 177.75	63 177.75
	8.28	50 Person boardroom table Joinery Item J19 Dwg 3089.92.00.SUA.F065				
B8.19		.1 Complete installation as shown on drawings	no	1	269 997.00	269 997.00
	PU	**FURNITURE**				
		FURNITURE Note: Refer to the following drawings for position of joinery Dwg 3089.92.00.SUA.16.F002 & F003				
	8.20	Classical Chair Furniture item 1.1 Dwg 3089.92.00.SUA.16.D001				
B8.20		.1 Complete installation as shown on drawings	no	50	4 647.73	232 386.50
	8.21	Holy Cube Tall Planter with artificial plant Furniture item 1.2 Dwg 3089.92.00.SUA.16.D001				
B8.21		.1 Complete installation as shown on drawings	no	2	2 686.42	5 372.84
	8.22	Artificial plant Furniture item 1.3 Dwg 3089.92.00.SUA.16.D001				
B8.22		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
	8.23	Wall Art Furniture item 1.4 Dwg 3089.92.00.SUA.16.D001				
						2 804 931.37

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					Brought Forward	2 804 931.37
		.1 Work as instructed by the Engineer				
B8.23		.1 Work as instructed by the Engineer	Prov sum		5 000.00	5 000.00
B8.24		.2 Overheads, charges and profit on above	%		10%	500.00
	8.24	Curtains Furniture item 1.5 Dwg 3089.92.00.SUA.16.D001				
B8.25		.1 Complete installation as shown on drawings	no	1	53 181.32	53 181.32
	8.25	Block Out Roller Blinds Furniture item 1.6 Dwg 3089.92.00.SUA.16.D001				
B8.26		.1 Complete installation as shown on drawings	no	1	64 054.95	64 054.95
	8.26	Block Out Roller Blinds Furniture item 1.7 Dwg 3089.92.00.SUA.16.D001				
B8.27		.1 Complete installation as shown on drawings	no	3	1 119.08	3 357.24
	8.27	Block Out Roller Blinds Furniture item 1.8 Dwg 3089.92.00.SUA.16.D001				
B8.28		.1 Complete installation as shown on drawings	no	1	2 532.38	2 532.38
	8.28	Ecocentric Boardroom table for 20 people Furniture item 2.1 Dwg 3089.92.00.SUA.16.D001				
B8.29		.1 Complete installation as shown on drawings	no	1	16 790.68	16 790.68
	8.29	Classical Chair Furniture item 2.2 Dwg 3089.92.00.SUA.16.D001				
B8.30		.1 Complete installation as shown on drawings	no	20	4 647.73	92 954.60
	8.30	Holy Cube Tall Planter with artificial plant Furniture item 2.3 Dwg 3089.92.00.SUA.16.D001				
B8.31		.1 Complete installation as shown on drawings	no	2	2 686.42	5 372.84
		Artificial plant Furniture item 2.4 Dwg 3089.92.00.SUA.16.D001				
B8.32		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
	8.32	Wall Art Furniture item 2.5 Dwg 3089.92.00.SUA.16.D001				
		.1 Work as instructed by the Engineer				
					Carried Forward	3 049 857.88

					Brought Forward	3 049 857.88
B8.33		.1 Work as instructed by the Engineer	Prov sum		5 000.00	5 000.00
B8.34		.2 Overheads, charges and profit on above	%		10%	500.00
	8.33	Curtains Furniture item 2.6 Dwg 3089.92.00.SUA.16.D001				
B8.35		.1 Complete installation as shown on drawings	no	1	12 508.70	12 508.70
	8.34	Block Out Roller Blinds Furniture item 2.7 Dwg 3089.92.00.SUA.16.D001				
B8.36		.1 Complete installation as shown on drawings	no	1	16 120.70	16 120.70
	8.35	Desk Furniture item 3.1 Dwg 3089.92.00.SUA.16.D001				
B8.37		.1 Complete installation as shown on drawings	no	10	13 054.25	130 542.50
	8.36	Visitors Chair: Messi Furniture item 3.2 Dwg 3089.92.00.SUA.16.D001				
B8.38		.1 Complete installation as shown on drawings	no	20	4 858.25	97 165.00
	8.37	DHL Chair Furniture item 3.3 Dwg 3089.92.00.SUA.16.D001				
B8.39		.1 Complete installation as shown on drawings	no	10	4 250.90	42 509.00
	8.38	Vera 2 seater sofa Furniture item 3.4 Dwg 3089.92.00.SUA.16.D001				
B8.40		.1 Complete installation as shown on drawings	no	10	15 371.42	153 714.20
	8.39	Swazi wood coffee table Furniture item 3.5 Dwg 3089.92.00.SUA.16.D001				
B8.41		.1 Complete installation as shown on drawings	no	10	7 358.38	73 583.80
	8.40	Holy Cube Tall Planter with artificial plant Furniture item 3.6 Dwg 3089.92.00.SUA.16.D001				
B8.42		.1 Complete installation as shown on drawings	no	10	2 686.42	26 864.20
	8.41	Artificial plant Furniture item 3.7 Dwg 3089.92.00.SUA.16.D001				
B8.43		.1 Complete installation as shown on drawings	no	10	591.25	5 912.50
	8.42	Ecocentric Filing Cabinets				
						3 614 278.48

						3 614 278.48
		Furniture item 3.8 Dwg 3089.92.00.SUA.16.D001				
B8.44		.1 Complete installation as shown on drawings	no	10	5 757.82	57 578.20
	8.43	Drawer for drawings Furniture item 3.9 Dwg 3089.92.00.SUA.16.D001				
B8.45		.1 Complete installation as shown on drawings	no	10	14 408.20	144 082.00
	8.44	Canvas Wall Art Furniture item 3.10 Dwg 3089.92.00.SUA.16.D001				
		.1 Work as instructed by the Engineer				
B8.46		.1 Work as instructed by the Engineer	Prov sum		15 000.00	15 000.00
B8.47		.2 Overheads, charges and profit on above	%		10%	1 500.00
	8.45	Block Out Roller blinds Furniture item 4.1 Dwg 3089.92.00.SUA.16.D001				
B8.48		.1 Complete installation as shown on drawings	no	14	2 532.38	35 453.32
	8.46	Block Out Roller blinds Furniture item 4.2 Dwg 3089.92.00.SUA.16.D001				
B8.49		.1 Complete installation as shown on drawings	no	15	1 119.18	16 787.70
	8.47	Wire table with yellow legs Furniture item 5.1 Dwg 3089.92.00.SUA.16.D001				
B8.50		.1 Complete installation as shown on drawings	no	4	3 678.30	14 713.20
	8.48	Kicca one chair Furniture item 5.2 Dwg 3089.92.00.SUA.16.D001				
B8.51		.1 Complete installation as shown on drawings	no	16	1 689.55	27 032.80
	8.49	Canvas Wall Art Furniture item 5.3 Dwg 3089.92.00.SUA.16.D001				
		.1 Work as instructed by the Engineer				
B8.52		.1 Work as instructed by the Engineer	Prov sum		1 500.00	1 500.00
B8.53		.2 Overheads, charges and profit on above	%		10%	150.00
	8.50	Holy Cube Short Planter with artificial plant Furniture item 5.4 Dwg 3089.92.00.SUA.16.D001				
					Carried Forward	3 928 075.70

					Brought Forward	3 928 075.70
B8.54		.1 Complete installation as shown on drawings	no	4	3 546.42	14 185.68
	8.51	Artificial plant Furniture item 5.5 Dwg 3089.92.00.SUA.16.D001				
B8.55		.1 Complete installation as shown on drawings	no	4	698.75	2 795.00
	8.52	Conrad armchairs Furniture item 6.1 Dwg 3089.92.00.SUA.16.D001				
B8.56		.1 Complete installation as shown on drawings	no	4	9 458.92	37 835.68
	8.53	Conrad 3 seater sofa Furniture item 6.2 Dwg 3089.92.00.SUA.16.D001				
B8.57		.1 Complete installation as shown on drawings	no	1	17 736.42	17 736.42
	8.54	Christina Chair Natural Furniture item 6.3 Dwg 3089.92.00.SUA.16.D001				
B8.58		.1 Complete installation as shown on drawings	no	2	4 597.78	9 195.56
	8.55	Swazi wood coffee table Furniture item 6.4 Dwg 3089.92.00.SUA.16.D001				
B8.59		.1 Complete installation as shown on drawings	no	1	7 358.38	7 358.38
	8.56	Holy Cube Short Planter with artificial plant Furniture item 6.5 Dwg 3089.92.00.SUA.16.D001				
B8.60		.1 Complete installation as shown on drawings	no	2	3 546.42	7 092.84
	8.57	Artificial plant Furniture item 6.6 Dwg 3089.92.00.SUA.16.D001				
B8.61		.1 Complete installation as shown on drawings	no	2	698.75	1 397.50
	8.58	Canvas Wall Art Furniture item 6.7 Dwg 3089.92.00.SUA.16.D001				
		.1 Work as instructed by the Engineer				
B8.62		.1 Work as instructed by the Engineer	Prov sum		1 500.00	1 500.00
B8.63		.2 Overheads, charges and profit on above	%		10%	150.00
	8.59	Conrad armchairs Furniture item 7.1 Dwg 3089.92.00.SUA.16.D001				
B8.64		.1 Complete installation as shown on drawings	no	10	9 458.92	94 589.20
					Carried Forward	4 121 911.96

					Brought Forward	4 121 911.96
	8.60	Conrad 3 seater sofa Furniture item 7.2 Dwg 3089.92.00.SUA.16.D001				
B8.65		.1 Complete installation as shown on drawings	no	3	17 736.42	53 209.26
	8.61	Swazi wood coffee table Furniture item 7.3 Dwg 3089.92.00.SUA.16.D001				
B8.66		.1 Complete installation as shown on drawings	no	3	7 358.38	22 075.14
	8.62	Holy Cube Short Planter with artificial plant Furniture item 7.4 Dwg 3089.92.00.SUA.16.D001				
B8.67		.1 Complete installation as shown on drawings	no	6	3 546.42	21 278.52
	8.63	Artificial plant Furniture item 7.5 Dwg 3089.92.00.SUA.16.D001				
B8.68		.1 Complete installation as shown on drawings	no	6	698.75	4 192.50
	8.64	Round Rug Furniture item 7.6 Dwg 3089.92.00.SUA.16.D001				
B8.69		.1 Complete installation as shown on drawings	no	3	3 271.74	9 815.22
	8.65	Canvas Wall Art Furniture item 7.7 Dwg 3089.92.00.SUA.16.D001				
		.1 Work as instructed by the Engineer				
B8.70		.1 Work as instructed by the Engineer	Prov sum		10 000.00	10 000.00
B8.71		.2 Overheads, charges and profit on above	%		10%	1 000.00
	8.66	Wire table with yellow legs Furniture item 8.1 Dwg 3089.92.00.SUA.16.D001				
B8.72		.1 Complete installation as shown on drawings	no	15	1 887.15	28 307.25
	8.67	Cool chair Furniture item 8.2 Dwg 3089.92.00.SUA.16.D001				
B8.73		.1 Complete installation as shown on drawings	no	60	1 286.04	77 162.40
	8.68	Holy Cube Long Planter with artificial plant Furniture item 8.3 Dwg 3089.92.00.SUA.16.D001				
B8.74		.1 Complete installation as shown on drawings	no	17	3 546.42	60 289.14
	8.69	Artificial plant				
					Carried Forward	4 409 241.39

					Brought Forward	4 409 241.39
		Furniture item 8.4 Dwg 3089.92.00.SUA.16.D002				
B8.75		.1 Complete installation as shown on drawings	no	17	591.25	10 051.25
	8.70	4 Seater KPA Bench Furniture item 8.5 Dwg 3089.92.00.SUA.16.D002				
B8.76		.1 Complete installation as shown on drawings	no	4	5 122.38	20 489.52
	8.71	6 Seater KPA Table Furniture item 8.6 Dwg 3089.92.00.SUA.16.D002				
B8.77		.1 Complete installation as shown on drawings	no	2	15 424.10	30 848.20
	8.72	Wall Art Furniture item 8.7 Dwg 3089.92.00.SUA.16.D002				
		.1 Work as instructed by the Engineer				
B8.78		.1 Work as instructed by the Engineer	Prov sum		5 000.00	5 000.00
B8.79		.2 Overheads, charges and profit on above	%		10%	500.00
	8.73	Bulk Filers & Height Adjustable Shelving Furniture item 9.1 Dwg 3089.92.00.SUA.16.D002				
B8.80		.1 Complete installation as shown on drawings	no	1	329 306.90	329 306.90
	8.74	Bookcase Furniture item 9.2 Dwg 3089.92.00.SUA.16.D002				
B8.81		.1 Complete installation as shown on drawings	no	12	3 702.30	44 427.60
	8.75	Safe Furniture item 9.3 Dwg 3089.92.00.SUA.16.D002				
B8.82		.1 Complete installation as shown on drawings	no	4	3 702.30	14 809.20
	8.76	Holy Cube Long Planter with artificial plant Furniture item 10.1 Dwg 3089.92.00.SUA.16.D002				
B8.83		.1 Complete installation as shown on drawings	no	2	3 546.42	7 092.84
	8.77	Artificial plant Furniture item 10.2 Dwg 3089.92.00.SUA.16.D002				
B8.84		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
	8.78	Wire table with yellow legs				
					Carried Forward	4 872 949.40

					Brought Forward	4 872 949.40
		Furniture item 11.1 Dwg 3089.92.00.SUA.16.D002				
B8.85		.1 Complete installation as shown on drawings	no	3	1 887.15	5 661.45
	8.79	Kicca one chair Furniture item 11.2 Dwg 3089.92.00.SUA.16.D002				
B8.86		.1 Complete installation as shown on drawings	no	12	1 689.55	20 274.60
	8.80	Wire table with yellow legs Furniture item 12.1 Dwg 3089.92.00.SUA.16.D002				
B8.87		.1 Complete installation as shown on drawings	no	2	1 887.15	3 774.30
	8.81	Kicca one chair Furniture item 12.2 Dwg 3089.92.00.SUA.16.D002				
B8.88		.1 Complete installation as shown on drawings	no	8	1 887.15	15 097.20
	8.82	Conrad 3 seater sofa Furniture item 12.3 Dwg 3089.92.00.SUA.16.D002				
B8.89		.1 Complete installation as shown on drawings	no	2	17 736.42	35 472.84
	8.83	Holy Cube Tall Planter with artificial plant Furniture item 12.4 Dwg 3089.92.00.SUA.16.D002				
B8.90		.1 Complete installation as shown on drawings	no	2	2 686.42	5 372.84
	8.84	Artificial plant Furniture item 12.5 Dwg 3089.92.00.SUA.16.D002				
B8.91		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
	8.85	Swazi wood coffee table Furniture item 12.6 Dwg 3089.92.00.SUA.16.D002				
B8.92		.1 Complete installation as shown on drawings	no	2	7 358.38	14 716.76
	8.86	Wall Art Furniture item 12.7 Dwg 3089.92.00.SUA.16.D002				
		.1 Work as instructed by the Engineer				
B8.93		.1 Work as instructed by the Engineer	Prov sum		5 000.00	5 000.00
B8.94		.2 Overheads, charges and profit on above	%		10%	500.00
	8.87	Visitors Chair: Messi Furniture item 13.1				
					Carried Forward	4 980 001.89

					Brought Forward	4 980 001.89
		Dwg 3089.92.00.SUA.16.D002				
B8.95		.1 Complete installation as shown on drawings	no	6	4 858.25	29 149.50
	8.88	DHL Chair Furniture item 13.2 Dwg 3089.92.00.SUA.16.D002				
B8.96		.1 Complete installation as shown on drawings	no	3	4 250.90	12 752.70
	8.89	Conrad armchairs Furniture item 13.3 Dwg 3089.92.00.SUA.16.D002				
B8.97		.1 Complete installation as shown on drawings	no	6	9 458.92	56 753.52
	8.90	Swazi wood coffee table Furniture item 13.4 Dwg 3089.92.00.SUA.16.D002				
B8.98		.1 Complete installation as shown on drawings	no	3	7 358.38	22 075.14
	8.91	Holy Cube Tall Planter with artificial plant Furniture item 13.5 Dwg 3089.92.00.SUA.16.D002				
B8.99		.1 Complete installation as shown on drawings	no	3	2 686.42	8 059.26
	8.92	Artificial plant Furniture item 13.6 Dwg 3089.92.00.SUA.16.D002				
B8.100		.1 Complete installation as shown on drawings	no	3	591.25	1 773.75
	8.93	Drawer for drawings Furniture item 13.7 Dwg 3089.92.00.SUA.16.D002				
B8.101		.1 Complete installation as shown on drawings	no	3	14 408.20	43 224.60
	8.94	Canvas Wall Art Furniture item 13.8 Dwg 3089.92.00.SUA.16.D002				
		.1 Work as instructed by the Engineer				
B8.102		.1 Work as instructed by the Engineer	Prov sum		4 500.00	4 500.00
B8.103		.2 Overheads, charges and profit on above	%		10%	450.00
	8.95	Block Out Roller blinds Furniture item 14.1 Dwg 3089.92.00.SUA.16.D002				
B8.104		.1 Complete installation as shown on drawings	no	2	10 406.00	20 812.00
	8.96	Block Out Roller blinds Furniture item 14.2 Dwg 3089.92.00.SUA.16.D002				
					Carried Forward	5 179 552.36

					Brought Forward	5 179 552.36
B8.105		.1 Complete installation as shown on drawings	no	2	2 532.38	5 064.76
	8.97	Block Out Roller blinds Furniture item 14.3 Dwg 3089.92.00.SUA.16.D002				
B8.106		.1 Complete installation as shown on drawings	no	6	1 119.18	6 715.08
	8.98	Desk Furniture item 15.1 Dwg 3089.92.00.SUA.16.D002				
B8.107		.1 Complete installation as shown on drawings	no	2	13 054.25	26 108.50
	8.99	Ecocentric Filing Cabinets Furniture item 15.2 Dwg 3089.92.00.SUA.16.D002				
B8.108		.1 Complete installation as shown on drawings	no	4	5 757.82	23 031.28
	8.100	Allure Executive Desk and pedestal Furniture item 15.3 Dwg 3089.92.00.SUA.16.D002				
B8.109		.1 Complete installation as shown on drawings	no	1	21 980.25	21 980.25
	8.101	Allure Hinge door cabinet Furniture item 15.4 Dwg 3089.92.00.SUA.16.D002				
B8.110		.1 Complete installation as shown on drawings	no	2	5 776.86	11 553.72
	8.102	Ecocentric Boardroom table for 12 people Furniture item 16.1 Dwg 3089.92.00.SUA.16.D002				
B8.111		.1 Complete installation as shown on drawings	no	1	16 790.68	16 790.68
	8.103	Classical Chair Furniture item 16.2 Dwg 3089.92.00.SUA.16.D002				
B8.112		.1 Complete installation as shown on drawings	no	12	4 647.73	55 772.76
	8.104	Holy Cube Tall Planter with artificial plant Furniture item 16.3 Dwg 3089.92.00.SUA.16.D002				
B8.113		.1 Complete installation as shown on drawings	no	2	2 686.42	5 372.84
	8.105	Artificial plant Furniture item 16.4 Dwg 3089.92.00.SUA.16.D002				
B8.114		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
	8.106	Canvas Wall Art Furniture item 16.5 Dwg 3089.92.00.SUA.16.D002				
					Carried Forward	5 353 124.73

[redacted]

					Brought Forward	5 353 124.73
		.1 Work as instructed by the Engineer				
B8.115		.1 Work as instructed by the Engineer	Prov sum		5 000.00	5 000.00
B8.116		.2 Overheads, charges and profit on above	%		10%	500.00
	8.107	Curtains Furniture item 16.6 Dwg 3089.92.00.SUA.16.D002				
B8.117		.1 Complete installation as shown on drawings	no	1	7 788.38	7 788.38
	8.108	Holy Cube Long Planter with artificial plant Furniture item 17.1 Dwg 3089.92.00.SUA.16.D002				
B8.118		.1 Complete installation as shown on drawings	no	2	3 546.42	7 092.84
	8.109	Artificial plant Furniture item 17.2 Dwg 3089.92.00.SUA.16.D002				
B8.119		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
	8.110	Global Top Counter , Urban Lite leg and Pedestal Furniture item 18.1 Dwg 3089.92.00.SUA.16.D002				
B8.120		.1 Complete installation as shown on drawings	no	9	5 601.05	50 409.45
	8.111	Win Chair Furniture item 18.2 Dwg 3089.92.00.SUA.16.D002				
B8.121		.1 Complete installation as shown on drawings	no	9	3 691.50	33 223.50
	8.112	Block Out Roller blinds Furniture item 18.3 Dwg 3089.92.00.SUA.16.D002				
B8.122		.1 Complete installation as shown on drawings	no	2	10 406.00	20 812.00
	8.113	Wire table with yellow legs Furniture item 19.1 Dwg 3089.92.00.SUA.16.D003				
B8.123		.1 Complete installation as shown on drawings	no	6	1 887.15	11 322.90
	8.114	Cool chair Furniture item 19.2 Dwg 3089.92.00.SUA.16.D003				
B8.124		.1 Complete installation as shown on drawings	no	24	1 286.04	30 864.96
	8.115	4 Seater KPA Bench Furniture item 19.3 Dwg 3089.92.00.SUA.16.D003				
B8.125		.1 Complete installation as shown on drawings	no	3	5 122.38	15 367.14
					Carried Forward	5 536 688.40

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					Brought Forward	5 536 688.40
	8.116	6 Seater KPA Table Furniture item 19.4 Dwg 3089.92.00.SUA.16.D003				
B8.126		.1 Complete installation as shown on drawings	no	6	15 424.10	92 544.60
	8.117	Holy Cube Long Planter with artificial plant Furniture item 19.5 Dwg 3089.92.00.SUA.16.D003				
B8.127		.1 Complete installation as shown on drawings	no	4	3 546.42	14 185.68
	8.118	Artificial plant Furniture item 19.6 Dwg 3089.92.00.SUA.16.D003				
B8.128		.1 Complete installation as shown on drawings	no	4	591.25	2 365.00
	8.119	Holy Cube Long Planter with artificial plant Furniture item 20.1 Dwg 3089.92.00.SUA.16.D003				
B8.129		.1 Complete installation as shown on drawings	no	2	3 546.42	7 092.84
	8.120	Artificial plant Furniture item 20.2 Dwg 3089.92.00.SUA.16.D003				
B8.130		.1 Complete installation as shown on drawings	no	2	591.25	1 182.50
	8.121	Hisense 120L Silver Bar Fridge H120RTS Furniture item 21.1 Dwg 3089.92.00.SUA.16.D003				
B8.131		.1 Complete installation as shown on drawings	no	2	3 116.42	6 232.84
	8.122	Russel Hobbs 30L Electronic Microwave Silver RHEM30L Furniture item 21.2 Dwg 3089.92.00.SUA.16.D003				
B8.132		.1 Complete installation as shown on drawings	no	4	1 826.42	7 305.68
	8.123	Jetmaster 1200 Built-in Stainless Steel Braai Furniture item 21.3 Dwg 3089.92.00.SUA.16.D003				
B8.133		.1 Complete installation as shown on drawings	no	1	32 141.42	32 141.42
	8.124	Chad-o-chef 6 Burner Entertain Furniture item 21.4				
B8.134		Dwg 3089.92.00.SUA.16.D003	no.	1	61 146.00	61 146.00
	8.125	LG 139cm (55inch) Smart 4K UHD ThinQ AI TV Furniture item 22.1				
B8.135		Dwg 3089.92.00.SUA.16.D003	no.	3	11 823.92	35 471.76
	8.126	HDMI LED Home Cinema Furniture item 22.2				
B8.136		Dwg 3089.92.00.SUA.16.D003	no.	1	2 363.92	2 363.92
					Carried Forward	5 798 720.64

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					Brought Forward	5 798 720.64
	8.127	LG 139cm (55inch) Smart 4K UHD ThinQ AI TV Furniture item 21.5				
B8.137		Dwg 3089.92.00.SUA.16.D003	no.	1	11 823.92	11 823.92
	8.128	Signage Dwg 3089.92.00.SUA.16.D003				
		.1 Work as instructed by the Engineer				
B8.138		.1 Signage installation	Prov sum		100 000.00	100 000.00
B8.139		.2 Overheads, charges and profit on above	%		10%	10 000.00
	8.129	Walk off mats Dwg 3089.92.00.SUA.16.F040				
B8.140		Decramat Mat-Lok 4 year guarantee Aluguard single sided heel-proof, closed construction active barrier mat, size 1600 x 2400 x 10mm thick including Matwell frame installed complete to manufacturers specifications	no	2	17 674.54	35 349.08
		BILL NO. B8 **JOINERY - SUA**				
		Carried forward to Summary of Bills			**Total**	5 955 893.64

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - B				
		MANAGEMENT BUILDING				
		B6 - Building works				
		BILL NO. B9				
		PORTION B ELECTRICAL				
		PHOTOVOLTAIC ROOF TOP 25KWP PV INSTALLATION				
		PV INSTALLATION				
		PHOTOVOLTAIC ROOF TOP 25KWP PV INSTALLATION				
	PSRVP	**Photovoltaic Generation Plant**				
	PSRVP.3	As per the General Electrical and Variations and Additions specifications and shall comply with SANS (latest addition) and the PV layout drawings.				
		Supply, off-loading, install on roof top, testing and commission of PV Plant complete with all installation material needed to complete the installation.				
	PSRVP.8	330W Solar PV panel with all connectors, equal or approved similar to MONO PERC (Jinko 60M-V)				
B9.1		i) Supply	no	84	2 680.04	225 123.36
B9.2		ii) Install	no	84	1 377.76	115 731.84
	PSRVP.11	Mounting Structure: aluminium (AlSiMg 6063, high strength, corrosion resistant) PV array fixed inclination (1 panel single landscape) complete with drilled footings and all minor materials for the amount of 80 x PV panel installations according to the standard specifications and PV layout				
B9.3		i) Supply	no	23	2 238.63	51 488.49
B9.4		ii) Install	no	23	0.00	Included
	PSRVP.9	25kW inverter (string type IP67) complete with DC Isolators, Latest Inverter Firmware, South African Grid Code Settings equal or approved similar to SMA (SUNNY TRIPOWER 25000TL-30)				
B9.5		i) Supply	no	1	59 138.46	59 138.46
B9.6		ii) Install	no	1	38 674.81	38 674.81
	PSRPV.7.9	Cluster Controller with all accessories to complete installation equal or approved similar to SMA				
B9.7		i) Supply	no	1	18 854.07	18 854.07
B9.8		ii) Install	no	1	3 482.72	3 482.72
	PSRPV.7.10	24V Power Supply unit for Cluster Controller complete with wiring equal or approved similar to ABB (CP-E24/2.5)				
					Carried Forward	512 493.75

					Brought Forward	512 493.75
B9.9		i) Supply	no	1	1 084.81	1 084.81
B9.10		ii) Install	no	1	0.00	Included
	PSRPV.7.7	Smart meter complete with CT's and wiring, equal or approved similar to Janitza (compatible 4Q UMG 103) **DWG. 3089.30.01.SUA.23.K301**				
B9.11		i) Supply	no	1	29 478.97	29 478.97
B9.12		ii) Install	no	1	0.00	Included
	PSRPV.7.8	Grid Monitoring Relay with correct configurator settings, equal or approved similar to ABB (CM-UFD.M31) as per DWG.3089.30.01.SUA.K302				
B9.13		i) Supply	no	1	28 140.40	28 140.40
B9.14		ii) Install	no	1	17 289.63	17 289.63
	PSRPV.7.12	Fireman's red E-Stop Switch mounted on wall.				
B9.15		i) Supply	no	1	0.00	Included
B9.16		ii) Install	no	1	0.00	Included
	PSRPV.7.12	Red E-Stop Switch in DB-PV				
B9.17		i) Supply	no	1	0.00	Included
B9.18		ii) Install	no	1	0.00	Included
	PSRPV.7.12	E-Stop Points Wiring with 20mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, adaptors, couplings, bends, lock-nuts, bushing, and material needed to complete the installation. Power Points for Fireman's E-Etop complete with 2x2.5mm^2 GP-wire with 1.5mm2 BCEW flush mounted in PVC conduit, to DB-PV				
B9.19		i) Supply	no	1	0.00	Included
B9.20		ii) Install	no	1	0.00	Included
	PSRPV.7	**Distribution Board Installation**				
	EB 16.16.1&16.3&16.9	As per the General Electrical Specification, the complete electrical building installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings. (Work drawings to be approved by engineer before manufacturing)				
					Carried Forward	588 487.56

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					Brought Forward	588 487.56
		DB - SOL : Roof Top : IP67 Frame mounted (3CR12) board with Red frame and face plates as per drawing complete with all equipment including surge arrestors, fuse holders, frames, panels, interior wiring & bus bars, complete with all equipment as per specifications of DWG. 3089.30.01.SUA.23.K302				
B9.21		i) Supply	no	1	35 175.50	35 175.50
B9.22		ii) Install	no	1	6 633.76	6 633.76
B9.23		iii) Labelling, complete circuits, cable and legend card.	sum	1	233.18	233.18
		DB - PV : PV-Room : Surface mounted board with Red frame and face plates as per drawing complete with all equipment including surge arrestors, fuse holders, frames, panels, interior wiring & bus bars, complete with all equipment as per specifications of DWG. DWG. 3089.30.01.SUA.23.K303				
B9.24		i) Supply	no	1	37 989.54	37 989.54
B9.25		ii) Install	no	1	3 408.76	3 408.76
B9.26		iii) Labelling, complete circuits, cable and legend card.	sum	-	233.18	233.18
	PSRPV.5	**LV Cable installation**				
		All cable supplied and installed shall comply with SANS 10142, be neatly installed on cable tray, cable tied to the tray, with the minimum conductor crossings.				
	EB 14.1&14.8 &14.10	16mm² x 4core Cu. SWA. PVC (1000V)				
B9.27		i) Supply	m	26	240.86	6 262.36
B9.28		ii) Install	m	26	36.39	946.14
B9.29		iii) Terminate, complete with grommets, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	293.55	587.10
		6mm² x 4core Cu. SWA. PVC (1000V)				
B9.30		i) Supply	m	11	113.11	1 244.21
B9.31		ii) Install	m	11	31.20	343.20
B9.32		iii) Terminate, complete with grommets, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	200.07	400.14
		10mm² x 1core Cu. PVC. black ECC				
B9.33		i) Supply	m	27	32.96	889.92
B9.34		ii) Install	m	27	7.97	215.19
					Carried Forward	683 049.74

					Brought Forward	683 049.74
B9.35		iii) Terminate, complete with grommets, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	21.33	42.66
		4mm² x 1core Cu, PVC, black ECC				
B9.36		i) Supply	m	12	13.43	161.16
B9.37		ii) Install	m	12	5.31	63.72
B9.38		iii) Terminate, complete with grommets, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	10.65	21.30
	PSRPV.5.2	1500V DC PV cable including connectors for PV panel leads and connectors for inverter inputs installed on wire-mesh cable trays (cable tied) equal or approved similar to SOLARDAC cables and SUNCLICKS connectors				
		4mm² x 1 core 1500V DC cable, Black Aberdare				
B9.39		i) Supply	m	630	15.26	9 613.80
B9.40		ii) Install	m	630	5.31	3 345.30
B9.41		iii) Terminate, complete with grommets, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	126	18.68	2 353.68
		6mm² x 1 core 1500V DC cable, Black				
B9.42		i) Supply	m	189	24.66	4 660.74
B9.43		ii) Install	m	189	6.63	1 253.07
B9.44		iii) Terminate, complete with grommets, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	42	24.02	1 008.84
	PSRPV.5.3	**Communications Cables**				
		RS485 Screened Cable 2 Pair 0.5mm² (Must be Outdoor Type)				
B9.45		i) Supply	m	42	31.52	1 323.84
B9.46		ii) Install	m	42	6.63	278.46
B9.47		iii) Terminate, complete with grommets, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	6	33.37	200.22
		CAT6 cable, UV Protected SF/UTP				
B9.48		i) Supply	m	26	14.18	368.68
B9.49		ii) Install	m	26	6.63	172.38
B9.50		iii) Terminate, complete with grommets, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	4	33.37	133.48
					Carried Forward	708 051.07

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					Brought Forward	708 051.07
		Cable Sleeves and Wire ways				
	PSEB.7& 17&14.9	Cable sleeves as per Specification. 32mm dia PVC complete with couplings and 1mm galv. draw wire				
B9.51		i) Supply	m	11	20.98	230.78
B9.52		ii) Install	m	11	21.23	233.53
		32mm dia. 90° slow bent building entry				
B9.53		i) Supply	no	2	20.10	40.20
B9.54		ii) Install	no	2	13.27	26.54
	PSRPV.6	Powder coated (corrosion resistant) 5mm diameter wire mesh cable trays including all accessories(stainless steel bolts, nuts, brackets, washers, jointers, bends, tee, elbows, crossovers, cantilever arms, floor stands, etc.) for installations along mounting frames, walls and concrete roof slab.				-
		Hot dipped galvanized, powered coated (Grey) (50mm x 50mm) wire mesh cable tray 600mm(W) X 50mm(H) equal or similar to Cabstrut WWHD				
B9.55		i) Supply	m	147	591.08	86 888.76
B9.56		ii) Install	m	147	39.81	5 852.07
		Hot dipped galvanized, powered coated (Grey) (50mm x 50mm) wire mesh cable tray 400mm(W) X 50mm(H) equal or similar to Cabstrut WWHD				
B9.57		i) Supply	m	147	514.43	75 621.21
B9.58		ii) Install	m	147	37.15	5 461.05
	PSRPV.10	**Lightning Installation**				
	EB.23&23 .1 to 23.5	The Lightning installation of the building shall comply with SANS 10142, 10313, 10199 and 1063 (latest additions) and the specification and electrical layout drawings				
		Supply, install and testing of lighting equipment and bonding of all structures to LPS				
		10mm x 1000mm ALU Lightning air termination to be fitted on PV mounting structure complete with mounting brackets DWG. 3089.30.01.SUA.23.D303				
B9.59		i) Supply	no	95	112.77	10 713.15
B9.60		ii) Install	no	95	71.04	6 748.80
		16mm² (ALU) Black XLPE Insulated Cable				
B9.61		i) Supply	m	431	60.30	25 989.30
B9.62		ii) Install	m	431	29.55	12 736.05
					Carried Forward	938 592.51

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						Brought Forward	938 592.51
B9.63		iii)	Terminate, complete with FS Clamps, heat shrink, stainless steel bolts, nuts and lock washers, to air terminal	no	95	50.92	4 837.40
B9.64		iv)	Terminate, complete with Uni Saddle Clamps, heat shrink, stainless steel bolts, nuts and lock washers, to structure	no	189	50.92	9 623.88
B9.65		v)	Terminate, complete with Universal Connector, heat shrink, stainless steel bolts, nuts and lock washers, to LPS	no	189	50.92	9 623.88
	PSRPV.5.4	Cu 10mm^2 x 1core ECC for bonding of PV modules & all metal structures & earth bar (Inclusive of lugs, bolts, washers to complete the installation, all accessories must be stainless steel)					
B9.66	EB 14.1&14.8 &14.10	i)	Supply	m	347	53.01	18 394.47
B9.67		ii)	Install	m	347	29.55	10 253.85
B9.68		iii)	Terminate, complete with grommets, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	231	50.92	11 762.52
	EB.27	**Testing and Commissioning**					
		Test and commissioning complete electrical network, issue test certificates with maintenance manuals complete:					
		Test and commissioning complete PV Plant, issue test certificates by a PV GreenCard certified Installer.					
B9.69		i)	Certificate of compliance (COC's) for cable Installation	sum	-	1127.74	1 127.74
B9.70		ii)	Measure & Record of Soil resistivity and earth resistance	sum	-	7297.13	7 297.13
B9.71		iii)	Check and confirm phasing and rotation at all related switch points to supply authority standard.	sum	-	663.37	663.37
B9.72		iv)	Insulation cable sleeve test	sum	-	663.37	663.37
B9.73		v)	Continuity test on cable trays	sum	-	663.37	663.37
B9.74	PSRPV.12	Contractor to submit before commencement of installation of SSEG an "Application for the connection of Grid-tied Small-Scale Embedded Generation System" with City of Cape Town information on http://www.capetwon.gov.za/solarPV		sum	-	9950.64	9 950.64
B9.75		Specialized training to set, operate and maintain the system for three day course for 8 persons		sum	-	13930.89	13 930.89
	EB.28	**AS-Build Drawings**					
B9.76		Preparing and furnishing the marked-up "As built" drawings of complete electrical installation, with all user manuals and all test certificates for complete PV installation		sum	-	3350.04	3 350.04
		Other Items (Specify items)					
						Carried Forward	1 040 735.06

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					Brought Forward	1 040 735.06
		a)				
		b)				
		LV INSTALLATION				
		LV RETICULATION INSTALLATION				
	PSEB.4&5&13&14&14.1	As per the General Electrical Specification Electrical installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings.				
		Electrical Supply point				
		The Contractor shall do the complete installation of equipment as per Eskom specification for the site.				
	16.4	500A/25kA J25S 3 Pole Hydraulic Magnetic MCCB (at Mini sub) Supply and install MCB tails 300mm2 x 1000mm complete with lugs and bolts				
B9.77		i) Supply	no	1	16 080.23	16 080.23
B9.78		ii) Install	no	1	862.39	862.39
B9.79		iii) Tails 300mm2 Cu, complete with Lugs, bolts, nuts, washers and phase colour shrink	set	1	2 209.04	2 209.04
		LV Cable installation				
		120mm² x 4core Cu , SWA, PVC from DB - G to DB - M				
	PSEB.5&5.1&5.2&14.1&14.8&14.10					
B9.80		i) Supply	m	24	1 656.45	39 754.80
B9.81		ii) Install	m	24	73.26	1 758.24
B9.82		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	848.93	1 697.86
		95mm² x 4core Cu (x2), SWA, PVC from Minisub to DB - G				
B9.83		i) Supply	m	137	1 281.52	175 568.24
B9.84		ii) Install	m	137	72.02	9 866.74
B9.85		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	4	788.76	3 155.04
		35mm² x 4core Cu, SWA, PVC from DB - M to DB - H1				
B9.86		i) Supply	m	17	524.11	8 909.87
B9.87		ii) Install	m	17	42.09	715.53
						1 301 313.04

						1 301 313.04
B9.88		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	427.22	854.44
		25mm² x 4core Cu, SWA, PVC from DB - G to DB - H2				
B9.89		i) Supply	m	26	365.22	9 495.72
B9.90		ii) Install	m	26	38.93	1 012.18
B9.91		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	306.74	613.48
		25mm² x 4core Cu, SWA, PVC from DB - M to DB - F				
B9.92		i) Supply	m	7	365.22	2 556.54
B9.93		ii) Install	m	7	38.93	272.51
B9.94		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	306.74	613.48
		16mm² x 4core Cu, SWA, PVC from DB - G to DB -PV (Roof)				
B9.95		i) Supply	m	42	277.38	11 649.96
B9.96		ii) Install	m	42	36.39	1 528.38
B9.97		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	280.21	560.42
		16mm² x 4core Cu, SWA, PVC from DB - G to UPS connection point				-
B9.98		i) Supply	m	53	277.38	14 701.14
B9.99		ii) Install	m	53	36.39	1 928.67
B9.100		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	222.16	444.32
		16mm² x 4core Cu, SWA, PVC from UPS connection point to DB-G/U				
B9.101		i) Supply	m	53	277.38	14 701.14
B9.102		ii) Install	m	53	36.39	1 928.67
B9.103		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	280.21	560.42
		16mm² x 4core Cu, Trailing Cable from 5Pin Sockets to UPS (x2)				
					Carried Forward	1 364 734.51

						Brought Forward	1 364 734.51
B9.104		i)	Supply	m	5	277.38	1 386.90
B9.105		ii)	Install	m	5	36.39	181.95
B9.106		iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	4	280.21	1 120.84
			16mm² x 4core Cu, SWA, PVC from DB - G/U to DB - M/U				
B9.107		i)	Supply	m	24	277.38	6 657.12
B9.108		ii)	Install	m	24	36.39	873.36
B9.109		iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	280.21	560.42
			10mm² x 4core Cu, SWA, PVC from DB - M to DB - S				
B9.110		i)	Supply	m	16	172.59	2 761.44
B9.111		ii)	Install	m	16	33.44	535.04
B9.112		iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	216.03	432.06
			10mm² x 4core Cu, SWA, PVC from DB - M/U to DB - F/U				
B9.113		i)	Supply	m	7	172.59	1 208.13
B9.114		ii)	Install	m	7	33.44	234.08
B9.115		iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	216.03	432.06
			10mm² x 4core Cu, SWA, PVC from DB - M to Street/Area lights				-
B9.116		i)	Supply	m	557	172.59	96 132.63
B9.117		ii)	Install	m	557	33.44	18 626.08
B9.118		iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	50	216.03	10 801.50
	14.12		**Earth Wiring**				
			Bare Copper Earth Wire laid in the trench, sleeve and/or wire way with each LV-cable as spec, between supply point, Supply Point to MDB, all DB's and other equipment.				
			70mm² BCEW from Minisub to Building earth, DB-G & DB-M				
B9.119		i)	Supply	m	164	189.54	31 084.56
B9.120		ii)	Install	m	164	14.60	2 394.40
							1 540 157.08

							1 540 157.08
B9.121		iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	6	46.70	280.20
		25mm² BCEW					
B9.122		i)	Supply	m	17	69.35	1 178.95
B9.123		ii)	Install	m	17	10.61	180.37
B9.124		iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	32.00	64.00
		16mm² BCEW					
B9.125		i)	Supply	m	128	43.15	5 523.20
B9.126		ii)	Install	m	128	9.29	1 189.12
B9.127		iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	6	26.67	160.02
		10mm² BCEW					
B9.128		i)	Supply	m	100	27.65	2 765.00
B9.129		ii)	Install	m	100	7.97	797.00
B9.130		iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	2	21.33	42.66
		6mm² BCEW					
B9.131		i)	Supply	m	572	18.17	10 393.24
B9.132		ii)	Install	m	572	6.63	3 792.36
B9.133		iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	57	13.33	759.81
		10mm² Cu - General purpose Insulated (G/Y) wire					
B9.134		i)	Supply	m	83	32.96	2 735.68
B9.135		ii)	Install	m	83	7.97	661.51
B9.136		iii)	Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	6	21.33	127.98
		6mm² Cu - General purpose Insulated (G/Y) wire					
B9.137		i)	Supply	m	32	20.33	650.56
B9.138		ii)	Install	m	32	6.63	212.16
						Carried Forward	1 571 670.90

					Brought Forward	1 571 670.90
B9.139		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	4	13.33	53.32
		Earthing				
	PSEB.14 &25	Building earth bar zinc plated, 300 x 40 x 5mm, with 12 x 10mm dia holes for earthing/bonding systems, plus any other accessories including mounting studs and installed at DB-M and DB-GH also be connected to all earths.				
		Note: Earth bars shall be installed so that it is well clear of human reach or where it cannot cause damage etc. to buildings during a fault condition.				
B9.140		i) Supply	no	2	790.10	1 580.20
B9.141		ii) Install	no	2	533.32	1 066.64
	25.4	1.5m x 16mm dia. Cu earth spike complete with 35mm^2 brass clamps, terminated to the supply cable earth and Building				
B9.142		i) Supply	no	2	232.16	464.32
B9.143		ii) Install	no	2	113.77	227.54
		35mm^2 BCEW, connected to the Building earth and earth spike				
B9.144		i) Supply	m	14	137.84	1 929.76
B9.145		ii) Install	m	14	67.54	945.56
B9.146		iii) Terminate, complete with glands, lugs, heat shrink, stainless steel nuts, bolts and lock washers.	no	6	50.92	305.52
		Cable Sleeves and Wire ways				
	PSEB.7& 14.9&17	Cable sleeves as per Specification, 110mm dia PVC complete with couplings and 1mm galv. draw wire				
B9.147		i) Supply	m	189	118.25	22 349.25
B9.148		ii) Install	m	189	48.38	9 143.82
		110 mm dia, 90° slow bent building entry				
B9.149		i) Supply	no	11	209.62	2 305.82
B9.150		ii) Install Cable sleeves as per Specification, 50mm dia PVC complete with couplings and 1mm galv. draw wire	no	11	59.12	650.32
B9.151		i) Supply	m	55	69.88	3 843.40
B9.152		ii) Install	m	55	37.62	2 069.10
		50 mm dia, 90° slow bent building entry DB - GH				
					Carried Forward	1 618 605.47

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					Brought Forward	1 618 605.47
B9.153		i) Supply	no	4	134.38	537.52
B9.154		ii) Install	no	4	48.38	193.52
		Cable sleeves as per Specification, 32mm dia PVC complete with couplings and 1mm galv. draw wire (to Power skirting)				
B9.155		i) Supply	m	53	20.98	1 111.94
B9.156		ii) Install	m	53	21.23	1 125.19
		Cable tray wire mesh galv: 150mm complete with jointers, hangers, bends, fire barrier and brackets to complete the installation, equal or similar to Cabstrut WWHD				
B9.157		i) Supply	m	63	275.64	17 365.32
B9.158		ii) Install	m	63	29.19	1 838.97
	PSEB.11	**UPS Equipment**				
		5 Pin 32A Compact Switched Surface mounted outlet complete with rotary switch gland suppled from DB-G - equal or similar to Gewiss GW66464				
B9.159		i) Supply	no	1	1 876.03	1 876.03
B9.160		ii) Install	no	1	59.71	59.71
		5 Pin 32A 10^0 Compact Surface mounted socket outlet on UPS complete with gland suppled from UPS - equal or similar to Gewiss GW62429				
B9.161		i) Supply	no	1	1 876.03	1 876.03
B9.162		ii) Install	no	1	59.71	59.71
		5 Pin Straight plug complete with gland - equal or similar to Gewiss GW60042FH				
B9.163		i) Supply	no	2	670.00	1 340.00
B9.164		ii) Install	no	2	33.16	66.32
		Junction box - 2 way with glands, complete for UPS return cable 16mm2 x 4C - equal or similar to Pratley Envirobox				
B9.165		i) Supply	no	1	707.47	707.47
B9.166		ii) Install	no	1	59.71	59.71
		Excavations for Cable trenches				
	14.2&14.3 &14.5&14 .7	LV 0.8m deep x 0.6m wide x running meter complete with all backfill material to be sifted soil and compacted in layers to 90% MOD for trenches and 97% MOD for road crossings. Test certificates to be provided and remove surplus material.				-
B9.167		Pick able soil, by hand or machine. Excavate, backfill and compact	m^3	105	91.38	9 594.90
					Carried Forward	1 656 417.81

					Brought Forward	1 656 417.81
B9.168		Soft rock, machine and pneumatic equipment. Excavate, backfill and compact and removal of all redundant and surplus material	m³	15	123.62	1 854.30
B9.169		Hard rock, blasting only. Blast, excavate, backfill, compact includes permits, site establishment, notices and covers and/or rocks greater than 0.75m3 in the trenches, including the removal all redundant and surplus material	m³	11	145.12	1 596.32
B9.170	14.4	Supply, import and install sand bedding. All backfill material to be sifted soil and compacted to 90% MOD	m³	21	134.38	2 821.98
B9.171		Compaction Test (Troxler) every 50m of trench, test certificates to be provided.	no	11	1 343.75	14 781.25
B9.172		100mm dia Core drilling through the slab 150mm diameter as per drawing, with written approval of the structural engineer.	no	2	1 773.75	3 547.50
B9.173		50mm dia Core drilling through the slab 150mm diameter as per drawing, with written approval of the structural engineer.	no	4	1 451.25	5 805.00
		Supply and lay 500mm wide PVC marker tape 300mm above all LV cable				
B9.174		i) Supply	m	210	2.68	562.80
B9.175		ii) Install	m	210	1.99	417.90
		Drilling for sleeves under road surfaces, water channels or paving (include sleeve, site establishment, excavation for drill hole)				
B9.176		i) Drill 110mmØ (Soft)	m	14	102.12	1 429.68
B9.177		ii) Drill 110mmØ (Intermediate)	m	6	102.12	612.72
	14.9	Cable sleeves as per Specification, 110mm dia PVC complete with couplings and 1mm galv. draw wire				
B9.178		i) Supply	m	221	118.25	26 133.25
B9.179		ii) Install	m	221	26.88	5 940.48
	14.9	Supply and build 1000 x 1000 x 800deep manholes complete with 100mm concrete base, brickwork and concrete lid with lifting eyes installed flush with FGL. Entry to Admin and Gatehouse building				
B9.180		i) Supply	no	2	8 062.50	16 125.00
B9.181		ii) Install	no	2	1 021.25	2 042.50
		Black bitumen/aluminium - Waterproofing tape (seal core drilled holes on roof)				
B9.182		i) Supply	no	2	1 021.25	2 042.50
					Carried Forward	1 742 130.99

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					Brought Forward	1 742 130.99
B9.183		ii) Install	no	2	268.75	537.50
	EB.27	**Test and Commissioning** Test and commissioning complete electrical network, issue test certificates with maintenance manuals complete: Test and commissioning complete LV Cable network, issue test certificates				
B9.184	27.1	i) Certificate of compliance (COC's) for cable Installation	sum	-	1990.13	1 990.13
B9.185		ii) Measure & Record of Soil resistivity and earth resistance	sum	-	4643.63	4 643.63
B9.186		iii) Check and confirm phasing and rotation at all related Switch points to supply authority standard.	sum	-	663.37	663.37
B9.187		iv) Insulation cable sleeve test	sum	-	663.37	663.37
B9.188		v) Continuity test on cable trays	sum	-	663.37	663.37
	EB.28	**AS-Build Drawings**				
B9.189		Preparing and furnishing the marked-up "As built" drawings of complete electrical installation, with all user manuals and all test certificates for complete LV installation	sum	-	5338.85	5 338.85
		Other Items (Specify items) a) ..... b)				
		DB INSTALLATION				
	PSEB.6& 6.1&6.2& 16&16.1& 16.3&16.9	**DISTRIBUTION BOARD INSTALLATION** As per the General Electrical Specification, the complete electrical building installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings. (Work drawings to be approved by engineer before manufacturing) **Distribution Boards** DB - G & G/U : Ground Floor : Floor standing board with white/blue plates as per drawing complete with all equipment including surge arrestors, frames, panels, interior wiring, bus bars.				
B9.190		i) Supply	no	1	22 555.96	22 555.96
B9.191		ii) Install	no	1	2 321.82	2 321.82
					Carried Forward	1 781 508.99

					Brought Forward	1 781 508.99
B9.192		iii) Labelling, complete circuits, cable and legend card.	sum	-	2666.77	2 666.77
		DB - M & M/U: Kitchen : Floor standing board with white/blue face plates as per drawing complete with all equipment including surge arrestor, frames, panels, interior wiring, bus bars				
B9.193		i) Supply	no	1	125 730.52	125 730.52
B9.194		ii) Install	no	1	6 633.76	6 633.76
B9.195		iii) Labelling, complete circuits, cable and legend card.	sum	-	2666.77	2 666.77
		DB - F & F/U : First Floor : Surface mounted board with white/blue face plates as per drawing complete with all equipment including surge arrestors, frames, panels, interior wiring, bus bars				
B9.196		i) Supply	no	1	16 261.21	16 261.21
B9.197		ii) Install	no	1	16 418.55	16 418.55
B9.198		iii) Labelling, complete circuits, cable and legend card.	sum	-	2666.77	2 666.77
		DB - S : Second Floor: Surface mounted board with white face plate as per drawing complete with all equipment including surge arrestors, frames, panels, interior wiring, bus bars				
B9.199		i) Supply	no	1	6 209.22	6 209.22
B9.200		ii) Install	no	1	663.37	663.37
B9.201		iii) Labelling, complete circuits, cable and legend card.	sum	-	2666.77	2 666.77
		DB - H1 : Roof (Plant) : Surface mounted board (Orange) weather proof (IP65) 3CR12 - as per drawing complete with all equipment including surge arrestors, frames, panels, interior wiring, bus bars				
B9.202		i) Supply	no	1	41 846.65	41 846.65
B9.203		ii) Install	no	1	3 316.88	3 316.88
B9.204		iii) Labelling, complete circuits, cable and legend card.	sum	-	2666.77	2 666.77
		DB - H2 : Roof (library) : Surface mounted board (Orange) weather proof (IP65) 3CR12 - as per drawing complete with all equipment including surge arrestors, frames, panels, interior wiring, bus bars				
B9.205		i) Supply	no	1	26 220.73	26 220.73
B9.206		ii) Install	no	1	2 388.16	2 388.16
					Carried Forward	2 040 531.89

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						Brought Forward	2 040 531.89
B9.207		iii) Labelling, complete circuits, cable and legend card.	sum	-	2666.77	2 666.77
		DB - PV : First Floor Roof: Surface mounted board (Red) as per drawing complete with all equipment including surge arrestors, frames, panels, interior wiring, bus bars				
B9.208		i) Supply	no	1	57 485.93	57 485.93
B9.209		ii) Install	no	1	4 776.31	4 776.31
B9.210		iii) Labelling, complete circuits, cable and legend card.	sum	-	2666.77	2 666.77
	EB.27	**Test and Commissioning**				-
B9.211	27.1	i) Certificate of compliance (COC's) for complete Installation	sum	-	4925.04	4 925.04
B9.212		ii) Continuity test on wire ways and earth bonding	sum	-	663.37	663.37
B9.213		iii) Provide completed signed off Inspection Test Plan (ITP) document and FAT test certificates.	sum	-	4643.63	4 643.63
B9.214		iv) Provide a set of marked up "As-Built" drawings, 4 work days before commissioning, complete with measurements	sum	-	5338.85	5 338.85
		Other Items (Specify items)				
		a)				
		b)				
		SMALL POWER INSTALLATION				
		SMALL POWER INSTALLATION				
	PSEB.10 &10.1&10 .3&21&21 .1	Supply, wire and install Power outlets with all equipment and material needed to complete the installation all equipment to carry the SABS mark, shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings.				
	25.3	**Power Outlets**				
	PSEB.10.2	Cluster A : 2 way (WHT) - 16Amp Switch socket outlet & 2 x Euro three pin sockets complete: equal or similar to Legrand - 572132, 572136, 689027SA, 576700				
B9.215		i) Supply	no	26	739.21	19 219.46
B9.216		ii) Install	no	26	59.71	1 552.46
	PSEB.10.2	Cluster B : 2 way - 2 x Dedicated 16Amp Switch socket outlet (Shaved earth pen) complete: equal or similar to Legrand - 572465, 689027SA, 575370				
					Carried Forward	2 144 470.48

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					Brought Forward	2 144 470.48
B9.217		i) Supply	no	5	899.80	4 499.00
B9.218		ii) Install	no	5	39.81	199.05
	PSEB.10.2	Cluster BC - in ceiling 2 way - 2 x Dedicated 16Amp Switch socket outlet (Shaved earth pen) complete: equal or similar to Legrand - 572465, 689027SA, 575370				-
B9.219		i) Supply	no	2	899.80	1 799.60
B9.220		ii) Install	no	2	39.81	79.62
	PSEB.10.2	Cluster C: 3 way - 16Amp Switch socket outlet & Dedicated 16Amp Switch socket outlet & 2 x Data RJ45 outlet complete: equal or similar to Legrand - 572132, 572465, 572302, 689027SA, 576700, 689027DIV				
B9.221		i) Supply	no	4	1 085.42	4 341.68
B9.222		ii) Install	no	4	53.07	212.28
	PSEB.10.2	Cluster D: 3 way - 16Amp Switch socket outlet & 2 x Euro three pin sockets & 2 x Data RJ45 outlet complete: equal or similar to Legrand 572132, 572136, 572341, 572302, 689027SA, 576700, 689027DIV				-
B9.223		i) Supply	no	6	1 018.85	6 113.10
B9.224		ii) Install	no	6	72.97	437.82
	PSEB.10.2	Cluster E: 3 way - 2 x Dedicated 16Amp Switch socket outlet & 2 x Data RJ45 outlet complete: equal or similar to Legrand - 572465, 572302, 689027SA, 689027DIV, 576700				
B9.225		i) Supply	no	2	1 025.51	2 051.02
B9.226		ii) Install	no	2	53.07	106.14
	PSEB.10.3	Floor Box: 6 way – 2 x 16Amp Switch socket outlet & 2 x Dedicated 16Amp Switch socket outlet & 2 x Data RJ45 (lid with cord slip) complete: equal or similar to Legrand - CFB3EC, CFB6MOD, 572132, 572465, 572302, 572341				
B9.227		i) Supply	no	19	3 457.25	65 687.75
B9.228		ii) Install	no	19	205.65	3 907.35
	PSEB.10.3	Floor Box: 2 way – 1 x16Amp Switch socket outlet & 1x Euro three pin sockets complete: equal or similar to Legrand - 654003, 572132, 572136				
B9.229		i) Supply	no	12	1 240.18	14 882.16
B9.230		ii) Install	no	12	139.31	1 671.72
					Carried Forward	2 250 458.77

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					Brought Forward	2 250 458.77
	PSEB.10.5	Desk Pro: 3 way - 16Amp Switch socket outlet & 2 x Euro three pin sockets & Data RJ45 outlet complete: equal or similar to Legrand - 654003, 572132, 572136, 572341, 572302				
B9.231		i) Supply	no	12	2 672.05	32 064.60
B9.232		ii) Install	no	12	172.47	2 069.64
	21.2	Stove Isolator (S-ISO): 40A 2P, Stove isolator – slim line: equal or similar to Legrand - 572081, 575260				
B9.233		i) Supply	no	1	544.77	544.77
B9.234		ii) Install	no	1	39.81	39.81
	PSEB.10.7&21.5	Aircon Isolator (HD-ISO): 20A 2p, Aircon Isolator with cord grommet module - slim line: equal or similar to Legrand 572013, 572307, 576040,				
B9.235		i) Supply	no	6	303.30	1 819.80
B9.236		ii) Install	no	6	39.81	238.86
	PSEB.10.7&21.5	Aircon Isolator (A-ISO): 20A 2p, Aircon Isolator with cord grommet module - slim line: equal or similar to Legrand - 572013, 572307, 576040, 575230				
B9.237		i) Supply	no	3	303.30	909.90
B9.238		ii) Install	no	3	39.81	119.43
	21.3	Geyser Isolator (G-ISO): Geyser Isolator 2Pole, 32A, IP66: on roof top: equal or similar to Legrand				
B9.239		i) Supply	no	2	938.01	1 876.02
B9.240		ii) Install	no	2	46.44	92.88
		Lift Isolator (H-ISO): Enclosed Isolator 3P, 32A, IP65, equal or similar to GEWISS (Lift supply)				
B9.241		i) Supply	no	1	1 005.02	1 005.02
B9.242		ii) Install	no	1	46.44	46.44
		Un-switch socket outlet, 2 x European three pin socket, WHT – 300mm AFFL, equal or similar to Legrand Ysalis				
B9.243		i) Supply	no	7	300.28	2 101.96
B9.244		ii) Install	no	7	26.53	185.71
		Un-switch socket outlet (WHT), European two three socket 2400 Ma intelligent USB, equal or similar to Legrand Ysalis – 300mm AFFL				
B9.245		i) Supply	no	6	1 071.38	6 428.28
					Carried Forward	2 300 001.89

					Brought Forward	2 300 001.89
B9.246		ii) Install	no	6	46.44	278.64
		5 Amp socket outlet flush mounted as per detail drawing complete with draw box and covers equal or similar to Crabtree (PV room)				
B9.247		i) Supply	no	1	38.19	38.19
B9.248		ii) Install	no	1	26.53	26.53
		16 Amp Single Switch Socket Outlets Weather proof, with cover Surface mounted with box and lid, mounting plate and clips, equal or similar to Crabtree type Classic 1465W				-
B9.249		i) Supply	no	3	340.37	1 021.11
B9.250		ii) Install	no	3	46.44	139.32
B9.251		Printed Labelling of all outlet points and isolators with DB-name and circuit numbers complete	sum	-	708.42	708.42
		Equipment				
	PSEB.10.4&21.7	Hand dryer (HD): Low Energy: Hand dryer Stainless Steel (brushed), complete with round box, Power: 500W. - HD Jet Dry SQ : Filter - equal or similar to TCS Hygiene - (WC)				
B9.252		i) Supply	no	6	4 582.93	27 497.58
B9.253		ii) Install	no	6	597.03	3 582.18
	PSEB.10.6&21.6	Exhaust fan (F-WC): 30watts 220v-240v.50hz Ceiling Mounted Exhaust Fan - complete with 3m cord set and 5 Amp plug top, equal or similar to - Cool tech - (WC)				
B9.254		i) Supply	no	6	3 791.72	22 750.32
B9.255		ii) Install	no	6	1 021.25	6 127.50
	PSEB.10.6&21.6	Extractor fan (F-S): Round Extractor Fan With 20W Motor & 16W LED Light - complete with 3m cord set and 5 Amp plug top, equal or similar to Eurolux - (Shower)				-
B9.256		i) Supply	no	3	4 798.34	14 395.02
B9.257		ii) Install	no	3	**591.25**	1 773.75
	PSEB.10.6&21.6	Extractor fan (F-EXT): 400mm Wall mounted Extractor 280Watt fan, IP55 4400 m³/h airflow, 424 x 424 Exterior Wall Protective Grille complete with 3m cord set and 5 Amp plug top - equal or similar Axial EQ HD T Series				
B9.258		i) Supply	no	2	12 492.74	24 985.48
B9.259		ii) Install	no	2	1 021.25	2 042.50
					Carried Forward	2 405 368.43

					Brought Forward	2 405 368.43
	PSEB.11 &22&22.1 &22.2&22 .3	UPS: 15kw/20kva UPS Fully modular – RM (400/220V) with +/- 254 minutes autonomy, 10 year life batteries with 36 months warranty - equal or similar INVT Energy Africa				
B9.260		i) Supply	no	1	710 039.99	710 039.99
B9.261		ii) Install	no	1	21 755.30	21 755.30
		10mm² x 5C, Cu, PVC Trailing cable				
B9.262		i) Supply	m	6	246.56	1 479.36
B9.263		ii) Install	m	6	33.44	200.64
B9.264		iii) Terminate, complete with glands, lugs, heat shrink, mounted to UPS cover	no	4	147.40	589.60
	17.1	**Power Points**				
		Wiring with 20mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, adaptors, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation, installed in conduit and wire ways				
		Power Points for ISO complete with 4x6mm2 GP-wire with 4mm2 BCEW surface mounted in galvanised conduit mounted on galv hospital saddles.				
B9.265		i) Supply	no	1	2 593.07	2 593.07
B9.266		ii) Install	no	1	1 107.84	1 107.84
		Power Points for ISO complete with 4x4mm² GP-wire with 2.5mm² BCEW				
B9.267		i) Supply	no	1	1 735.33	1 735.33
B9.268		ii) Install	no	1	908.83	908.83
		Power Points for S-ISO complete with 2x4mm2 GP-wire with 2.5mm2 BCEW surface/flush mounted in PVC conduit for stoves.				
B9.269		i) Supply	no	5	1 035.03	5 175.15
B9.270		ii) Install	no	5	590.40	2 952.00
		Power Points for ISO (HD/AC) complete with 2x2.5mm² GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit.				
B9.271		i) Supply	no	5	737.15	3 685.75
B9.272		ii) Install	no	5	510.80	2 554.00
					Carried Forward	3 160 145.29

					Brought Forward	3 160 145.29
		Power Points for SSO complete with 2x2.5mm2 GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit.				
B9.273		i) Supply	no	383	802.15	307 223.45
B9.274		ii) Install	no	383	546.63	209 359.29
		Power Points for D/SSO complete with 2.5mm^2 GP-wire with 1.5mm^2 G/Y PVC in conduits and/or power skirting				
B9.275		i) Supply	no	130	802.15	104 279.50
B9.276		ii) Install	no	130	546.63	71 061.90
		Power Skirting				-
	PSEB.8& 18	Aluminium Power Skirting (AL 801): 2 Cover, 3 compartment, Power skirting complete with bends, corners, end caps, wall entry boxes and all material needed to complete the installation with switched sockets with double Data outlet point				
B9.277		i) Supply	m	21	279.17	5 862.57
B9.278		ii) Install	m	21	39.81	836.01
		16 Amp Single (White) Switch Socket outlets, power skirting mounted complete with covers equal or similar to Crabtree - Diamond Control room				
B9.279		i) Supply	no	19	158.12	3 004.28
B9.280		ii) Install	no	19	33.16	630.04
		16 Amp Single Dedicated (Red) Switch Socket outlets, power skirting mounted complete with covers equal or similar to Crabtree - Diamond Control room				
B9.281		i) Supply	no	19	170.18	3 233.42
B9.282		ii) Install	no	19	33.16	630.04
		Power Points for SSO complete with 2.5mm2 GP-wire with 1.5mm2 BCEW in conduits and/or power skirting				
B9.283		i) Supply	no	20	792.77	15 855.40
B9.284		ii) Install	no	20	526.72	10 534.40
		Power Points for D/SSO complete with 2.5mm^2 GP-wire with 1.5mm^2 G/Y PVC in conduits and/or power skirting				
B9.285		i) Supply	no	20	792.77	15 855.40
B9.286		ii) Install	no	20	526.72	- 10 534.40
	17.5	**Expansion Joints for all Conduit**				
					Carried Forward	3 919 045.39

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					Brought Forward	3 919 045.39
		Sliding expansion joints for conduit flush with joint with draw wire, for each conduit crossing a building expansion joint complete with couplings, jointing, saddles, lock-nuts, bushing, surface/flush mounted under the screed. Supply and install expansion joints 32mm conduit with draw wire				
B9.287		i) Supply	no	21	40.20	844.20
B9.288		ii) Install	no	21	39.81	836.01
		Supply and install expansion joints 25mm conduit with draw wire				
B9.289		i) Supply	no	26	33.50	871.00
B9.290		ii) Install	no	26	39.81	1 035.06
		Supply and install expansion joints 20mm conduit with draw wire				
B9.291		i) Supply	no	210	26.80	5 628.00
B9.292		ii) Install	no	210	48.38	10 159.80
	10.7	**Mid-wall Split Air conditioning units** Supply and install 18000 btu/hr Mid-wall Split Inverter Air conditioning units complete with anti-corrosive coated condenser, 4m insulated refrigerant pipe cluster, 25mm water drain pipe from drip tray, 4m UV-resistant 2.5mm2 Cu cable, water drain pipe from drip tray, trunking to cover piping, galvanised and (white) powder coated mounting brackets, equal or similar to Samsung: Model AR9500				
B9.293		i) Supply	no	3	35 990.77	107 972.31
B9.294		ii) Install	no	3	20 971.53	62 914.59
		Other Items (Specify items) a) ..... b) ..... c)				
		LIGHTING INSTALLATION				
	PSEB.9& 20&25.2	**LIGHTING INSTALLATION** As per the General Electrical Specification, the complete electrical building installation shall comply with SANS 10142 (latest addition) and the specification and electrical layout drawings, position of equipment will be determine on site.				
					Carried Forward	4 109 306.36

					Brought Forward	4 109 306.36
		Light Fittings				
	PSEB.9.1 &9.4&20. 1&20.2&2 0.3&20.5 &20.6&20 .8	Light fittings complete with electronic gear and energy saving or LED lamps, all equipment to carry the SABS mark, as per drawings. Lamps to have a green cup or tree mark. Contractor to provide samples for approval to the engineer before ordering fittings.				
		Type A: 20W LED, complete with 3m cored and 5 Amp Plug top equal or similar to Lighting Innovations Africa: Logan - RLG-20w-2cs-LIA-1RC- 4k-PN - (office, passage and kitchen)				
B9.295		i) Supply	no	105	2 504.22	262 943.10
B9.296		ii) Install	no	105	79.60	8 358.00
		Type AE: 20W LED , complete with 1hr battery pack "3rd wire-live", 3m cord and 5 Amp plug top, equal or similar to - Lighting Innovations Africa - Logan - RLG-20w-2cs-LIA-1RC– 4k – EMG-PN (office, passage and kitchen)				
B9.297		i) Supply	no	30	3 747.76	112 432.80
B9.298		ii) Install	no	30	79.60	2 388.00
		Type B: 15W LED Round Bulkhead, equal or similar to - Lighting Innovations Africa - Mmi ISV - BC L-15w-4K-PN (Outside Wall Bulkhead and stairs)				
B9.299		i) Supply	no	17	1 238.77	21 059.09
B9.300		ii) Install	no	17	79.60	1 353.20
		Type CE1: 49W LED Linear, zone 2, complete with 1hr battery pack "3rd wire-live", 3m cord and 5 Amp plug top equal or similar to - Lighting Innovations Africa - Akira - AKs-49w-15-4K – EMG-PN (Safe)				
B9.301		i) Supply	no	1	19 560.70	19 560.70
B9.302		ii) Install	no	1	79.60	79.60
		Type CE2: 32W LED Weather proof: complete with 1hr battery pack "3rd wire-live", 3m cord and 5 Amp plug top, equal or similar to Lighting Innovations Africa - Akira - IPz-32w-1R15-PN-1HR-EMG-PN (UPS and PV Plant room)				
B9.303		i) Supply	no	2	2 712.20	5 424.40
B9.304		ii) Install	no	2	79.60	159.20
		Type D1: 10W LED Down light, , 3m cord and 5 Amp plug top, equal or similar to - Lighting Innovations Africa - Atom Mini - OAS-10W-DIFF –WHT- 3K -PN (Offices, Passages, Board Room, kitchen and Canteen)				
B9.305		i) Supply	no	210	750.41	157 586.10
B9.306		ii) Install	no	210	72.97	15 323.70
					Carried Forward	4 715 974.25

					Brought Forward	4 715 974.25
		Type DE1: 10W LED Down light, complete with 1hr battery pack "3rd wire-live", 3m cord and 5 Amp Plug top, equal or similar to Lighting Innovations Africa - Atom Mini - DAS-10W-DIFF-WHT-3K 1HR EMG-PN (Office, Passages, Board Room, kitchen and Canteen)				
B9.307		i) Supply	no	14	2 370.33	33 184.62
B9.308		ii) Install	no	14	72.97	1 021.58
		Type D2: 6W LED Down light, Fire, 3m cord and 5 Amp Plug Top, equal or similar to - Lighting Innovations Africa - Atom Mini - DFP-5W-DIFF- WHT-3K-PN (Archive)				
B9.309		i) Supply	no	29	792.40	22 979.60
B9.310		ii) Install	no	29	72.97	2 116.13
		Type DE2: 6W LED Down light, Fire, complete with 1hr battery pack "3rd wire-live", 3m cord and 5 Amp plug top, equal or similar to Lighting Innovations Africa - Atom Mini - DFP-5w-DIFF -WHT, 3K-1HR EMG-PN (Archive)				
B9.311		i) Supply	no	4	1 535.66	6 142.64
B9.312		ii) Install	no	4	72.97	291.88
		Type F: 18W LED Linear channel light, 2250mm, 3m cord and 5 Amp Plug top, equal or similar to Lighting Innovations Africa - Gola 70 RGOLAc-18W-WHT-2250-4k-PN (Meeting Rooms and Canteen)				
B9.313		i) Supply	no	105	6 348.71	666 614.55
B9.314		ii) Install	no	105	79.60	8 358.00
		Type FE: 18W LED Linear channel light, 2250mm, complete with 1hr battery pack "3rd wire-live", 3m cord and 5 Amp plug top equal or similar to Lighting Innovations Africa - Gola 70 RGOLAc 18W-WHT-2250-PN-4k-1HR-EMG-PN (Meeting Rooms & Canteen)				
B9.315		i) Supply	no	37	7 978.18	295 192.66
B9.316		ii) Install	no	37	79.60	2 945.20
		Type G: 22W LED Decorative Wall Light, equal or similar to Lighting Innovations Africa - Double Wing - DWNG-22W-4K-PN (Foyer Area)				
B9.317		i) Supply	no	4	3 495.38	13 981.52
B9.318		ii) Install	no	4	86.24	344.96
		Type P1 - P6: LED Circle light, Suspended LED, WHT complete with 7m cord set and 5 Amp plug top, equal or similar to Lighting Innovations Africa - Circo - SRc-LED-TBc-4K, SUSPENDED-PN (Foyer)				
					Carried Forward	5 769 147.59

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					Brought Forward	5 769 147.59
B9.319		i) Supply	no	6	90 995.45	545 972.70
B9.320		ii) Install	no	6	331.69	1 990.14
		Type PB1 - PB2: LED Circle light, Suspended LED, WHT complete with 4m cord set and 5 Amp plug top, equal or similar to - Lighting Innovations Africa - Circo - SRc-LED-TBc-4K, SUSPENDED-PN (Break Away Areas)				
B9.321		i) Supply	no	2	82 984.28	165 968.56
B9.322		ii) Install	no	2	331.69	663.38
		Type H: 9W LED, 460mm x Depth 220mm, equal or similar to Lighting Innovations Africa - Picture Wall Light - BPL-9W-4K-PN (Foyer and Break away)				
B9.323		i) Supply	no	17	3 806.84	64 716.28
B9.324		ii) Install	no	17	99.50	1 691.50
		Type I: 7.2 W LED, Wall light, WHT, equal or similar to Lighting Innovations Walleo - WL-WHT-4k-IP65-PN (Braai area)				
B9.325		i) Supply	no	7	1 540.55	10 783.85
B9.326		ii) Install	no	7	86.24	603.68
		Type J: 15W LED Emergency light, Exit, complete with 3hr battery pack "3rd wire-live", equal or similar to - EXT-15W-4K-3HR-EMG-PN (Exit/Arrows in Passages)				
B9.327		i) Supply	no	12	3 653.43	43 841.16
B9.328		ii) Install	no	12	86.24	1 034.88
		Type K: Post Top, 54W, Blk, mounting heights of 3m, equal or similar to Lighting Innovations Africa - Swan - WES-2-542W-4k-BLK- PN (Pathway at entrances)				
B9.329		i) Supply	no	11	41 784.48	459 629.28
B9.330		ii) Install	no	11	597.03	6 567.33
		Type L: 52W LED, Post Top, IP65, mounting heights of 5m, equal or similar to Lighting Innovations Africa - Captain - Post-52W-C-IP65-PN (Parking and drive way)				
B9.331		i) Supply	no	9	15 229.76	137 067.84
B9.332		ii) Install	no	9	597.03	5 373.27
		Type M: 158W LED, equal or similar to Lighting Innovations Africa - Canopy light SCNP-10-1-2C6-WHT-PN (Entrance Gate canopy)				
B9.333		i) Supply	no	14	6 644.11	93 017.54
B9.334		ii) Install	no	14	199.01	2 786.14
					Carried Forward	7 310 855.12

					Brought Forward	7 310 855.12
		Type N: 26W LED, equal or similar to Lighting Innovations Africa - Rondo Wall OWLM-2x26W-4k-PN (Entrance Gate Pillars)				
B9.335		i) Supply	no	21	9 038.28	189 803.88
B9.336		ii) Install	no	21	86.24	1 811.04
		Type O: 6W LED, brick light, equal or similar to Lighting Innovations Africa - Lumeo OWLM-6W-4K-WHT-PN-IP65-PN (Steps - footlight)				
B9.337		i) Supply	no	2	2 718.15	5 436.30
B9.338		ii) Install	no	2	86.24	172.48
		Type Q: 100W LED, floodlight, equal or similar to Lighting Innovations Africa - Captiva FL-100-WHT-4K-IP65-PN (Roof - Plant Area)				
B9.339		i) Supply	no	2	5 634.03	11 268.06
B9.340		ii) Install	no	2	112.78	225.56
		Type R: Downlight frosted glass with RED GU10 50W lamp 240V complete with 4m cord set and 5 Amp plug top equal or similar to EUROLUX ED55W (Safe Indication light)				
B9.341		i) Supply	no	1	395.04	395.04
B9.342		ii) Install	no	1	79.60	79.60
		Type S: 3 43w LED 5760 Lumens, 1500mm Surface Mounted Batten, equal or similar to Lighting Innovations Africa -Aztek-SZN3-43-1R15-PN (Guard House)				
B9.343		i) Supply	no	7	2 204.06	15 428.42
B9.344		ii) Install	no	7	79.60	557.20
		Type FS: 20W Motor & 16W LED Light, Round Extractor, complete with 3m cord set and 5 Amp plug top, equal or similar to EUROLUX F33LED/R – WHT-4k (Showers)				
B9.345		i) Supply	no	3	2 549.98	7 649.94
B9.346		ii) Install	no	3	86.24	258.72
	PSEB.9.3	Motion Sensor Switch: 2300W Occupancy Motion Sensor switch, 10A relay, flush ceiling mounted, 360deg, 7sec-99min, 6m, complete with 3m cord set and 5 Amp plug top, equal or similar to Lighting Innovations Africa - CO96-WHT-F (Offices, WC's & Meeting rooms)				
B9.347		i) Supply	no	42	2 909.06	122 180.52
B9.348		ii) Install	no	42	86.24	3 622.08
					Carried Forward	7 669 743.96

					Brought Forward	7 669 743.96
	PSEB.9.3	Motion Sensor Switch: 2300W Occupancy Motion Sensor switch, 10A relay, flush ceiling mounted, 360deg, 7sec-99min, 15m, complete with 3m cord set and 5 Amp plug top, equal or similar to Lighting Innovations Africa - WD869 EBDMR - WHT (Passages and Library)				
B9.349		i) Supply	no	8	3 929.44	31 435.52
B9.350		ii) Install	no	8	86.24	689.92
	20.15	**Light switches**				
		Single lever, one way, light switches complete with white covers equal or similar to Legrand				
B9.351		i) Supply	no	4	177.79	711.16
B9.352		ii) Install	no	4	26.53	- 106.12
		Single lever, one way, light switches with dimmer complete with white covers equal or similar to Legrand				
B9.353		i) Supply	no	2	608.53	1 217.06
B9.354		ii) Install	no	2	39.81	79.62
		Single lever, one way, Weather proof light switches, IP 65, complete with white covers equal or similar to Legrand				
B9.355		i) Supply	no	3	187.89	563.67
B9.356		ii) Install	no	3	39.81	119.43
		Two lever, one way, light switches complete with white covers equal or similar to Legrand				
B9.357		i) Supply	no	2	252.03	504.06
B9.358		ii) Install	no	2	53.07	106.14
		Single lever, two way, light switches complete with stainless covers equal or similar to - Legrand				
B9.359		i) Supply	no	10	999.42	9 994.20
B9.360		ii) Install	no	10	39.81	398.10
		20A Photocell "Nema" socket mounted in bulkhead fitting, complete with all material needed to complete the installation.				
B9.361		i) Supply	no	2	1 340.02	2 680.04
B9.362		ii) Install	no	2	86.24	172.48
		5 Amp socket outlet P8300 mounted as per detail drawing complete with covers equal or similar to Crabtree				
B9.363		i) Supply	no	554	38.19	21 157.26
					Carried Forward	7 739 678.74

					Brought Forward	7 739 678.74
B9.364		ii) Install	no	554	26.53	14 697.62
		5 Amp socket outlet surface mounted as per detail drawing complete with round box, covers and conduit, from wire way equal or similar to Crabtree				
B9.365		i) Supply	no	53	38.19	2 024.07
B9.366		ii) Install	no	53	26.53	1 406.09
		Lighting Points				-
	PSEB.9.1 &17.1&20 .11	Wiring and 20mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, adaptors, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation. Installed in conduit and wire ways complete				
		Light/Switch Points for fittings complete with 2x1.5mm^2 GP-wire with 1mm2 BCEW surface mounted in PVC conduit.				
B9.367		i) Supply	no	546	130.69	71 356.74
B9.368		ii) Install	no	546	151.91	82 942.86
		Emergency Light Points for fittings complete with 3x1.5mm^2 GP-wire circuit to lights, mounted in PVC conduit.				-
B9.369		i) Supply	no	103	130.69	13 461.07
B9.370		ii) Install	no	103	151.93	15 648.79
	PSEB.9.3	Motion Sensor Points complete with 3x1.5mm^2 GP-wire from circuit to lights, mounted in PVC conduit.				
B9.371		i) Supply	no	47	130.69	6 142.43
B9.372		ii) Install	no	47	151.91	7 139.77
		Photo Cell Points complete with 3x1.5mm2 GP-wire with 1mm2 BCEW surface mounted in PVC conduit.				
B9.373		i) Supply	no	2	130.69	261.38
B9.374		ii) Install	no	2	151.91	303.82
		5Amp Points for fittings complete with 2x1.5mm2 GP-wire with 1.mm2 BCEW surface mounted in PVC conduit, additional to light points				
		Motion sensor and fans mounted on trunking				
B9.375		i) Supply	no	68	130.69	8 886.92
B9.376		ii) Install	no	68	151.91	10 329.88
		Excavation of Pole holes by hand, 1.2 x 0.5 x 0.5m complete with backfill and compacted to 90% MOD				
					Carried Forward	7 974 280.18

					Brought Forward	7 974 280.18
B9.377		i) Excavation holes	no	26	199.01	5 174.26
	17.5	**Expansion Joints for all Conduit**				
		Sliding expansion joints for conduit flush with joint with draw wire, for each conduit crossing a building expansion joint complete with couplings, jointing, saddles, lock-nuts, bushing, surface/flush mounted under the screed.				
		Supply and install expansion joints 32mm conduit with draw wire				-
B9.378		i) Supply	no	5	40.20	201.00
B9.379		ii) Install	no	5	39.81	199.05
		Supply and install expansion joints 25mm conduit with draw wire				
B9.380		i) Supply	no	5	33.50	167.50
B9.381		ii) Install	no	5	39.81	199.05
		Supply and install expansion joints 20mm conduit with draw wire				
B9.382		i) Supply	no	105	26.80	2 814.00
B9.383		ii) Install	no	105	39.81	4 180.05
	PSEB.7& 14.8	**Wire ways** Trunking galv: P8300 complete with pre-punched holes and all accessories i.e. elbow, 3 way tee, 4 way cross, splice, hangers brackets and end caps, equal or similar to Cabstrut LI-DUCT				
B9.384		i) Supply	m	479	176.88	84 725.52
B9.385		ii) Install	m	479	39.81	19 068.99
		Additional items: (Specify details)				
		a)				
		b)				
		c)				
		DSTV,DATA,TEL & CCTV INSTALLATION				
		DSTV, DATA, TELEPHONE & CCTV INSTALLATION				
		Distribution boards				
	PSEB.15 &24&24.1 &24.2&24 .3	Supply and install Surface mounted distribution boards complete with hardwood back board, door and pad lockable handles.				
					Carried Forward	8 091 009.60

					Brought Forward	8 091 009.60
		Telkom DB-Board, flush mounted 600 X 600 X 250mm deep with hard wood back board (IT Room)				
B9.386		i) Supply	no	1	2 666.63	2 666.63
B9.387		ii) Install	no	1	331.69	331.69
		Telkom DB-Board, flush mounted 450 X 600 X 250mm deep with hard wood back board and industrial SSO next to DB - G				
B9.388		i) Supply	no	1	1 835.83	1 835.83
B9.389		ii) Install	no	1	331.69	331.69
		DSTV DB-Board, flush mounted 450 X 600 X 250mm deep with hard wood back board and industrial SSO ground and first floors				
B9.390		i) Supply	no	2	1 835.83	3 671.66
B9.391		ii) Install	no	2	331.69	663.38
	PSEB.13	**DSTV/DATA/Telephone outlet points**				
		Wire ways and conduit with draw wire provided, wiring to be provided by others				
		25mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, short lengths, couplings, bends, tees, saddles, lock-nuts, bushing, and material needed to complete the installation. Note Data/Telephone additional to point in clusters outlets.				
		Wi-Fi (AP) outlet's wire way, ceiling mounted complete with gland and material needed to complete the installation (Canteen, Library, Meeting room & Breakaway places)				
B9.392		i) Supply	no	6	387.27	2 323.62
B9.393		ii) Install	no	6	498.85	2 993.10
		Data/Telephone (RJ45) outlet wall mounted complete with cover and equal or similar to Legrad Ysalis DATA RJ45 outlet, WHT – 300mm AFFL				
B9.394		i) Supply	no	11	332.37	3 656.07
B9.395		ii) Install	no	11	180.44	1 984.84
		Data/Telephone (RJ45) outlet wall mounted complete with cover and double modules equal or similar to Legrad Ysalis DATA RJ45 outlet				
						8 111 468.11

						8 111 468.11
B9.396		i) Supply	no	2	224.87	449.74
B9.397		ii) Install	no	2	180.44	360.88
		16 Amp Double Switch Socket Outlets with cover flush mounted with wall box, mounting plate and clips, equal or similar to Crabtree type Classic 6881/001P+6563/101P (Entry boxes) at IT - Hub				
B9.398		i) Supply	no	2	151.09	302.18
B9.399		ii) Install	no	2	39.81	79.62
		Power Points for SSO complete with 2x2.5mm2 GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit. (DB & Wall box)				
B9.400		i) Supply	no	2	780.24	1 560.48
B9.401		ii) Install	no	2	516.11	1 032.22
		DSTV Dish outlet wall mounted complete with cover				
B9.402		i) Supply	no	2	224.87	449.74
B9.403		ii) Install	no	2	180.44	360.88
	15.1	**CCTV Installation outlet Points**				
		Wire ways and conduit with draw wire provided, wiring and equipment to be provided by others				
		25mm Galvanised conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, short lengths, couplings, bends, tees, saddles, lock-nuts, bushing, round boxes, and material needed to complete the installation				
		Bullet Camera complete with round box flush wall mounted, complete with cover with grommet entry.				
B9.404		i) Supply	no	6	2 346.37	14 078.22
B9.405		ii) Install	no	6	883.62	5 301.72
		Mini Dome Camera complete with round box flush Ceiling mounted				
B9.406		i) Supply	no	19	2 346.37	44 581.03
B9.407		ii) Install	no	19	883.62	16 788.78
		Area PTZ Dome Camera complete with round box surface Wall mounted complete with cover with grommet entry, 10m AFGL parking area side.				
B9.408		i) Supply	no	1	2 346.37	2 346.37
B9.409		ii) Install	no	1	883.62	883.62
					Carried Forward	8 200 043.59

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					Brought Forward	8 200 043.59
		CCTV Camera points flush wall/ceiling mounted outlet as per drawing				
B9.410		i) Supply	no	19	2 346.37	44 581.03
B9.411		ii) Install	no	19	883.62	16 788.78
		Intercom/Camera points wall surface mounted outlet as per drawing (Entrance/foyer)				
B9.412		i) Supply	no	3	2 346.37	7 039.11
B9.413		ii) Install	no	3	883.62	2 650.86
		16 Amp Double Dedicated (blue) Switch Socket outlets, flush mounted with wall box, mounting plate and clips, equal or similar to Crabtree type Classic (For equipment fed fro DB-GU & DB-GH)				
B9.414		i) Supply	no	1	151.09	151.09
B9.415		ii) Install	no	1	39.81	39.81
		Power Points for SSO complete with 2x2.5mm2 GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit.				
B9.416		i) Supply	no	1	1 170.65	1 170.65
B9.417		ii) Install	no	1	838.61	838.61
		Wire ways and conduit				
	PSEB7&14.8&17.1	Link conduits as per Specification, 25mm dia PVC complete with couplings and 1.5mm galv. draw wire surface/flush mounted.				
B9.418		i) Supply	m	17	62.98	1 070.66
B9.419		ii) Install	m	17	79.60	1 353.20
	17.4	Draw Box PVC - 300 x 300: to be installed for link conduit between different floors				
B9.420		i) Supply	m	21	188.94	3 967.74
B9.421		ii) Install	m	21	26.53	557.13
		Galv. Cable wire tray 150mm complete with jointers, hangers, bends, and brackets to complete the installation, from UPS-Room to IT room equal or similar to Cabstrut WWHD				
B9.422		i) Supply	m	17	190.15	3 232.55
B9.423		ii) Install	m	17	30.52	518.84
					Carried Forward	8 284 003.65

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					Brought Forward	8 284 003.65
		P9000 Galv. Wire trunking complete with Lid, jointers, angles, ends, bends, corners, risers, hangers, brackets and anchors to complete the installation, equal or similar to Cabstrut LI-DUCT				
B9.424		i) Supply	m	101	197.52	19 949.52
B9.425		ii) Install	m	101	39.81	4 020.81
		Cable Sleeves and Wire ways				
	PSEB.14.9&17	Cable sleeves as per Specification, 110mm dia PVC complete with couplings and 1mm galv. draw wire				
B9.426		i) Supply	m	47	134.38	6 315.86
B9.427		ii) Install	m	47	37.62	1 768.14
		110 mm dia, 90° slow bent building entry				-
B9.428		i) Supply	no	4	241.88	967.52
B9.429		ii) Install	no	4	48.38	193.52
		Cable sleeves as per Specification, 50mm dia PVC complete with couplings and 1mm galv. draw wire				
B9.430		i) Supply	m	14	69.88	978.32
B9.431		ii) Install	m	14	26.88	376.32
		50 mm dia, 90° slow bent building entry				
B9.432		i) Supply	no	4	177.38	709.52
B9.433		ii) Install	no	4	48.38	193.52
		Optic fibre 32mmØ sleeve. (Fibre cable to be installed by other)				
B9.434		i) Supply	m	200	37.62	7 524.00
B9.435		ii) Install	m	200	16.12	3 224.00
		Supply and install Preform Fibre manhole, 380mm x 600mm deep complete with Frame and Covers				
B9.436		i) Supply	no	6	1 343.75	8 062.50
B9.437		ii) Install	no	6	268.75	1 612.50
	17.5	**Expansion Joints for all Conduit**				
		Sliding expansion joints for conduit flush with joint with draw wire, for each conduit crossing a building expansion joint complete with couplings, jointing, saddles, lock-nuts, bushing, surface/flush mounted under the screed.				
					Carried Forward	8 339 899.70

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					Brought Forward	8 339 899.70
		Supply and install expansion joints 25mm Galv. conduit with draw wire				
B9.438		i) Supply	no	16	46.90	750.40
B9.439		ii) Install	no	16	26.53	424.48
		Excavations for Cable trenches				
	14.2&14.3 &14.5&14 .7	LV 0.8m deep x 0.6m wide x running meter complete with all backfill material to be sifted soil and compacted in layers to 90% MOD for trenches and 97% MOD for road crossings test certificates to be provided and remove surplus material.				
B9.440		Pickable soil, by hand or machine. Excavate, backfill and compact	m³	100	80.62	8 062.00 -
B9.441		Soft rock, machine and pneumatic equipment. Excavate, backfill and compact and removal of all redundant and surplus material	m³	11	241.88	2 660.68
B9.442		Hard rock, blasting only. Blast, excavate, backfill, compact includes permits, site establishment, notices and covers and/or rocks greater than 0.75m3 in the trenches, including the removal all redundant and surplus material	m³	5	395.60	1 978.00
B9.443		Supply, import and install sand bedding. All backfill material to be sifted soil and compacted to 90% MOD	m³	21	134.38	2 821.98
B9.444		Compaction Test (Troxler) every 50m of trench, test to be sifted soil and compacted to 90% MOD	no	4	1 343.75	5 375.00
	EB.28	**AS-Build Drawings**				
B9.445		Preparing and furnishing the marked-up "As built" drawings of complete electrical installation, with all user manuals and all test certificates for complete pocket for DATA, Tel & CCTV.	sum	-	3127.82	3 127.82
		Additional items: (Specify details)				
		a)				
		b)				
		LIGHTNING & EARTH INSTALLATION				
		LIGHTNING and EARTH INSTALLATION				
	PSEB.12 &23&23.1 &23.2&23 .3&23.4& 23.5	The Lightning installation of the building shall comply with SANS 10142, 10313, 10199 and 1063 (latest additions) and the specification and electrical layout drawings				
		Lightning down conductors.				
					Carried Forward	8 365 100.06

					Brought Forward	8 365 100.06
		Alu Down Conductor: 70mm², solid Alu down conductors, complete with 70mm2 (Alu) Black XLPE insulated wire, connected to steel roof with lug and test block.				
B9.446		i) Supply	no	4	3 015.87	12 063.48
B9.447		ii) Install	no	4	1 978.43	7 913.72
		20mm PVC Conduit mounted in wall cavity for conductors complete with two bushes, couplings with all equipment and into down the ground				
B9.448		i) Supply	no	4	51.55	206.20
B9.449		ii) Install	no	4	16.61	66.44
		Supply and install roof tails 70mm^2 (Alu) Black XLPE insulated wire with lugs, stainless steel bolts, nuts and spring washers.				
B9.450		i) Supply	no	6	2 101.87	12 611.22
B9.451		ii) Install	no	6	657.73	3 946.38
		1.5m x 16mm dia. Cu earth spike complete with 35mm^2 brass clamps, terminated to the down conductor				
B9.452		i) Supply	no	4	232.16	928.64
B9.453		ii) Install	no	4	112.64	450.56
		35mm² BCEW terminated on test block and earth spike				
B9.454		i) Supply	m	17	137.84	2 343.28
B9.455		ii) Install	m	17	66.86	1 136.62
B9.456		iii) Terminate	no	8	50.92	407.36
		Lightning roof Installation				
		Alu Roof Conductor: 70mm², sold Alu conductors, complete with connectors, conductor bracket, bi-metal connector for Cu link and material to complete the installation				
B9.457		i) Supply	m	69	49.78	3 434.82
B9.458		ii) Install	m	69	24.14	1 665.66
		Air terminal 10mm x 500mm, with mounting bracket and material to complete the installation.				
B9.459		i) Supply	no	3	112.95	338.85
B9.460		ii) Install	no	3	70.46	211.38
		16mm^2 BCEW link between building earth bar ad DB-M and roof conductor test block				
B9.461		i) Supply	m	26	60.30	1 567.80
					Carried Forward	8 414 392.47

					Brought Forward	8 414 392.47
B9.462		ii) Install	m	26	29.25	760.50
B9.463		iii) Terminate	no	2	50.42	100.84
		20mm PVC Conduit mounted in wall cavity for conductors complete with two bushes, couplings with all equipment from building earth bar to roof installation to DB-M bar				
B9.464		i) Supply	m	27	51.55	1 391.85
B9.465		ii) Install	m	27	16.61	448.47
		Earthing Test terminals				-
		Supply and install Test terminals block with sliding lock at bottom of each down conductor in 100mmx100mm PVC box with cover 450mm AFGL				
B9.466		i) Supply	no	4	664.21	2 656.84
B9.467		ii) Install	no	4	378.28	1 513.12
		Earthing and Bonding				
B9.468	PSEB.14 &25	Supply, delivery and installation of earthing strictly in accordance with the relevant SANS & IEC Specifications(SANS 10313:2008 and SANS 62305). Linked together to achieve equal potential earth bonding and eliminate step potential differences, with a Cu bonding strap, 12x 0.4mmwith copper bolts and nuts and 6mm2 BCEW, to be connected to building earth at DB - M	sum	-	9313.8	9 313.80
	EB.27	**Test and Commission**				
B9.469		Earth resistance test of each point and commission providing earthing certificate for lightning earth, to be below 50 ohm.	sum	-	1127.74	1 127.74
		Additional items: (Specify details)				
		a)				
		b)				
		FIRE DETECTION INSTALLATION				
		FIRE DETECTION INSTALLATION				
		Wire ways and conduit with wiring provided, equipment to be provided by others				
		Fire Detection Points				
	PSEB.16 &16.1&16 .2	25mm Galvanized conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, short lengths, couplings, bends, tees, hospital saddles, lock-nuts, bushing, round boxes, and material needed to complete the installation as per fire design.				
					Carried Forward	8 431 705.63

					Brought Forward	8 431 705.63
		Smoke detection points ceiling mounted				
B9.470		i) Supply	no	24	692.79	16 626.96
B9.471		ii) Install	no	24	196.36	4 712.64
		Manual call points (red/green) wall surface mounted 1400AFFL				
B9.472		i) Supply	no	9	704.85	6 343.65
B9.473		ii) Install	no	9	196.36	1 767.24
		Bell/Beacon alarm points wall surface mounted				
B9.474		i) Supply	no	14	704.85	9 867.90
B9.475		ii) Install	no	14	196.36	2 749.04
		16 Amp Double Switch Socket Outlets with cover flush mounted with wall box, mounting plate and clips, equal or similar to Legrad Ysalis (Fire control board)				
B9.476		i) Supply	no	1	201.00	201.00
B9.477		ii) Install	no	1	39.81	39.81
		Power Points for SSO complete with 2x2.5mm2 GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit.				
B9.478		i) Supply	no	1	1 170.65	1 170.65
B9.479		ii) Install	no	1	516.11	516.11
		1 mm^2 2-core, PH120 Fire Resistant cable with Halogen free compounds, installed in Galvanized Conduit, equal or similar to TechnoSwitch (SH-2PHx-500)				
B9.480		i) Supply	no	189	18.49	3 494.61
B9.481		ii) Install	no	189	9.29	1 755.81
		Equipment				
	16.2	TC4000 Series – Flush mounted, 4 Loop Control Panel, 4 on-board sounder circuits - complete with Back box, 20mm knockouts, equal or similar to Technoswitch (AE-TC440x) - (Control room)				
B9.482		i) Supply	no	1	43 615.37	43 615.37
B9.483		ii) Install	no	1	1 990.13	1 990.13
		Emergency Exit door release breakglass units (green) complete with alarm siren, equal or similar to Technoswitch (KB-MCPDP-GG) (Admin building, Entrance and fire escape doors)				
					Carried Forward	8 526 556.55

					Brought Forward	8 526 556.55
B9.484		i) Supply	no	5	469.01	2 345.05
B9.485		ii) Install	no	5	199.01	995.05
		Optical smoke detector 12-30VDC 2 Wire, equal or similar to Technoswitch (AP-DIS-O) - (Admin building)				
B9.486		i) Supply	no	24	687.56	16 501.44
B9.487		ii) Install	no	24	199.01	4 776.24
		Emergency "BREAK GLASS" unit (red), equal or similar to Technoswitch - AP-DIS-MCP2 (Admin building passages)				
B9.488		i) Supply	no	4	469.01	1 876.04
B9.489		ii) Install	no	4	199.01	796.04
		SOUNDER & BEACON, equal or similar to Technoswitch KL-SO-SBR - (Admin building, one each floor)				-
B9.490		i) Supply	no	6	758.85	4 553.10
B9.491		ii) Install	no	6	199.01	1 194.06
		Fire Bell – 8 inch Outdoor Weatherproof, equal or similar to Technoswitch - KL-FB-24WP (Admin building, outside)				-
B9.492		i) Supply	no	2	997.11	1 994.22
B9.493		ii) Install	no	2	199.01	398.02
		Fire Bell – Indoor - 6 inch, equal or similar to Technoswitch (KL-FB-24) (Admin building, Entrance and fire escape doors)				
B9.494		i) Supply	no	4	603.14	2 412.56
B9.495		ii) Install	no	4	199.01	796.04
	EB.23	**AS-BUILD DRAWINGS**				
B9.496		Preparing and furnishing the marked-up "As built" drawings of complete electrical installation, with all user manuals and all test certificates for complete Fire installation.	sum	-	2680.04	2 680.04
		Additional items: (Specify details)				
		a)				
		b)				
		ACCESS CONTROL INSTALLATION				
	PSEB.15	**ACCESS CONTROL INSTALLATION**				
		Wire ways and conduit with wiring provided, equipment to be provided by others				
					Carried Forward	8 567 874.45

					Brought Forward	8 567 874.45
		25mm PVC conduit complete with draw boxes, wall boxes equipped with draw wire included, bending, threading, jointing, short lengths, couplings, bends, tees, saddles, lock-nuts, bushing, 100x100 Wall boxes, and material needed to complete the installation Card-reader outlet flush mounted complete with cover with grommet, conduit and draw wire, equal or similar to Legrand type Ysalis				
B9.497		i) Supply	no	14	223.52	3 129.28
B9.498		ii) Install	no	14	180.44	2 526.16
	15.3	Access control point outlet at front desk complete with cover with grommet, conduit and draw wire, equal or similar to Legrand type Ysalis				
B9.499		i) Supply	no	2	223.52	447.04
B9.500		ii) Install	no	2	180.44	360.88
		Maglock outlet flash mounted complete with cover with grommet, conduit and draw wire, equal or similar to Legrand type Ysalis				
B9.501		i) Supply	no	7	223.52	1 564.64
B9.502		ii) Install	no	7	180.44	1 263.08
		16 Amp Single Switch Socket Outlets with cover flush mounted with wall box, mounting plate and clips, equal or similar to Legrand type Ysalis (Maglock/Control equipment)				
B9.503		i) Supply	no	18	114.79	2 066.22
B9.504		ii) Install	no	18	39.81	716.58
		Power Points for SSO complete with 2x2.5mm2 GP-wire with 1.5mm2 BCEW surface/flush mounted in PVC conduit.				
B9.505		i) Supply	no	4	1 170.65	4 682.60
B9.506		ii) Install	no	4	516.11	2 064.44
	17.5	**Expansion Joints for all Conduit** Sliding expansion joints for conduit flush with joint with draw wire, for each conduit crossing a building expansion joint complete with couplings, jointing, saddles, lock-nuts, bushing, surface/flush mounted under the screed. Supply and install expansion joints 25mm conduit with draw wire				
B9.507		i) Supply	no	11	46.90	515.90
					Carried Forward	8 587 211.27

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					Brought Forward	8 587 211.27
B9.508		ii) Install	no	11	26.53	291.83
	EB.23	**AS-BUILD DRAWINGS**				
B9.509		Preparing and furnishing the marked-up "As built" drawings of complete electrical installation, with all user manuals and all test certificates for complete Access control installation.	sum	-	3127.82	3 127.82
		Additional items: (Specify details)				
		a)				
		b)				
		BILL NO. B9 **PORTION B ELECTRICAL** **PHOTOVOLTAIC ROOF TOP 25KWP PV INSTALLATION**				
		Carried forward to Summary of Bills			**Total**	8 590 630.92

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C1 - Provisional sums and Dayworks				
	SANS 1200 A	**BILL NO. C1** **PROVISIONAL SUMS AND PRIME COST ITEMS (CIVIL WORK)**				
		Note: Provisional sums applicable to the building work are to be priced under relevant Building Works bills of quantities				
		Note: Expenditure under the following provisional sums is for work executed by the Contractor\Sub-contractor or Supplier during the construction phase of the contract. Values paid under these items shall be "nett values excluding discount and VAT". Invoices shall be supplied for each expenditure and attached to the payment certificates.				
		For work to be executed by the Contractor and valued in terms of the "Valuation of Variations" clause in the Conditions of Contract				
		ENGINEERS REQUIREMENTS				
	8.5	(a) .2 Engineers requirements				
C1.1	PSA7.6	.3 Acceptance control testing	Prov sum		260 000.00	260 000.00
C1.2		.4 Overheads, charges and profit on above	%		10%	26 000.00
		WORK TO EXISTING SERVICES				
	8.5	(a) .3 Existing services				
C1.3	PSA7.9	.1 Locating existing services	Prov sum		260 000.00	260 000.00
C1.4		.2 Overheads, charges and profit on above	%		10%	26 000.00
C1.5	PSA7.10	.3 Relocating existing services	Prov sum		260 000.00	260 000.00
C1.6		.4 Overheads, charges and profit on above	%		10%	26 000.00
		SPECIALIST SERVICES				
	8.5	(a) .4 Specialist services				
C1.7	PSA7.12	.1 Payment of specialist services	Prov sum		260 000.00	260 000.00
C1.8		.2 Overheads, charges and profit on above	%		10%	26 000.00
		PRIME COST ITEMS				
	8.6	Materials for dayworks				
					Carried Forward	1 144 000.00

					Brought Forward	1 144 000.00
C1.9	PSA8.1	(a) Materials used in the execution of dayworks	PC item		200 000.00	200 000.00
C1.10		(b) Overheads, charges and profit on above	%		10%	20 000.00
		BILL NO. C1 **PROVISIONAL SUMS AND PRIME COST ITEMS (CIVIL WORK)**				
		Carried forward to Summary of Bills			**Total**	1 364 000.00

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C1 - Provisional sums and Dayworks				
	SANS 1200 A	**BILL NO. C2** **DAYWORKS AND TEMPORARY WORKS (CIVIL WORK)**				
		Note: Dayworks executed on instruction of the Engineer only. Supervision of dayworks is not payable under this section and is deemed to be included under Preliminary and General items in 1200A Daywork sheets shall be delivered to the Engineer at the end of each day for approval, failing this, the Engineer may reject the dayworks.				
		DAYWORKS				
	8.7.1	**LABOUR**				
C2.1		(a) Skilled	hr	1000	87.31	87 310.00
C2.2		(b) Semi-skilled	hr	3000	86.00	258 000.00
C2.3		(c) Un-skilled	hr	5000	58.41	292 050.00
		PLANT HIRE (WORK RATES ON SITE)				
		TRUCKS				
	8.7.2	.1 Tipper trucks (specify capacity)				
C2.4		(a) Capacity_____m³ (small)	hr	500	4.26	2 130.00
C2.5		(b) Capacity_____m³ (medium)	hr	500	5.59	2 795.00
C2.6		(c) Capacity_____m³ (large)	hr	500	6.58	3 290.00
	8.7.2	.2 Off highway dump trucks (specify capacity)				
C2.7		(a) Capacity_____m³ (medium)	hr	500	7.32	3 660.00
C2.8		(b) Capacity_____m³ (large)	hr	500	9.17	4 585.00
	8.7.2	.3 Flatbed trucks (specify capacity)				
C2.9		(a) Capacity_____m³ (small)	hr	500	2.71	1 355.00
C2.10		(b) Capacity_____m³ (medium)	hr	500	5.14	2 570.00
C2.11		(c) Capacity_____m³ (large)	hr	500	6.58	3 290.00
		LDV'S				
	8.7.2	.4 LDV (specify size)				
C2.12		(a) LDV_____ton	km	5000	0.04	200.00
		WATER TANKERS				
	8.7.2	.5 Water tankers (specify capacity)				
C2.13		(a) Capacity_____liter (small, towable)	hr	500	0.87	435.00
					Carried Forward	661 670.00

					Brought Forward	661 670.00
C2.14		(b) Capacity_____liter (medium)	hr	500	4.26	2 130.00
C2.15		(c) Capacity_____liter (large)	hr	500	5.48	2 740.00
		LOADERS				
	8.7.2	.6 Wheel loaders (specify capacity)				
C2.16		(a) Capacity_____m^3 (small)	hr	500	3.38	1 690.00
C2.17		(b) Capacity_____m^3 (medium)	hr	500	6.46	3 230.00
C2.18		(c) Capacity_____m^3 (large)	hr	500	8.62	4 310.00
		GRADERS				
	8.7.2	.7 Motor graders (specify model/kw)				
C2.19		(a) Model _____/_____kw	hr	500	14.43	7 215.00
		BULLDOZERS				
	8.7.2	.8 Bulldozers (specify model/mass/kw)				
C2.20		(a) Model____/_____/kg____kw (small)	hr	500	9.91	4 955.00
C2.21		(b) Model____/_____/kg____kw (medium)	hr	500	11.15	5 575.00
C2.22		(c) Model____/_____/kg____kw (large)	hr	500	22.29	11 145.00
		EXCAVATORS				
	8.7.2	.9 Crawler excavators (specify model/mass/kw)				
C2.23		(a) Model____/_____/kg____kw (small)	hr	500	3.29	1 645.00
C2.24		(b) Model____/_____/kg____kw (medium)	hr	500	7.79	3 895.00
C2.25		(c) Model____/_____/kg____kw (large)	hr	500	10.17	5 085.00
		TLB'S				
	8.7.2	.10 Tractor loader backhoe (TLB)(specify model)				
C2.26		(a) Model_____	hr	1000	4.50	4 500.00
		RIDE-ON ROLLERS				
	8.7.2	.11 Self propelled vibrating rollers (smooth drum) (specify mass)				
C2.27		(a) Mass_____kg (medium)	hr	500	2.13	1 065.00
C2.28		(b) Mass_____kg (large)	hr	500	5.48	2 740.00
	8.7.2	.12 Self propelled vibrating rollers (padfoot) (specify mass)				
C2.29		(a) Mass_____kg (medium)	hr	500	5.48	2 740.00
C2.30		(b) Mass_____kg (large)	hr	500	7.91	3 955.00
		WALK BEHIND ROLLERS				
	8.7.2	.14 Walk behind vibrating rollers (specify model)				
C2.31		(a) Model_____(BW 61) (small)	hr	500	1.15	575.00
					Carried Forward	730 860.00

					Brought Forward	730 860.00
C2.32		(b) Model_____(BW 76) (medium)	hr	500	1.27	635.00
C2.33		(c) Model_____(BW 90) (large)	hr	500	1.43	715.00
		COMPACTORS				
	8.7.2	.15 Plate compactors (specify model)				
C2.34		(a) Model_____	hr	500	0.99	495.00
	8.7.2	.16 Wackers (specify model)				
C2.35		(a) Model_____	hr	500	1.33	665.00
		COMPRESSORS				
	8.7.2	.18 Portable diesel compressors (specify capacity)				
C2.36		(a) Capacity_____cfm (small)	hr	500	3.80	1 900.00
C2.37		(b) Capacity_____cfm (medium)	hr	500	7.39	3 695.00
C2.38		(c) Capacity_____cfm (large)	hr	500	14.78	7 390.00
		WATERPUMPS				
	8.7.2	.19 Waterpump (specify capacity)				
C2.39		(a) Capacity_____ liter/sec (small)	hr	500	1.17	585.00
C2.40		(b) Capacity_____ liter/sec (medium)	hr	500	1.72	860.00
C2.41		(c) Capacity_____ liter/sec (large)	hr	500	3.44	1 720.00
		GENERATORS				
	8.7.2	.21 Mobile generator set (specify KVA)				
C2.42		(a) _____KVA (small)	hr	500	1.15	575.00
C2.43		(b) _____KVA (medium])	hr	500	1.15	575.00
C2.44		(c) _____KVA (large)	hr	500	1.54	770.00
		TRANSPORT (COST TO AND FROM SITE)				
		Note: Distance shall be measured one way only (tender rates shall include for transport in both directions to and from site)				
	8.7.3	.1 Low bed				
C2.45		(a) Low-bed (suitable for the largest piece of equipment above)	km	5000	0.33	1 650.00
	8.7.3	.2 Tipper truck				
C2.46		(a) Small	km	500	0.21	105.00
C2.47		(b) Medium	km	500	0.23	115.00
C2.48		(c) Large	km	500	0.27	135.00
	8.7.3	.3 Flatbed truck				
C2.49		(a) Small	km	500	0.16	80.00
					Carried Forward	753 525.00

					Brought Forward	753 525.00
C2.50		(b) Medium	km	500	0.21	105.00
C2.51		(c) Large	km	500	0.26	130.00
	8.7.3	.4 Water tanker				
C2.52		(a) Small	km	500	0.21	105.00
C2.53		(b) Medium	km	500	0.21	105.00
C2.54		(c) Large	km	500	0.21	105.00
		EXISTIG SERVICES				
		EXISTING SERVICES				
	8.8.4	Existing services				
C2.55		(a) Supply or hire specialist equipment for the detection of services	sum	-	-	-
C2.56		(b) The use of equipment referred to above	day	50	87.31	4 365.50
C2.57		(c) Excavation by hand in soft material to expose services	m^3	2000	5.04	10 080.00
		BILL NO. C2 **DAYWORKS AND TEMPORARY WORKS (CIVIL WORK)**				
		Carried forward to Summary of Bills			**Total**	768 520.50

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C2 - Earthworks and pipework				
		BILL NO. C3 **EARTHWORKS**				
		CIVIL WORKS				
	SANS 1200 C	**CLEAR SITE**				
	PSC	**CLEAR SITE**				
	8.2.1.a	Clear and grub area for the following construction activity, and dispose of all material off site at a spoil site established by the Contractor				
C3.1		.3 Platforms	m²	6000	2.94	17 640.00
		Clear and grub strips for (where not cleared within other clear and grub areas) and dispose of material off site at a spoil site established by the Contractor				
	8.2.1.b	Pipelines				
C3.2		(c) Pipeline 6m wide	m	500	14.41	7 205.00
		REMOVE TREES				
	8.2.2	Remove and grub large trees and tree stumps, including filling in of holes, levelling of site and compaction, with trees of the following girth, and dispose of material off site at a spoil site established by the Contractor				
C3.3		(a) Exceeding 1m and up to and including 2m girth	no	3	541.46	1 624.38
C3.4		(b) Exceeding 2m and up to and including 3m girth	no	1	789.27	789.27
	SANS 1200 C	**TOPSOIL**				
		TOPSOIL				
	8.2.10.a	Remove topsoil to a depth of 150mm and				
C3.5		.1 Stockpile on site and maintain	m³	600	59.55	35 730.00
C3.6		.2 Spoil off site at spoil site established by the Contractor	m³	200	132.92	26 584.00
	SANS 1200 D	**FINISHING**				
	8.3.10	Topsoiling with material from stockpiles on site				
					Carried Forward	89 572.65

					Brought Forward	89 572.65
C3.7		(a) Spread over site, etc	m³	600	62.65	37 590.00
		Grassing or other vegetation cover				
		Hydroseeding				
	8.3.11.a.1	Provide seed mix				
C3.8		.1 Approved type grass seed mix	kg	100	516.00	51 600.00
	8.3.11.a.2	Hydroseeding				
C3.9		.1 Hydroseeding	ha	4	12 900.00	51 600.00
	8.3.11.b	Provide and lay approved sodding type				
C3.10		.1 Kikuju	m²	200	51.60	10 320.00
	SANS 1200 C	**REMOVE EXISTING STRUCTURES**				
		REMOVAL OF EXISTING STRUCTURES				
		Take down existing structures and stockpile usable material to be re-used on site designated by the Engineer and protect from damage and theft (re-erection measured elsewhere) Unsuitable material to be spoiled off site at a site established by the Contractor				
	8.2.12	Precast concrete palisade fencing				
C3.11		(a) Precast concrete palisade fence 1,8m high	m	100	181.46	18 146.00
	SANS 1200 C	**REMOVE EXISTING SERVICES**				
		REMOVE EXISTING SERVICES				
		Removal of underground services as follows				
	8.2.7.a	Dismantle remove and spoil pipelines, powerlines, cables, etc (excavation, backfilling and removal of concrete, etc measured elsewhere) including necessary precautions applying to hazardous materials, etc				
C3.12		.1 100mm uPVC water pipeline	m	200	64.40	12 880.00
C3.13		.2 160mm Asbestos cement sewer pipeline	m	200	81.08	16 216.00
C3.14		.3 450mm Concrete stormwater pipeline	m	50	165.01	8 250.50
		REMOVE EXISTING STRUCTURES				
					Carried Forward	296 175.15

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					Brought Forward	296 175.15
		Demolish and spoil material for structures, buildings, etc at a spoil site established by the Contractor				
	8.2.8.a	Sundry structures, etc				
C3.15		.3 Mass concrete structures	m³	10	792.45	7 924.50
C3.16		.4 Reinforced concrete structures	m³	10	914.69	9 146.90
C3.17		.5 150mm Thick concrete paving	m²	100	118.87	11 887.00
C3.18		.6 150mm Thick reinforced concrete paving	m²	100	137.20	13 720.00
C3.19		.7 Concrete kerbing (all types and sizes)	m	200	73.28	14 656.00
C3.20		.8 Mass brickwork structures	m³	5	792.45	3 962.25
C3.21		.9 Sewer manholes (all sizes)	no	3	802.18	2 406.54
C3.22		.10 Stormwater manholes, kerb inlets, etc (all sizes)	no	3	802.18	2 406.54
C3.23		.11 Building rubble, trees, etc	m³	100	124.03	12 403.00
	SANS 1200 DM	**ROADBED IN POOR SOIL CONDITIONS**				
	PSDM	**ROADBED IN POOR SOIL CONDITIONS**				
	8.3.3	Roadbed preparation and compaction of material consisting of roller compaction with				
		.1 10 Roller pass compaction with 10 ton padfoot vibratory roller below filling for soil mattresses, etc Note: scarifying 200 mm deep, watering up to saturation				
C3.24		.1 Inlet canal	m²	110	34.03	3 743.30
C3.25		.2 Inlet works	m²	510	34.03	17 355.30
C3.26		.3 Degritter and measurement flumes	m²	820	34.03	27 904.60
C3.27		.4 Raw sewage pump station	m²	550	34.03	18 716.50
C3.28		.5 Division structure	m²	115	34.03	3 913.45
C3.29		.6 Primary settling tanks	m²	3450	8.46	29 187.00
C3.30		.7 Primary sludge pump station with strain press	m²	510	34.03	17 355.30
C3.31		.8 Fine screens	m²	450	34.03	15 313.50
C3.32		.9 Bio reactor	m²	8500	8.46	71 910.00
					Carried Forward	580 086.83

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					Brought Forward	580 086.83
C3.33		.10 Membrane plant	m²	4200	8.46	35 532.00
C3.34		.11 Membrane re-use pump station and MCC	m²	1350	34.03	45 940.50
C3.35		.12 Dewatering building	m²	2600	8.46	21 996.00
C3.36		.13 Primary/WAS filtrate pump station	m²	140	34.03	4 764.20
C3.37		.14 Primary sludge holding tanks	m²	1000	34.03	34 030.00
C3.38		.15 WAS sludge holding tanks	m²	900	34.03	30 627.00
C3.39		.16 Sludge cake silos	m²	500	8.46	4 230.00
C3.40		.17 Overflow dams	m²	10000	8.46	84 600.00
C3.41		.18 Emergency storage dam	m²	2400	8.46	20 304.00
C3.42		.19 Chemical dosing, MBR plant	m²	220	34.03	7 486.60
C3.43		.20 Chemical dosing, 08 plant	m²	130	34.03	4 423.90
C3.44		.21 Head of works sub station	m²	280	34.03	9 528.40
C3.45		.22 Bio reactor sub station	m²	340	34.03	11 570.20
C3.46		.23 Sludge management sub station	m²	420	34.03	14 292.60
C3.47		.24 Gate house	m²	300	34.03	10 209.00
C3.48		.25 Guard towers	m²	150	34.03	5 104.50
C3.49		.26 Odour Control Slabs	m²	380	34.03	12 931.40
	SANS 1200 D	**EARTHWORKS**				
	PSD	**Shoring:** Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard. **Dewatering:** Dewatering of earthworks will not be measured separately and shall be included in SANS 1200A reference 8.3.2.2.(h) in the Preliminary and General bill				
					Carried Forward	937 657.13

[redacted]

					Brought Forward	937 657.13
		Note: Material excavated needs to be selected and all re-usable material stockpiled on site or used as fill, and un-suitable material are to be spoiled off site. No additional payment will be made for this selection process. **CUT TO SPOIL**				
	8.3.2.a.1	Excavate in all materials and spoil off site at a site established by the Contractor for				
		.1 Platforms:(soil rafts)				
C3.50		.1 Coarse screens, stone traps and inlet canal	m³	59	126.55	7 466.45
C3.51		.2 Inlet works	m³	244	126.55	30 878.20
C3.52		.3 Degritter and measurement flumes	m³	504	126.55	63 781.20
C3.53		.4 Raw sewage pump station	m³	357	126.55	45 178.35
C3.54		.5 Division structure	m³	126	126.55	15 945.30
C3.55		.6 Primary settling tanks	m³	1652	86.30	142 567.60
C3.56		.7 Primary sludge pump station with strain press	m³	414	126.55	52 391.70
C3.57		.8 Fine screens	m³	194	126.55	24 550.70
C3.58		.9 Bio reactor	m³	7910	86.30	682 633.00
C3.59		.10 Membrane plant	m³	1470	86.30	126 861.00
C3.60		.11 Membrane re-use pump station and MCC	m³	794	126.55	100 480.70
C3.61		.12 Dewatering building	m³	1100	86.30	94 930.00
C3.62		.13 Primary/WAS filtrate pump station	m³	56	126.55	7 086.80
C3.63		.14 Primary sludge holding tanks	m³	376	126.55	47 582.80
C3.64		.15 WAS sludge holding tanks	m³	308	126.55	38 977.40
C3.65		.16 Sludge cake silos	m³	266	126.55	33 662.30
C3.66		.17 Overflow dams, including embankments, etc	m³	1764	86.30	152 233.20
C3.67		.18 Emergency storage dam	m³	1316	86.30	113 570.80
C3.68		.19 Chemical dosing, MBR plant	m³	40	126.55	5 062.00
C3.69		.20 Chemical dosing, 08 plant	m³	50	126.55	6 327.50
					Carried Forward	2 729 824.13

						Brought Forward	2 729 824.13
C3.70		.21 Head of works sub station	m³	80	126.55	10 124.00
C3.71		.22 Bio reactor sub station	m³	91	126.55	11 516.05
C3.72		.23 Sludge management sub station	m³	111	126.55	14 047.05
C3.73		.24 Gate house	m³	105	126.55	13 287.75
C3.74		.25 Guard towers	m³	73	126.55	9 238.15
C3.75		.26 Terrace excavation at area of WAS sludge holding tanks between 8.0 and 9.2m deep	m³	107	126.55	13 540.85
C3.76	8.3.2.a.1	.2 Levelling over site	m³	140	126.55	17 717.00
C3.77	8.3.2.a.1	.3 Open channels	m³	42	126.55	5 315.10
		CUT TO STOCK PILE				
	8.3.2.a.2	Excavate in all materials and stockpile on site for				
	8.3.2.a.2	.1 Platforms;soil rafts, restricted backfill and fill under floors)				
C3.78		.1 Coarse screens, stone traps and inlet canal	m³	450	65.33	29 398.50
C3.79		.2 Inlet works	m³	990	65.33	64 676.70
C3.80		.3 Degritter and measurement flumes	m³	1820	65.33	118 900.60
C3.81		.4 Raw sewage pump station	m³	925	65.33	60 430.25
C3.82		.5 Division structure	m³	190	65.33	12 412.70
C3.83		.6 Primary settling tanks	m³	7000	65.33	457 310.00
C3.84		.7 Primary sludge pump station with strain press	m³	1120	65.33	73 169.60
C3.85		.8 Fine screens	m³	1050	65.33	68 596.50
C3.86		.9 Bio reactor	m³	6700	65.33	437 711.00
C3.87		.10 Membrane plant	m³	7900	54.44	430 076.00
C3.88		.11 Membrane re-use pump station and MCC	m³	1200	54.44	65 328.00
C3.89		.12 Dewatering building	m³	6550	54.44	356 582.00
C3.90		.13 Primary/WAS filtrate pump station	m³	220	65.33	14 372.60
C3.91		.14 Primary sludge holding tanks	m³	2000	54.44	108 880.00
						Carried Forward	5 122 454.53

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[redacted]

						Brought Forward	5 122 454.53
C3.92		.15	WAS sludge holding tanks	m³	1720	54.44	93 636.80
C3.93		.16	Sludge cake silos	m³	1550	65.33	101 261.50
C3.94		.17	Overflow dams, including embankments, etc	m³	220	65.33	14 372.60
C3.95		.18	Emergency storage dam	m³	125	65.33	8 166.25
C3.96		.19	Chemical dosing, MBR plant	m³	325	65.33	21 232.25
C3.97		.20	Chemical dosing, 08 plant	m³	310	65.33	20 252.30
C3.98		.21	Head of works sub station	m³	500	65.33	32 665.00
C3.99		.22	Bio reactor sub station	m³	590	65.33	38 544.70
C3.100		.23	Sludge management sub station	m³	680	65.33	44 424.40
C3.101		.24	Gate house	m³	450	65.33	29 398.50
C3.102		.25	Guard towers	m³	700	65.33	45 731.00
C3.103		.26	Terrace excavation at area of WAS sludge holding tanks between 8.0 and 9.2m deep	m³	274	65.33	17 900.42
C3.104	8.3.2.a.2	.2	Levelling over site	m³	360	65.33	23 518.80
C3.105	8.3.2.a.2	.3	Open channels	m³	110	65.33	7 186.30
C3.106	8.3.2.a.2	.4	Surface layer 125mm thick over site for dust control and working floor below structures	m³	2200	54.44	119 768.00
			CUT TO FILL				
	8.3.2.a.3		Excavate in all materials and use as fill over site, compacted to 90% mod AASHTO density for				
	8.3.2.a.3	.1	Filling to existing redundant ponds on site				
C3.107		.1	Coarse screens, stone traps and inlet canal	m³	70	81.68	5 717.60
C3.108		.2	Inlet works	m³	500	81.68	40 840.00
C3.109		.3	Degritter and measurement flumes	m³	1300	81.68	106 184.00
C3.110		.4	Raw sewage pump station	m³	1260	81.68	102 916.80
C3.111		.5	Division structure	m³	700	81.68	57 176.00
C3.112		.6	Primary settling tanks	m³	3250	68.07	221 227.50
						Carried Forward	6 274 575.25

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						Brought Forward	6 274 575.25
C3.113		.7	Primary sludge pump station with strain press	m³	1400	81.68	114 352.00
C3.114		.8	Fine screens	m³	150	81.68	12 252.00
C3.115		.9	Bio reactor	m³	41800	68.07	2 845 326.00
C3.116		.10	Membrane plant	m³	1150	68.07	78 280.50
C3.117		.11	Membrane re-use pump station and MCC	m³	3700	68.07	251 859.00
C3.118		.12	Dewatering building	m³	180	81.68	14 702.40
C3.119		.13	Primary/WAS filtrate pump station	m³	150	81.68	12 252.00
C3.120		.14	Primary sludge holding tanks	m³	300	81.68	24 504.00
C3.121		.15	WAS sludge holding tanks	m³	150	81.68	12 252.00
C3.122		.16	Sludge cake silos	m³	80	81.68	6 534.40
C3.123		.17	Overflow dams, including embankments, etc	m³	10700	81.68	873 976.00
C3.124		.18	Emergency storage dam	m³	7900	81.68	645 272.00
C3.125		.19	Chemical dosing, MBR plant	m³	50	81.68	4 084.00
C3.126		.20	Chemical dosing, 08 plant	m³	50	81.68	4 084.00
C3.127		.21	Head of works sub station	m³	110	81.68	8 984.80
C3.128		.22	Bio reactor sub station	m³	120	81.68	9 801.60
C3.129		.23	Sludge management sub station	m³	140	81.68	11 435.20
C3.130		.24	Gate house	m³	100	81.68	8 168.00
C3.131		.25	Guard towers	m³	80	81.68	6 534.40
C3.132		.26	Terrace excavation at area of WAS sludge holding tanks between 8.0 and 9.2m deep	m³	760	81.68	62 076.80
C3.133	8.3.2.a.3	.2	Levelling over site	m³	1000	81.68	81 680.00
C3.134	8.3.2.a.3	.3	Open channels	m³	300	81.68	24 504.00
	8.3.2.a.4	Excavate in all materials and use as fill over site, compacted to 98% mod AASHTO density for					
C3.135		.1	Platforms (soil rafts)	m³	1000	81.68	81 680.00
C3.136		.2	Levelling over site	m³	1000	81.68	81 680.00
						Carried Forward	11 550 850.35

					Brought Forward	11 550 850.35
		CUT TO FILL WITH SAND MATERIAL FROM SITE				
	8.3.2.a.7	Excavate in all materials and use as fill over site, compacted to 100% mod AASHTO density for				
C3.137		.1 Platforms (soil rafts)	m³	500	81.68	40 840.00
C3.138		.2 Levelling over site	m³	500	81.68	40 840.00
	SANS 1200 ME	**EARTHWORKS WITH MODIFIED MATERIAL**				
	PSME	**SUPPLY OF MATERIAL**				
	8.3.3.5	Extra over reference 8.3.2 (a) (b) & (c) for the supply of the following material supplied by the Contractor from commercial sources for modifying excavated material from site (mechanical modification measured under reference 8.3.5.(c) elsewhere) of the following quality				
C3.139		(a) G7 material	m³	300	248.89	74 667.00
C3.140		(b) G5 material	m³	200	259.05	51 810.00
		PROCESSING				
		Process layerwork material by the following process				
C3.141	8.3.5	(c) Mechanical modification	m³	500	55.36	27 680.00
	SANS 1200 D	**EARTHWORKS WITH COMMERCIAL MATERIAL**				
	PSD	**EARTHWORKS WITH COMMERCIAL MATERIAL**				
		Extra over reference 8.3.2 above for constructing filling with material supplied by the Contractor from commercial sources of the following quality				
	8.3.4.a	G7 material in				
		.2 Platforms compacted to 98% mod AASHTO density				
C3.142		.1 MBR reuse pump station and MCC	m³	2600	296.45	770 770.00
	8.3.4.a	Coarse sand without fines as drainage layer				
		.3 Platforms compacted to 95% mod AASHTO density				
C3.143		.1 Overflow dams	m³	2500	315.64	789 100.00
C3.144		.2 Emergency storage dam	m³	600	315.64	189 384.00
		ROCK EXCAVATION				
					Carried Forward	13 535 941.35

[redacted]

					Brought Forward	13 535 941.35
	8.3.2.b	Extra over reference 8.3.2 (a) for				
C3.145		.2 Hard rock excavation	m³	100	803.79	80 379.00
	SANS 1200 D	**EARTHWORKS WITH MATERIAL STOCKPILED ON SITE**				
		EARTHWORKS WITH MATERIAL STOCKPILED ON SITE				
		The following work is to be constructed with stockpiled material on site (including material stockpiled outside the site perimeter fence - as indicated on the pre-tender site inspection) from previous contracts, and must be loaded and hauled to the place of use, including all haul, accommodation of traffic and complying to all requirements on site as specified				
		STOCKPILE TO FILL				
	8.3.4.1	Crushed stone material and compacted to 98% mod AASHTO density				
	8.3.4.1	.1 Platforms:(soil rafts)				
C3.146		.1 Degritter and measurement flumes	m³	200	102.11	20 422.00
C3.147		.2 Raw sewage pump station	m³	460	68.07	31 312.20
C3.148		.3 Division structure	m³	190	102.11	19 400.90
C3.149		.4 Primary sludge pump station	m³	250	102.11	25 527.50
C3.150		.5 Bio reactor	m³	9100	68.07	619 437.00
C3.151		.6 Primary sludge holding tanks	m³	195	102.11	19 911.45
C3.152		.7 Primary/WAS filtrate pump station	m³	10	102.11	1 021.10
C3.153		.8 Emergency storage dam	m³	25	102.11	2 552.75
C3.154	8.3.4.1	.2 Surface layer 125mm thick over site for dust control and working floor below structures	m³	2200	86.22	189 684.00
	8.3.4.1	Gravel and soil material and compacted to 98% mod AASHTO density				
	8.3.4.1	.3 Platforms:(soil rafts)				
C3.155		.1 Coarse screens, stone traps and inlet canal	m³	120	102.11	12 253.20
C3.156		.2 Inlet works	m³	620	86.22	53 456.40
C3.157		.3 Degritter and measurement flumes	m³	1480	68.07	100 743.60
					Carried Forward	14 712 042.45

[redacted]

						Brought Forward	14 712 042.45
C3.158		.4 Raw sewage pump station	m³	100	102.11	10 211.00
C3.159		.5 Division structure	m³	95	102.11	9 700.45
C3.160		.6 Primary settling tanks	m³	5200	68.07	353 964.00
C3.161		.7 Primary sludge pump station with strain press	m³	480	102.11	49 012.80
C3.162		.8 Fine screens	m³	550	102.11	56 160.50
C3.163		.9 Bio reactor	m³	500	102.11	51 055.00
C3.164		.10 Membrane plant	m³	6650	68.07	452 665.50
C3.165		.11 Membrane re-use pump station and MCC	m³	200	102.11	20 422.00
C3.166		.12 Dewatering building	m³	4400	68.07	299 508.00
C3.167		.13 Primary/WAS filtrate pump station	m³	100	102.11	10 211.00
C3.168		.14 Primary sludge holding tanks	m³	1700	86.22	146 574.00
C3.169		.15 WAS sludge holding tanks	m³	1630	86.22	140 538.60
C3.170		.16 Sludge cake silos	m³	1350	86.22	116 397.00
C3.171		.17 Overflow dams, including embankments, etc	m³	50	86.22	4 311.00
C3.172		.18 Emergency storage dam	m³	50	86.22	4 311.00
C3.173		.19 Chemical dosing, MBR plant	m³	210	86.22	18 106.20
C3.174		.20 Chemical dosing, 08 plant	m³	190	86.22	16 381.80
C3.175		.21 Head of works sub station	m³	340	86.22	29 314.80
C3.176		.22 Bio reactor sub station	m³	390	86.22	33 625.80
C3.177		.23 Sludge management sub station	m³	460	86.22	39 661.20
C3.178		.24 Flammable store	m³	120	86.22	10 346.40
C3.179		.25 Weigh bridge office	m³	80	86.22	6 897.60
C3.180		.26 Gate house	m³	420	86.22	36 212.40
C3.181		.27 Guard towers	m³	460	86.22	39 661.20
	SANS 1200 D	**EARTHWORKS WITH MATERIAL STOCKPILED ON SITE**				
						Carried Forward	16 667 291.70

[redacted]

					Brought Forward	16 667 291.70
		EARTHWORKS WITH MATERIAL STOCKPILED ON SITE The following work is to be constructed with stockpiled material on site (including material stockpiled outside the site perimeter fence - as indicated on the pre-tender site inspection) from previous contracts, and must be loaded and hauled to the place of use, including all haul, accommodation of traffic and complying to all requirements on site as specified Note: The following material shall be taken from the existing crushed stone stockpile on the site, and screened to remove all fines (all fines up to 5mm in diameter) and stockpiled for use in drainage blanket below structures. Fines removed shall be stockpiled on site for future use.				
C3.182		.1 Screen and stockpile material on site	m³	8000	118.25	946 000.00
	8.3.4.2	Screened stone material and compacted to 95% mod AASHTO density .1 Platforms:(soil rafts)				
C3.183		.1 Overflow dams	m³	3000	86.22	258 660.00
C3.184		.2 Emergency storage dam	m³	700	86.22	60 354.00
	SANS 1200 DM	**COMMERCIAL DUMP ROCK**				
	PSDM 8.3.4.d	**COMMERCIAL DUMP ROCK** Construct dump rock layer with material supplied by the Contractor from commercial sources of suitable size, quality and grading .1 Dump rock layer 1000mm thick placed in position and compacted with 10 pass 10 ton roller compaction below platforms				
C3.185		.1 Degritter and measurement flumes	m³	200	445.24	**Rate only**
C3.186		.2 Raw sewage pump station	m³	460	445.24	**Rate only**
C3.187		.3 Division structure	m³	190	445.24	**Rate only**
C3.188		.4 Primary sludge pump station	m³	250	445.24	**Rate only**
C3.189		.5 Bio reactor	m³	9100	445.24	**Rate only**
C3.190		.6 Primary sludge holding tanks	m³	195	445.24	**Rate only**
C3.191		.7 Primary/WAS filtrate pump station	m³	10	445.24	**Rate only**
					Carried Forward	17 932 305.70

[redacted]

					Brought Forward	17 932 305.70
C3.192		.8 Emergency storage dam	m³	25	445.24	11 131.00
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
		RESTRICTED EXCAVATIONS **Note:** Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for various small elements				
C3.193		.1 Coarse screens, stone traps and inlet canal	m³	155	365.86	56 708.30
C3.194		.2 Inlet works	m³	25	365.86	9 146.50
C3.195		.3 Degritter and measurement flumes	m³	110	365.86	40 244.60
C3.196		.4 Raw sewage pump station	m³	10	286.38	2 863.80
C3.197		.5 Division structure	m³	5	286.38	1 431.90
C3.198		.6 Primary settling tanks	m³	40	286.38	11 455.20
C3.199		.7 Primary sludge pump station with strain press	m³	15	286.38	4 295.70
C3.200		.8 Fine screens	m³	23	286.38	6 586.74
C3.201		.9 Bio reactor	m³	250	187.82	46 955.00
C3.202		.10 Membrane plant	m³	500	286.38	143 190.00
C3.203		.11 Membrane re-use pump station and MCC	m³	35	286.38	10 023.30
C3.204		.12 Dewatering building	m³	190	286.38	54 412.20
C3.205		.13 Primary/WAS filtrate pump station	m³	5	286.38	1 431.90
C3.206		.14 Primary sludge holding tanks	m³	46	286.38	13 173.48
C3.207		.15 WAS sludge holding tanks	m³	165	286.38	47 252.70
C3.208		.16 Sludge feed pump station	m³	35	286.38	10 023.30
C3.209		.17 Sludge cake silos	m³	12	286.38	3 436.56
					Carried Forward	18 406 067.88

[redacted]

					Brought Forward	18 406 067.88
C3.210		.18 Overflow dams, including embankments, etc	m³	320	286.38	91 641.60
C3.211		.19 Emergency storage dam	m³	200	286.38	57 276.00
C3.212		.20 Chemical dosing, MBR plant	m³	15	286.38	4 295.70
C3.213		.21 Chemical dosing, 08 plant	m³	80	286.38	22 910.40
C3.214		.22 Head of works sub station	m³	15	286.38	4 295.70
C3.215		.23 Bio reactor sub station	m³	15	286.38	4 295.70
C3.216		.24 Sludge management sub station	m³	20	286.38	5 727.60
C3.217		.25 Flammable store	m³	120	286.38	34 365.60
C3.218		.26 Weigh bridge office	m³	80	286.38	22 910.40
C3.219		.27 Gate house	m³	10	286.38	2 863.80
C3.220		.28 Guard towers	m³	10	286.38	2 863.80
C3.221		.29 WAS pump station (08 plant)	m³	70	286.38	20 046.60
C3.222		.30 Sludge feed pump station	m³	110	286.38	31 501.80
C3.223		.31 Chambers and manholes	m³	420	286.38	120 279.60
	8.3.3.b	Extra over reference 8.3.3 (a) for				
C3.224		.2 Hard rock excavation	m³	100	803.79	80 379.00
C3.225		.3 Boulder excavation class A	m³	20	803.79	16 075.80
C3.226		.4 Boulder excavation class B	m³	20	803.79	16 075.80
	SANS 1200D	**Shoring of excavations will only be measured if this is specifically required by the Engineer for protection of an existing structure or service, that could be damaged due to the excavations. Refer to the Project Specification in this regard.**				
		LATERAL SUPPORT/SHORING **Note:** Shoring of excavations will only be measured if this is specifically required by the Engineer for protection of an existing structure or service, that could be damaged due to the excavations. Refer to the Project Specification in this regard.				
	8.3.7.a	Lateral support/shoring Dwg 3089.30.01.GZB.11.X003, X006, X008				
					Carried Forward	18 943 872.78

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					Brought Forward	18 943 872.78
	8.3.7.a	For excavations further than 30m from existing buildings/structures using high impact and/or high frequency vibrating driver/equipment				
C3.227		.1 Raw sewage pump station - maximum depth of 5m	m²	120	3 031.23	363 747.60
C3.228		.2 Primary sludge pump station - maximum depth of 5m	m²	180	-	-
C3.229		.3 Bio reactor - maximum depth of 5m	m²	800	-	-
	8.3.7.b	For excavations closer than 30m from existing buildings/structures using silent and vibration free shoring technologies				
C3.230		.1 Raw sewage pump station - maximum depth of 5m	m²	400	-	-
C3.231		.2 Primary sludge pump station - maximum depth of 5m	m²	100	-	-
C3.232		.3 Bio reactor - maximum depth of 5m	m²	2000	-	-
	SANS 1200 D	**EXISTING SERVICES**				
		EXISTING SERVICES				
	8.3.8.2.a	Dealing with the following services that are at risk because of construction of earthworks (other than trenching)				
C3.233		.1 11kv electrical cable parallel to excavation	no	1	503.55	503.55
C3.234		.2 600mm GRP pipe parallel to excavation	no	1	503.55	503.55
C3.235		.3 Two 600mm dia CI pipes next to chamber excavations	no	1	503.55	503.55
C3.236		.4 150mm AC water pipes parallel to excavation	no	1	503.55	503.55
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
		Extra over reference 8.3.3 (a) for backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
	8.3.9.a	.1 Alongside walls in foundations				
C3.237		.1 Coarse screens, stone traps and inlet canal	m³	330	-	Included
C3.238		.2 Inlet works	m³	380	-	included
C3.239		.3 Degritter and measurement flumes	m³	340	-	Included
					Carried Forward	19 309 634.58

						Brought Forward	19 309 634.58
C3.240		.4	Raw sewage pump station	m³	830	-	included
C3.241		.5	Division structure	m³	90	-	included
C3.242		.6	Primary settling tanks	m³	1850	-	included
C3.243		.7	Primary sludge pump station with strain press	m³	570	-	included
C3.244		.8	Fine screens	m³	290	-	included
C3.245		.9	Bio reactor	m³	4850	-	included
C3.246		.10	Membrane plant	m³	1300	-	included
C3.247		.11	Membrane re-use pump station and MCC	m³	1200	-	included
C3.248		.12	Dewatering building	m³	500	-	included
C3.249		.13	Primary/WAS filtrate pump station	m³	220	-	included
C3.250		.14	Primary sludge holding tanks	m³	260	-	included
C3.251		.15	WAS sludge holding tanks	m³	90	-	included
C3.252		.16	Sludge feed pump station	m³	20	-	included
C3.253		.17	Sludge cake silos	m³	170	-	included
C3.254		.18	Overflow dams, including embankments, etc	m³	210	-	included
C3.255		.19	Emergency storage dam	m³	130	-	included
C3.256		.20	Chemical dosing, MBR plant	m³	90	-	included
C3.257		.21	Chemical dosing, 08 plant	m³	110	-	included
C3.258		.22	Head of works sub station	m³	160	-	included
C3.259		.23	Bio reactor sub station	m³	180	-	included
C3.260		.24	Sludge management sub station	m³	215	-	included
C3.261		.25	Flammable store	m³	45	-	included
C3.262		.26	Weigh bridge office	m³	70	-	included
C3.263		.27	Gate house	m³	160	-	included
C3.264		.28	Guard towers	m³	240	-	included
C3.265		.29	WAS pump station (08 plant)	m³	100	-	included
						Carried Forward	19 309 634.58

[redacted]

					Brought Forward	19 309 634.58
C3.266		.30 Sludge feed pump station	m³	60	-	included
C3.267		.31 Chambers and manholes	m³	500	-	included
	8.3.9.a	.2 Behind retaining walls				
C3.268		.1 Various structures	m³	300	-	included
	8.3.9.a	.3 Under floors				
C3.269		.1 Strain press	m³	65	-	included
C3.270		.2 Fine screens	m³	210	-	included
C3.271		.3 Bio reactor	m³	1900	-	included
C3.272		.4 Dewatering building	m³	1700	-	included
C3.273		.5 Primary sludge holding tanks	m³	70	-	included
C3.274		.6 Sludge cake silos	m³	25	-	included
C3.275		.7 Chemical dosing (MBR plant)	m³	30	-	included
C3.276		.8 Chemical dosing (08 plant)	m³	20	-	included
		COMMERCIAL MATERIAL				
	8.3.4.b	Extra over reference 8.3.3 (a) for backfill or for fill with G6 material supplied by the Contractor from commercial sources against structures and compacted to 98% mod AASHTO density in various structures				
C3.277		.1 Alongside walls in foundations	m³	200	253.97	50 794.00
C3.278		.2 Under floors	m³	170	253.97	43 174.90
	SANS 1200 G	**SOILCRETE**				
	PSG	**SOILCRETE**				
		Soilcrete (5% OPC)				
	8.4.10	(a) Backfilling around structures, pipes, etc as directed				
C3.279		.1 Degritter and measurement flumes	m³	75	1 191.52	89 364.00
C3.280		.2 Raw sewage pump station	m³	9	1 191.52	10 723.68
C3.281		.3 Primary settling tanks	m³	80	1 191.52	95 321.60
					Carried Forward	19 599 012.76

[redacted]

					Brought Forward	19 599 012.76
C3.282		.4 Primary sludge pump station	m³	20	1 191.52	23 830.40
C3.283		.5 Between fine screens and bio reactor	m³	160	1 191.52	190 643.20
C3.284		.5 MBR plant	m³	25	1 191.52	29 788.00
C3.285		.7 MBR reuse pump station and MCC	m³	15	1 191.52	17 872.80
C3.286		.8 Primary sludge holding tanks	m³	12	1 191.52	14 298.24
C3.287		.9 WAS sludge holding tanks	m³	10	1 191.52	11 915.20
C3.288		.10 Overflow dams	m³	5	1 191.52	5 957.60
C3.289		.11 Chemical dosing (MBR plant)	m³	8	1 191.52	9 532.16
C3.290		.12 Chemical dosing (08 plant)	m³	5	1 191.52	5 957.60
	SANS 1200 DK	**GABIONS AND PITCHING**				
	PSDK	**PREPARATION**				
	8.2.1	Surface preparation for bedding of gabions and mattresses				
C3.291		(a) Cavities filled with approved excavated material or rock and compacted to 95% mod AASHTO density	m²	200	67.38	13 476.00
	SANS 1200 DK	**GABIONS AND MATTRESSES (COASTAL)**				
		GABIONS				
	8.2.2.3	Gabions using plastic coated galvanized wire of the following sizes				
C3.292		(b) 2,0 x 1,0 x 0,5m Box of 80mm mesh size	m³	100	2 112.24	211 224.00
		MATTRESSES				
	8.2.2.4	Mattresses using plastic coated galvanized wire of the following sizes				
C3.293		(b) 3,0 x 1,0 x 0,23m Mattress of 50mm mesh size	m³	110	1 286.28	141 490.80
C3.294		(c) 6,0 x 2,0 x 0,3m Mattress of 50mm mesh size	m³	30	2 122.39	63 671.70
	SANS 1200 DK	**GEOTEXTILES**				
		GEOTEXTILES				
	8.2.4	Supply and lay geotextile fabric below gabions and mattresses with suitable overlaps (net area of Bidim will be measured for payment)				
					Carried Forward	20 338 670.46

					Brought Forward	20 338 670.46
C3.295		(b) Bidim A4	m²	1000	19.89	19 890.00
	SANS 1200 DK	**STONE PITCHING**				
		GROUTED				
		Pitching including trimming and compaction of excavated surfaces to 95% mod AASHTO density				
	8.2.5.b	200mm Thick ordinary 1:3 cement/riversand grouted stone pitching to				
C3.296		.1 Flat slope	m²	200	288.71	57 742.00
C3.297		.2 Steep slope	m²	50	288.71	14 435.50
	SANS 1200 ME	**CRUSHING PLANT**				
	PSME	Establishment				
	8.3.6	Provide crushing plant of suitable size				
C3.298		(d) Provide, erect, and commission plant on site	sum	-	166 023.00	166 023.00
C3.299		(e) Dismantle, remove from site and clean up site	sum	-	-	Included
C3.300		(f) Move plant to new location on site and clean up site	no	1	-	Included
	8.3.6	Crushing material				
C3.301		(g) Load rock from stockpile on site, transport to crusher, crush material to specification, load and stockpile on site for future use	m³	14000	150.89	2 112 460.00
	SANS 1200 ME	**SCREENING PLANT**				
		Establishment				
	8.3.7	Provide screening plant of suitable size				
C3.302		(a) Provide, erect, and commission plant on site	sum	-	53 320.00	53 320.00
C3.303		(b) Dismantle, remove from site and clean up site	sum	-	-	Included
C3.304		(c) Move plant to new location on site and clean up site	no	1	-	Included
	8.3.8	Screened out material not used in laverworks				
C3.305		(a) Oversize material	m³	2000	118.25	236 500.00
C3.306		(b) Fines	m³	2000	118.25	236 500.00
					Carried Forward	23 235 540.96

					Brought Forward	23 235 540.96
C3.307		(c) Oversize material and fines	m³	2000	118.25	236 500.00
	SANS 1200 D	**RETAINING WALLS**				
	PSD	**RESTRICTED EXCAVATION**				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
C3.308		.1 Wall footings	m³	20	365.86	7 317.20
		HARD ROCK EXCAVATION				
	8.3.3.b	Extra over reference 8.3.3 (a) for				
C3.309		.2 Hard rock excavation	m³	2	803.79	1 607.58
		BACKFILLING WITH MATERIAL FROM SITE				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures with material from site				
	8.3.9.a	Selected material compacted to 98% mod AASHTO density				
C3.310		.1 Alongside walls in foundations	m³	50	-	Included
C3.311		.2 Behind retaining walls	m³	50	-	Included
		BACKFILLING WITH COMMERCIAL MATERIAL				
		Extra over reference 8.3.9 (a) above for constructing filling with material supplied by the Contractor from commercial sources of the following quality				
	8.3.4.a	G7 material compacted to 98% mod AASHTO density				
C3.312		.1 Alongside walls in foundations	m³	50	248.89	12 444.50
C3.313		.2 Behind retaining walls	m³	50	248.89	12 444.50
	SANS 1200 GA	**FORMWORK**				
		ROUGH FORMWORK				
	8.2.1.b	Plane vertical				
C3.314		.1 Sides of wall footings	m²	10	418.08	4 180.80
	8.2.3	Rough formwork to narrow widths				
C3.315		(a) Edges, risers, etc not exceeding 300mm wide	m	20	125.43	2 508.60
					Carried Forward	23 512 544.14

[redacted]

					Brought Forward	23 512 544.14
	SANS 1200 GA	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1.a	Mild steel				
C3.316		.1 All sizes	ton	0.1	18 976.98	1 897.70
	8.3.1.b	High tensile steel				
C3.317		.1 All sizes	ton	0.4	18 976.98	7 590.79
	SANS 1200 GA	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C3.318		(a) Blinding layer 50mm thick	m^3	2	1 888.56	3 777.12
	8.4.3.c	Strength concrete 30Mpa/19mm				
C3.319		.1 Wall footings	m^3	10	3 159.23	31 592.30
	SANS 1200 D	**RETAINING WALLS**				
		LOFFELSTEIN WALLS				
	8.3.16	L500 blocks Dwg 3089.30.10.WLA.11.D001				
C3.320		(a) Retaining wall maximum 9 blocks high laid in accordance with manufacturers instructions with blocks filled with garden soil complete	m^2	50	1 742.58	87 129.00
		CLEANING AND DESLUDGING PONDS				
		CLEANING, DESLUDGING, DEWATERING AND BACKFILLING OF POND SYSTEM Dwg 3089.00.00.AAB.10.U022				
	SANS 1200 D	**SPECIAL WATER CONTROL**				
		SPECIAL WATER CONTROL **Note:** Keeping excavation free from water is covered by SANS 1200A ref item 8.3.2.2.(h) in the Preliminary and General bill. Special water control is only measurable under "extreme circumstances" such as a river crossing with permanent water flow, draining of existing dams, etc. This item must be specified in the Project Specification				
					Carried Forward	23 644 531.05

[redacted]

					Brought Forward	23 644 531.05
	8.3.14	Special water control in reed beds and sludge ponds				
		PONDS NO.6 & 7				
		Pond 6 & 7				
C3.321		(a) Dewater, prepare for construction of overflow dams and keep dry during construction of dams (approximate volume 15,000m3)	sum	-	2299566.64	2 299 566.64
		PONDS NO.8, 9, 10, 11, 12 & 13				
	8.3.14	Special water control in reed beds and sludge ponds				
	8.3.14	Pond 8				
C3.322		(b) Dewater, prepare for construction activity and keep dry during construction activity (approximate volume of 5,000m^3)	sum	-	1374.73	1 374.73
	8.3.14	Pond 9				
C3.323		(c) Dewater, prepare for construction activity and keep dry during construction activity (approximate volume of 1,900m^3)	sum	-	672.36	672.36
	8.3.14	Pond 10				
		(d) Dewater, prepare for construction activity and keep dry during construction activity (approximate volume of 10,000m^3)	sum	-		
	8.3.14	Pond 11				
C3.325		(e) Dewater, prepare for construction activity and keep dry during construction activity (approximate volume of 4,300m^3)	sum	-	1216.13	1 216.13
	8.3.14	Pond 12				
C3.326		(f) Dewater, prepare for construction activity and keep dry during construction activity (approximate volume of 21,300m^3)	sum	-	5067.83	5 067.83
		Pond 13				
C3.327		(g) Dewater, prepare for construction activity and keep dry during construction activity (approximate volume of 20,300m^3)	sum	-	4841.25	4 841.25
		POND NO. 1, 2, 8, 9, 10, 11, 12 & 13				
						25 957 269.99

						25 957 269.99
	SANS 1200 C	**CLEAR SITE**				
		CLEAR SITE				
	8.2.12	Clear and grub area over wet ground conditions for the following construction activity, and dispose of all material off site at a spoil site established by the Contractor				
C3.328		.1 Pond 1	ha	0.7	5 158.50	3 610.95
C3.329		.2 Pond 2	ha	2.5	515 850.12	1 289 625.30
C3.330		.3 Pond 8	ha	0.5	51 585.01	25 792.51
C3.331		.4 Pond 9	ha	0.2	51 585.01	10 317.00
C3.332		.5 Pond 10	ha	1.00	51 585.01	51 585.01
C3.333		.6 Pond 11	ha	0.5	51 585.01	25 792.51
C3.334		.7 Pond 12	ha	2.2	5 158.50	11 348.70
C3.335		.8 Pond 13	ha	2.0	5 158.50	10 317.00
	SANS 1200 D	**SLUDGE REMOVAL**				
		Sludge removal, transport and disposal of sludge at a suitable site determined by the Contractor in terms of the Project Specification				
		PONDS NO.6 & 7				
		Pond 6 & 7				
C3.336	8.3.15	(a) Desludge, condition and transport off site (approximate sludge volume of 10,000m^3)	m^3	10 000	1 240.64	12 406 400.00
		PONDS NO.8, 9, 10, 11, 12 & 13				
		Sludge removal, transport and disposal of sludge at a suitable site determined by the Contractor in terms of the Project Specification				
		Pond 8				
C3.337	8.3.15	(b) Desludge, condition and transport off site (approximate sludge volume of 5,000m^3)	m^3	5000	1 240.64	6 203 200.00
		Pond 9				
					Carried Forward	45 995 258.96

					Brought Forward	45 995 258.96
C3.338	8.3.15	(c) Desludge, condition and transport off site (approximate sludge volume of 1,900m^3)	m^3	1 900	1 240.64	2 357 216.00
		Pond 10				
C3.339	8.3.15	(d) Desludge, condition and transport off site (approximate sludge volume of 10,000m^3)	m^3	10 000	1 240.64	12 406 400.00
		Pond 11				
C3.340	8.3.15	(e) Desludge, condition and transport off site (approximate sludge volume of 4,300m^3)	m^3	4 300	1 240.64	5 334 752.00
		Pond 12				
C3.341	8.3.15	(f) Desludge, condition and transport off site (approximate sludge volume of 21,300m^3)	m^3	21 300	1 293.92	27 560 496.00
		Pond 13				
C3.342	8.3.15	(g) Desludge, condition and transport off site (approximate sludge volume of 20,300m^3)	m^3	20 300	1 291.46	26 216 638.00
		BILL NO. C3 EARTHWORKS				
		Carried forward to Summary of Bills			**Total**	119 870 760.96

[redacted]

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C/A2 - Civil works				
		BILL NO. C4				
		DEWATERING BUILDING - WLA				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
		RESTRICTED EXCAVATIONS				
		Shoring: Shoring of excavations will not be measured, and prices for this operation shall be included in the excavation rates. The Contractor must study the Geotechnical Report and make his own allowance in this regard. Shoring will only be measured if the Engineer requires this to be done to protect an existing structure or service. Refer to the Project Specification in this regard.				
		Dewatering: Dewatering of earthworks will not be measured seperately and shall be included in SANS 1200A reference 8.3.2.2.(h) in the Preliminary and General bill				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C4.1		.1 Wall footings	m³	181	365.86	66 220.66
C4.2		.2 Column bases	m³	231	365.86	84 513.66
C4.3		.3 Equipment pits	m³	355	365.86	129 880.30
C4.4		.4 Manholes	m³	24	365.86	8 780.64
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C4.5		.2 Hard rock excavation	m³	11	803.79	8 841.69
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		RESTRICTED BACKFILLING				
		MATERIAL FROM SITE				
	8.3.9.a	Backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
C4.6		.1 Alongside walls in foundations	m³	60	-	Included
C4.7		.2 Under floors	m³	580	-	Included
C4.8		3. Behind retaining walls	m³	270	-	Included
					Carried Forward	298 236.95

					Brought Forward	298 236.95
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(a) .2 Plane vertical				
C4.9		.1 Sides of floor slabs	m²	53	364.71	19 329.63
C4.10		.2 Sides of column bases	m²	220	364.71	80 236.20
C4.11		.3 Sides of wall footings	m²	103	364.71	37 565.13
C4.12		.4 Sides of pit footings	m²	93	364.71	33 918.03
C4.13		.5 Walls	m²	210	364.71	76 589.10
C4.14		.6 Square, rectangular or L-shaped columns	m²	103	364.71	37 565.13
	8.2.5	Rough formwork to narrow widths				
C4.15		(a) Edges, risers, etc not exceeding 300mm wide	m	95	109.41	10 393.95
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(b) .1 Plane horizontal				
C4.16		.1 Slabs	m²	429	582.78	250 012.62
C4.17		.2 Beams	m²	463	869.17	402 425.71
C4.18		.3 Landings	m²	1	682.72	682.72
	8.2.2	(b) .2 Plane vertical				
C4.19		.1 Sides of floor slabs	m²	11	364.71	4 011.81
C4.20		.2 Retaining walls	m²	340	364.71	124 001.40
C4.21		.3 Bund walls	m²	50	364.71	18 235.50
C4.22		.4 Pit walls	m²	538	364.71	196 213.98
C4.23		.5 Manhole walls	m²	63	364.71	22 976.73
C4.24		.6 Square, rectangular or L-shaped columns	m²	1240	364.71	452 240.40
C4.25		.7 Pipe supports	m²	12	364.71	4 376.52
C4.26		.8 Beams	m²	875	364.71	319 121.25
C4.27		.9 Machine plinths	m²	35	364.71	12 764.85
C4.28		.10 Crane beam support sides	m²	16	364.71	5 835.36
	8.2.2	(b) .3 Plane sloping				
C4.29		.1 Soffit of wall beam	m²	53	1 189.41	63 038.73
					Carried Forward	2 469 771.70

					Brought Forward	2 469 771.70
C4.30		.2 Stairs	m²	1	1 189.41	1 189.41
C4.31		.3 Crane beam support sloping soffit	m²	8	1 189.41	9 515.28
	8.2.5	Normal formwork to narrow widths				
C4.32		(a) Edges, risers, etc not exceeding 300mm wide	m	420	109.41	45 952.20
C4.33		(c) Raking side of stairs maximum 400mm wide	m	2	273.98	547.96
C4.34		(d) Set of V-reedings 100mmwide in top of concrete steps	m	15	91.18	1 367.70
	8.2.6	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C4.35		(a) Chamfer size 50 x 50mm	m	105	108.65	11 408.25
C4.36		(b) Groove size 70mm wide x 50mm deep	m	53	98.47	5 218.91
C4.37		(c) Rebate size 100mm x 100mm	m	21	136.52	2 866.92
C4.38		(d) Boxing out horizontal nib 170mm high and 120mm projection to beams	m	420	138.68	58 245.60
C4.39		(e) Boxing out horizontal nib 170mm high and 280mm projection to beams	m	210	273.05	57 340.50
	SANS 1200 G	**HOLES AND VOIDS**				
	PSG	**BOXING IN FOR HOLES AND VOIDS**				
	8.2.6	(a) Small, square, up to 0.35m diameter with depth				
C4.40		.1 Over 0m and up to 0,5m	no	32	352.49	11 279.68
C4.41		.2 Over 0,5m and up to 1,0m	no	5	432.55	2 162.75
	8.2.6	(b) Small, other shapes, up to 0.1m² in area with depth				
C4.42		.1 Over 0m and up to 0,5m	no	21	565.99	11 885.79
C4.43		.2 Over 0,5m and up to 1,0m	no	8	672.74	5 381.92
	8.2.6	(c) Large, circular, over 0.35m and up to 0.7m diameter with depth				
C4.44		.1 Over 0m and up to 0,5m	no	5	565.99	2 829.95
	8.2.6	(d) Large, other shapes, over 0.1m² up to 0.5m² in area with depth				
C4.45		.1 Over 0m and up to 0,5m	no	5	672.74	3 363.70
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1	Steel bars				
					Carried Forward	2 700 328.22

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					Brought Forward	2 700 328.22
		(a) .1 Mild steel				
C4.46		.1 All sizes	ton	11.0	18 976.98	208 746.78
		(a) .2 High tensile steel				
C4.47		.1 All sizes	ton	210.0	18 976.98	3 985 165.80
		MESH REINFORCEMENT				
	8.3.2	(c) High tensile welded mesh				
C4.48		.2 Ref no.395	m²	2300	107.37	246 951.00
	SANS 1200 G	**STRENGTH CONCRETE**				
		STRENGTH CONCRETE				
	8.4.3	(b) .3 Strength concrete 20Mpa/19mm				
C4.49		.1 Floor slabs	m³	12	1 802.35	21 628.20
C4.50		.2 Wall footings	m³	12	1 802.35	21 628.20
C4.51		.3 Manhole bases	m³	5	1 802.35	9 011.75
C4.52		.4 Manhole walls	m³	6	1 802.35	10 814.10
C4.53		.5 Filling to brick cavity walls in foundations	m³	8	1 802.35	14 418.80
C4.54		.6 Pipe supports	m³	3	1 802.35	5 407.05
C4.55		.7 Steps	m³	1	1 802.35	1 802.35
C4.56		.8 Benching to machine pits to falls including steel floated surface finish	m³	134	1 802.35	241 514.90
	8.4.3	(b) .4 Strength concrete 35Mpa/19mm				
C4.57		.2 Floor slabs	m³	347	1 978.65	686 591.55
C4.58		.3 Wall footings	m³	55	1 978.65	108 825.75
C4.59		.4 Column bases	m³	127	1 978.65	251 288.55
C4.60		.5 Pit bases	m³	107	1 978.65	211 715.55
C4.61		.6 Retaining walls	m³	60	1 978.65	118 719.00
C4.62		.7 Pit walls	m³	87	1 978.65	172 142.55
C4.63		.8 Bund walls	m³	38	1 978.65	75 188.70
C4.64		.9 Columns	m³	169	1 978.65	334 391.85
C4.65		.10 Machine plinths	m³	46	1 978.65	91 017.90
C4.66		.11 Ramps	m³	4	1 978.65	7 914.60
					Carried Forward	9 525 213.15

					Brought Forward	9 525 213.15
C4.67		.12 Beams	m³	171	1 978.65	338 349.15
C4.68		.13 Crane beam supports	m³	4	1 978.65	7 914.60
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	(d) Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C4.69		.1 50mm Thick	m³	41	1 747.25	71 637.25
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(c) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C4.70		.1 Roof slabs	m³	116	2 199.02	255 086.32
C4.71		.2 Beams	m³	20	2 199.02	43 980.40
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C4.72		.1 Floor slabs	m²	105	13.92	1 461.60
C4.73		.2 Top of walls, beams, etc	m²	53	13.92	737.76
	8.4.4	(b) Steel floated finish				
C4.74		.1 Floor slabs	m²	210	19.44	4 082.40
C4.75		.2 Top of walls, beams, etc	m²	714	19.44	13 880.16
	8.4.4	(c) Power floated finish				
C4.76		.1 Floor slabs	m²	2300	38.87	89 401.00
	8.2.6	(d) V-reedings				
C4.77		.1 Set of V-reedings in top of concrete stairs	m	11	19.44	213.84
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C4.78		.1 Expansion joint in floors, columns, beams, etc	m²	4	118.25	473.00
C4.79		.4 Narrow widths not exceeding 300mm wide	m	200	35.48	7 096.00
					Carried Forward	10 359 526.63

					Brought Forward	10 359 526.63
	8.5	(b) Polyurethane joint sealer				
C4.80		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	250	153.31	38 327.50
	8.5	(c) Saw cut joints				
C4.81		.1 4 x 40mm Deep saw cut joint in floor slabs	m	200	136.11	27 222.00
		SUMPS AND MANHOLES				
		SUMPS Dwg 3089.00.00.WLA.14.D001				
C4.82		(a) Concrete drainage sump in bottom of equipment pit size 500 x 500 x 500mm deep complete	no	4	7 457.28	29 829.12
		SLUDGE DRAINAGE PIPES				
		SLUDGE DRAINAGE PIPES Supply, lay, joint, bed (flexible pipe bedding) and test uPVC spigot and socket water pipes with moulded rubber rings to SABS 966 (a) Class 9 pipes including excavation, bedding, bends, tees, etc installed below concrete floor slabs complete				
C4.83		.1 160mm Diameter	m	100	346.93	34 693.00
C4.84		.2 315mm Diameter	m	100	1 128.17	112 817.00
	SANS 1200 LE	**PORTAL CULVERTS**				
		CLASS "S" PORTAL CULVERTS WITHOUT PRECAST CONCRETE FLOOR SLABS Supply and lay portal and rectangular culverts including all cutting to ends of culverts not exceeding 20 degrees				
	8.2.2	(b) .2 Class "S" culverts				
C4.85		.1 750 x 450mm	m	6	3 892.04	23 352.24
		BILL NO. C4 **DEWATERING BUILDING - WLA**				
		Carried forward to Summary of Bills			**Total**	10 625 767.49

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Primary sludge holding tanks

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C/A2 - Civil works				
		BILL NO. C5 **PRIMARY SLUDGE HOLDING TANKS - WKA**				
		CIVIL WORKS				
		EARTHWORKS				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C5.1		.1 Centre column base	m³	53	365.86	19 390.58
C5.2		.2 Concrete pipe encasement	m³	53	365.86	19 390.58
C5.3		.3 Sloping floor of settling tanks	m³	120	365.86	43 903.20
C5.4		.4 Wall footings	m³	50	365.86	18 293.00
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C5.5		.2 Hard rock excavation	m³	53	803.79	42 600.87
		RESTRICTED BACKFILLING				
		COMMERCIAL MATERIAL				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C5.6		.1 Alongside walls in foundations	m³	55	248.89	13 688.95
C5.7		.2 Behind retaining walls	m³	265	248.89	65 955.85
C5.8		.3 Under floors	m³	60	248.89	14 933.40
	SANS 1200 D	**RESTRICTED BACKFILLING**				
	PSD	**MATERIAL FROM SITE**				
	8.3.9.a	Backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
C5.9		.1 Alongside walls in foundations	m³	50	-	Included
C5.10		.2 Behind retaining walls	m³	260	-	Included
C5.11		.3 Under floors	m³	75	-	Included
	SANS 1200 G	**ROUGH FORMWORK**				
					Carried Forward	238 156.43

					Brought Forward	238 156.43
		ROUGH FORMWORK				
	8.2.1	(b) Plane vertical				
C5.12		.1 Sides of column bases	m²	17	364.71	6 200.07
C5.13		.2 Sides of sump walls	m²	21	364.71	7 658.91
	8.2.1	(e) Plane circular				
C5.14		.1 Wall footings approx 9m radius	m²	49	364.71	17 870.79
	SANS 1200 G	**SMOOTH FORMWORK**				
	PSG	**SMOOTH FORMWORK**				
	8.2.2	(a) Plane horizontal				
C5.15		.2 Slabs	m²	571	650.34	371 344.14
C5.16		.3 Overflow soffit	m²	3	783.77	2 351.31
	8.2.2	(b) Plane vertical				
C5.17		.4 Overflow walls	m²	16	364.71	5 835.36
C5.18		.7 Columns	m²	71	364.71	25 894.41
C5.19		.9 Column head as per drawing complete	no	8	684.95	5 479.60
	8.2.2	(d) Plane battered				
C5.20		.1 Floor sump walls	m²	8	770.95	6 167.60
	8.2.2	(e) Plane circular				
C5.21		.1 Walls circular on plan to approx 9m radius	m²	1596	364.71	582 077.16
	8.2.5	Smooth formwork to narrow widths				
C5.22		(a) Edges, risers, etc not exceeding 300mm wide	m	100	109.41	10 941.00
C5.23		(b) Circular edges, risers, etc not exceeding 300mm wide	m	373	152.11	56 737.03
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
C5.24		(a) Chamfer size 150x150mm	m	20	295.06	5 901.20
C5.25		(b) Groove size 70mm wide x 50mm deep	m	20	160.80	3 216.00
C5.26		(c) Rebate size 100mm x 100mm	m	20	214.44	4 288.80
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0.35m diameter with depth				
					Carried Forward	1 350 119.81

					Brought Forward	1 350 119.81
C5.27		.1 over 0m and up to 0,5m	no	14	352.49	4 934.86
C5.28		.2 over 0,5m and up to 1,0m	no	2	432.55	865.10
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C5.29		.1 over 0m and up to 0,5m	no	38	565.99	21 507.62
	8.2.6	(c) Large, circular, over 0,35m and up to 1,0m diameter with depth				
C5.30		.1 over 0m and up to 0,5m	no	2	672.74	1 345.48
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C5.31		.1 Smooth formwork	m²	20	651.99	13 039.80
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C5.32		.1 Grouting around pipes and fittings	m³	2	21 078.60	42 157.20
	SANS 1200 G	**HDPE LININGS TO STRUCTURES**				
		HDPE LININGS				
		The following HDPE linings is supplied by AKS Lining Systems (Pty) Ltd or other approved similar product.				
		2.5mm Thick HDPE (colour as specified) lining system fixed to formwork face with approved method to enable the lining clips at the back of the sheeting to be cast into the concrete surface. The exposed lining surface is to be cleaned and welded at all joints with an approved method to ensure a watertight surface, as per manufacturers specification, complete with all cutting and waste, cutting around pipes, etc and sealing around pipes, covers, etc with approved sealant (only net exposed surfaces will be paid for)				
	8.13	(a) Plane horizontal				
C5.33		.1 Slabs	m²	520	462.30	240 396.00
	8.13	(b) Plane vertical				
C5.34		.1 Walls circular on plan	m²	750	462.30	346 725.00
					Carried Forward	2 021 090.87

					Brought Forward	2 021 090.87
	8.13	(c) Narrow widths not exceeding 300mm wide				
C5.35		.1 Narrow widths	m	240	284.53	68 287.20
		REINFORCEMENT				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C5.36		.1 All sizes	ton	2	18 976.98	37 953.96
	8.3.1	(b) High tensile steel				
C5.37		.1 All sizes	ton	84	18 976.98	1 594 066.32
	8.3.2	High tensile welded mesh				
C5.38		(b) Ref no.245	m²	80	71.15	5 692.00
		SCREED				
		SCREED				
	8.1.0	(c) 1:3 Cement riversand screed mix				
C5.39		.1 10mm Thick screed with steel float finish	m²	571	20.86	11 911.06
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C5.40		(a) Blinding layer 50mm thick Strenght concrete 20Mpa/19mm	m³	30	1 747.25	52 417.50
C5.41		(b) Encasement of pipe below floors	m²	16	1 747.25	27 956.00
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C5.42		.1 Floor slabs	m³	91	2 199.02	200 110.82
C5.43		.2 Wall footings	m³	64	2 199.02	140 737.28
C5.44		.3 Floor sump	m³	14	2 199.02	30 786.28
C5.45		.4 Walls	m³	239	2 199.02	525 565.78
C5.46		.5 Column bases	m³	5	2 199.02	10 995.10
					Carried Forward	4 727 570.17

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					Brought Forward	4 727 570.17
C5.47		.6 Columns	m³	6	2 199.02	13 194.12
C5.48		.7 Slabs	m³	183	2 199.02	402 420.66
C5.49		.8 Overflow floor and walls	m³	2	2 199.02	4 398.04
C5.50		.9 Apron slab	m³	7	2 199.02	15 393.14
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C5.51		.1 Benching to floors to falls including steel floated surface finish	m³	12	2 055.78	24 669.36
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C5.52		.1 Floor slabs	m²	160	13.92	2 227.20
C5.53		.2 Top of walls, beams, etc	m²	21	13.92	292.32
	8.4.4	(b) Steel floated finish				
C5.54		.1 Floor and roof slabs	m²	1155	19.44	22 453.20
C5.55		.2 Top of walls, beams, etc	m²	38	19.44	738.72
	8.4.4	(c) Power floated finish				
C5.56		.1 Floor slabs	m²	210	38.87	8 162.70
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C5.57		.4 Narrow widths not exceeding 300mm wide	m	50	35.48	1 774.00
	8.5	(b) Polyurethane joint sealer				
C5.58		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	50	153.31	7 665.50
	8.5	(c) Saw cut joints				
C5.59		.1 4 x 40mm Deep saw cut joint in floor slabs	m	50	136.11	6 805.50
		SUMPS				
					Carried Forward	5 237 764.63

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					Brought Forward	5 237 764.63
		Sumps measured in number including all concrete, formwork, reinforcement, etc				
C5.60		.1 Floor sump internal size 1000 x 1000 x 1000mm high with 300mm base and sides complete	no	1	8 509.70	8 509.70
		MEMBRANES, ETC				
		MEMBRANES, BANDAGES, ETC				
		Slip sheets				
		Two layers 250 mic USB green sheeting				
C5.65		(a) Laid on no-fines concrete below floor slabs	m^2	578	20.15	11 646.70
		SUNDRIES				
C5.62		.1 Two layers malthoid to top of walls below slabs as slip sheet	m^2	37	20.15	745.55
C5.63		.2 25mm Clean stone covering to concrete roofs 100mm thick	m^3	58	2 365.54	137 201.32
C5.64		.3 50mm Dia galvanised mild steel weep pipe 300mm long cast in concrete	no	38	8 888.59	337 766.42
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C5.65	8.12	Testing entire structure for water tightness	no	2	52331.43	104 662.86
		BILL NO. C5 **PRIMARY SLUDGE HOLDING TANKS - WKA**				
		Carried forward to Summary of Bills			**Total**	5 838 297.18

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C/A2 - Civil works				
		BILL NO. C6 **WAS SLUDGE HOLDING TANKS - WLB**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C6.1		.1 Centre column base	m³	21	365.86	7 683.06
C6.2		.2 Concrete pipe encasement	m³	25	365.86	9 146.50
C6.3		.3 Sloping floor of settling tanks	m³	150	365.86	54 879.00
C6.4		.4 Wall footings	m³	53	365.86	19 390.58
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C6.5		.2 Hard rock excavation	m³	5	803.79	4 018.95
		RESTRICTED BACKFILLING				
		COMMERCIAL MATERIAL				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C6.6		.1 Alongside walls in foundations	m³	60	248.89	14 933.40
C6.7		.2 Behind retaining walls	m³	270	248.89	67 200.30
C6.8		.3 Under floors	m³	20	248.89	4 977.80
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
	8.3.9.a	Backfill or for fill material against structures and compacted to 98% mod AASHTO density				
C6.9		.1 Alongside walls in foundations	m³	60	-	Included
C6.10		.2 Under floors	m³	20	-	Included
C6.11		.3 Behind retaining walls	m³	270	-	Included
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
					Carried Forward	182 229.59

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					Brought Forward	182 229.59
	8.2.1	(b) Plane vertical				
C6.12		.1 Sides of wall footings	m²	110	364.71	40 118.10
C6.13		.2 Sides of floor sump	m²	21	364.71	7 658.91
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C6.14		.1 Walkway slabs	m²	100	636.15	63 615.00
C6.15		.2 Overflow soffit	m²	2	636.15	1 272.30
C6.16		.3 Landings	m²	1	636.15	636.15
	8.2.2	(b) Plane vertical				
C6.17		.3 Walls	m²	980	364.71	357 415.80
C6.18		.4 Overflow walls	m²	11	364.71	4 011.81
	8.2.2	(c) Plane sloping				
C6.19		.1 Soffit of stairs	m²	8	1 041.79	8 334.32
	8.2.2	(d) Plane battered				
C6.20		.1 Floor sump walls	m²	11	770.95	8 480.45
	8.2.5	Smooth formwork to narrow widths				
C6.21		(a) Edges, risers, etc not exceeding 300mm wide	m	200	109.41	21 882.00
C6.22		(b) Circular edges, risers, etc not exceeding 300mm wide	m	17	109.41	1 859.97
C6.23		(c) Raking side of stairs maximum 400mm wide	m	8	273.98	2 191.84
C6.24		(d) Set of V-reedings 100mmwide in top of concrete steps	m	15	91.18	1 367.70
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
C6.25		(a) Chamfer size 150x150mm	m	10	295.06	2 950.60
C6.26		(b) Groove size 70mm wide x 50mm deep	m	10	160.80	1 608.00
C6.27		(c) Rebate size 100mm x 100mm	m	10	214.44	2 144.40
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C6.28		.1 over 0m and up to 0,5m	no	6	352.49	2 114.94
					Carried Forward	709 891.88

					Brought Forward	709 891.88
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C6.29		.1 over 0m and up to 0,5m	no	4	432.55	1 730.20
	8.2.6	(c) Large, circular, over 0,35m and up to 0,7m diameter with depth				
C6.30		.1 over 0m and up to 0,5m	no	4	565.99	2 263.96
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
	PSG	**SMOOTH FORMWORK**				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C6.31		.1 Smooth formwork	m²	20	651.99	13 039.80
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C6.32		.1 Grouting around pipes and fittings	m³	1	14 845.75	14 845.75
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C6.33		.1 All sizes	ton	2	18 976.98	37 953.96
	8.3.1	(b) High tensile steel				
C6.34		.1 All sizes	ton	74	18 976.98	1 404 296.52
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C6.35		(a) Blinding layer 50mm thick	m³	42	1 857.71	78 023.82
	8.4.3	(a) Strength concrete 20Mpa/19mm				
C6.36		.1 Encasement of pipe below floors	m³	16	1 802.35	28 837.60
	SANS	**WATERPROOF CONCRETE**				
					Carried Forward	2 290 883.49

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					Brought Forward	2 290 883.49
	1200 G 8.4.3	(d) Waterproof strength concrete 20Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C6.37		.1 Floor slabs	m³	123	2 055.78	252 860.94
C6.38		.2 Wall footings	m³	160	2 055.78	328 924.80
C6.39		.3 Floor sump	m³	15	2 055.78	30 836.70
C6.40		.4 Walls	m³	196	2 055.78	402 932.88
C6.41		.5 Walkway slabs	m³	20	2 055.78	41 115.60
C6.42		.6 Stairs and landings	m³	3	2 055.78	6 167.34
C6.43		.7 Overflow chamber	m³	1	2 055.78	2 055.78
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C6.44		.1 Benching to floors to falls including steel floated surface finish	m³	10	2 055.78	20 557.80
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C6.45		.1 Floor slabs	m²	200	13.92	2 784.00
C6.46		.2 Top of walls, beams, etc	m²	53	13.92	737.76
	8.4.4	(b) Steel floated finish				
C6.47		.1 Floor slabs	m²	726	19.44	14 113.44
C6.48		.2 Top of walls, beams, etc	m²	27	19.44	524.88
	8.4.4	(c) Power floated finish				
C6.49		.1 Floor slabs	m²	105	38.87	4 081.35
	8.4.4	(d) V-reedings				
C6.50		.1 Set of V-reedings in top of steps	m	17	19.44	330.48
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
					Carried Forward	3 398 907.24

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					Brought Forward	3 398 907.24
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C6.51		.4 Narrow widths not exceeding 300mm wide	m	20	35.48	709.60
	8.5	(b) Polyurethane joint sealer				
C6.52		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	20	153.31	3 066.20
	8.5	(c) Saw cut joints				
C6.53		.1 4 x 40mm Deep saw cut joint in floor slabs	m	50	136.11	6 805.50
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C6.54	8.12	Testing entire structure for water tightness	no	2	57706.43	115 412.86
		BILL NO. C6 **WAS SLUDGE HOLDING TANKS - WLB**				
		Carried forward to Summary of Bills			**Total**	3 524 901.40

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Sludge cake silos (4 no)

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C/A2 - Civil works				
		BILL NO. C7 **SLUDGE CAKE SILOS (4 no) - WLC - WLD**				
		CIVIL WORKS				
		EARTHWORKS				
	SANS 1200 D	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C7.1		.1 Column bases	m³	269		Included
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C7.2		.2 Hard rock excavation	m³	5	803.79	4 018.95
		RESTRICTED BACKFILLING				
		COMMERCIAL MATERIAL				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C7.3		.1 Alongside walls in foundations	m³	55	105.35	5 794.25
C7.4		.2 Behind retaining walls	m³	220	105.35	23 177.00
C7.5		.3 Under floors	m³	55	105.35	5 794.25
	SANS 1200 D	**RESTRICTED BACKFILLING**				
	PSD	**MATERIAL FROM SITE**				
	8.3.9.a	Backfill or for fill material against structures and compacted to 98% mod AASHTO density				
C7.6		.1 Alongside walls in foundations	m³	55	-	Included
C7.7		.2 Behin retaining walls	m³	220	-	Included
C7.8		.3 Under floors	m³	55	-	Included
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C7.9		.1 Sides of floor slabs	m²	108	364.71	39 388.68
					Carried Forward	78 173.13

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					Brought Forward	78 173.13
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C7.10		.1 Slabs	m²	260	611.22	158 917.20
C7.11		.2 Beams	m²	47	771.35	36 253.45
	8.2.2	(b) Plane vertical				
C7.12		.3 Walls	m²	1150	364.71	419 416.50
C7.13		.6 Square or rectangular columns	m²	243	364.71	88 624.53
C7.14		.8 Beams	m²	143	364.71	52 153.53
	8.2.5	Smooth formwork to narrow widths				
C7.15		(a) Edges, risers, etc not exceeding 300mm wide	m	53	109.41	5 798.73
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
C7.16		(a) Chamfer size 50x50mm	m	20	321.00	6 420.00
C7.17		(b) Groove size 70mm wide x 50mm deep	m	20	176.81	3 536.20
C7.18		(c) Rebate size 100mm x 100mm	m	20	214.44	4 288.80
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0.35m diameter with depth				
C7.19		.1 over 0m and up to 0,5m	no	4	352.49	1 409.96
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C7.20		.1 over 0m and up to 0,5m	no	8	432.55	3 460.40
	8.2.6	(c) Large, other shapes, over 0,1m² up to 0,5m² in area with depth				
C7.21		.2 over 0,5m and up to 1,0m	no	20	565.99	11 319.80
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C7.22		.1 Smooth formwork	m²	10	651.99	6 519.90
					Carried Forward	876 292.13

					Brought Forward	876 292.13
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C7.23		.1 Grouting around pipes and fittings	m³	1	21 078.60	21 078.60
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C7.24		.1 All sizes	ton	2	18 976.98	37 953.96
	8.3.1	(b) High tensile steel				
C7.25		.1 All sizes	ton	84	18 976.98	1 594 066.32
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C7.26		(a) Blinding layer 50mm thick	m³	15	1 857.71	27 865.65
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C7.27		.1 Column bases	m³	108	2 199.02	237 494.16
C7.28		.2 Slabs	m³	142	2 199.02	312 260.84
C7.29		.3 Beams	m³	37	2 199.02	81 363.74
C7.30		.4 Walls	m³	273	2 199.02	600 332.46
C7.31		.5 Columns	m³	25	2 199.02	54 975.50
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C7.32		.1 Benching to floors to falls including steel floated surface finish	m³	70	2 055.78	143 904.60
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
					Carried Forward	3 987 587.96

					Brought Forward	3 987 587.96
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C7.33		.1 Floor slabs	m²	53	13.92	737.76
C7.34		.2 Top of walls, beams, etc	m²	11	13.92	153.12
	8.4.4	(b) Steel floated finish				
C7.35		.1 Floor slabs	m²	260	19.44	5 054.40
C7.36		.2 Top of walls, beams, etc	m²	53	19.44	1 030.32
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C7.37		.4 Narrow widths not exceeding 300mm wide	m	11	35.48	390.28
	8.5	(b) Polyurethane joint sealer				
C7.38		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	11	153.31	1 686.41
	8.5	(c) Saw cut joints				
C7.39		.1 4 x 40mm Deep saw cut joint in floor slabs	m	50	136.11	6 805.50
	SANS 1200 G	**TESTING**				
		TESTING FOR WATER TIGHTNESS				
C7.40	8.12	Testing entire structure for water tightness	no	4	19857.57	79 430.28
		BILL NO. C7 **SLUDGE CAKE SILOS (4 no) - WLC - WLD**				
		Carried forward to Summary of Bills			**Total**	4 082 876.03

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C/A2 - Civil works				
		BILL NO. C8 **SLUDGE FEED PUMP INSTALLATION - WLE**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C8.1		.1 Ground beams	m³	5	612.26	3 061.30
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C8.2		.2 Hard rock excavation	m³	1	803.79	803.79
	SANS 1200 D	**RESTRICTED BACKFILLING**				
	PSG	**COMMERCIAL MATERIAL**				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C8.3		.1 Alongside walls in foundations	m³	20	2.49	49.80
	SANS 1200 G	**ROUGH FORMWORK**				
		ROUGH FORMWORK				
	8.2.1	(b) Plane vertical				
C8.4		.1 Sides of ground beams	m²	8	364.71	2 917.68
	8.2.5	Rough formwork to narrow widths				
C8.5		(a) Edges, risers, etc not exceeding 300mm wide	m	11	109.41	1 203.51
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(b) Plane vertical				
C8.6		.3 Machine bases	m²	11	364.71	4 011.81
	8.2.5	Smooth formwork to narrow widths				
C8.7		(a) Edges, risers, etc not exceeding 300mm wide	m	36	109.41	3 938.76
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
					Carried Forward	15 986.65

					Brought Forward	15 986.65
C8.8		(a) Chamfer size 150x150mm	m	5	295.06	1 475.30
C8.9		(b) Groove size 70mm wide x 50mm deep	m	5	176.81	884.05
C8.10		(c) Rebate size 100mm x 100mm	m	5	214.44	1 072.20
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C8.11		.1 All sizes	ton	1.0	18 976.98	18 976.98
	8.3.1	(b) High tensile steel				
C8.12		.1 All sizes	ton	3.0	18 976.98	56 930.94
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
C8.13		(b) Ref no.395	m²	44	107.37	4 724.28
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C8.14		(a) Blinding layer 50mm thick	m³	3	1 857.71	5 573.13
	8.4.3	Strength concrete 35Mpa/19mm				
C8.15		(c) Floor slabs	m³	7	1 978.65	13 850.55
C8.16		(d) Machine bases	m³	2	1 978.65	3 957.30
C8.17		(e) Floor thickenings	m³	6	1 978.65	11 871.90
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C8.18		.1 Floor slabs	m²	44	13.92	612.48
C8.19		.2 Top of walls, beams, etc	m²	11	13.92	153.12
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between				
					Carried Forward	136 068.88

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					Brought Forward	136 068.88
		concrete surfaces				
C8.20		.4 Narrow widths not exceeding 300mm wide	m	10	35.48	354.80
	8.5	(b) Polyurethane joint sealer				
C8.21		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	10	153.31	1 533.10
	8.5	(c) Saw cut joints				
C8.22		.1 4 x 40mm Deep saw cut joint in floor slabs	m	15	136.11	2 041.65
		BILL NO. C8 **SLUDGE FEED PUMP INSTALLATION - WLE**				
		Carried forward to Summary of Bills			**Total**	139 998.43

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Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Primary WAS filtrate pump station

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C/A2 - Civil works				
		BILL NO. C9 **PRIMARY/WAS FILTRATE PUMP STATION - WLF**				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C9.1		.1 Chambers	m³	245	365.86	89 635.70
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C9.2		.2 Hard rock excavation	m³	11	803.79	8 841.69
	SANS 1200 D	**WORKING SPACE**				
		WORKING SPACE Extra excavation and backfilling beyond the measured face in all materials to provide working space around structures				
	8.3.5	(a) Excavate for working space (previously excavated face +- 500mm away from perimeter of the structure) for the placing and removal of external formwork to perimeter walls. Average depth of excavation 4m deep, including backfilling and compaction to 93% mod AASHTO density				
C9.3			m²	124	292.69	36 293.56
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		COMMERCIAL MATERIAL				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C9.4		.1 Alongside walls in foundations	m³	35	248.89	8 711.15
C9.5		.3 Under floors	m³	30	248.89	7 466.70
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
	8.3.9.a	Backfill or for fill with selected from site against structures and compacted to 98% mod AASHTO density				
C9.6		.1 Alongside walls in foundations	m³	30	-	-
					Carried Forward	150 948.80

					Brought Forward	150 948.80
C9.7		.3 Under floors	m³	30	-	-
	SANS 1200 G	**ROUGH FORMWORK**				
	PSG	**ROUGH FORMWORK**				
	8.2.1	(b) Plane vertical				
C9.8		.1 Sides of floor slabs	m²	9	364.71	3 282.39
C9.9		.3 Walls	m²	70	364.71	25 529.70
	8.2.5	Rough formwork to narrow widths				
C9.10		(a) Edges, risers, etc not exceeding 300mm wide	m	11	109.41	1 203.51
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(b) Plane vertical				
C9.11		.3 Walls	m²	170	364.71	62 000.70
	8.2.5	Smooth formwork to narrow widths				
C9.12		(a) Edges, risers, etc not exceeding 300mm wide	m	27	109.41	2 954.07
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25x25mm in size				
C9.13		(a) Chamfer size 150x150mm	m	10	295.06	2 950.60
C9.14		(b) Groove size 70mm wide x 50mm deep	m	10	160.80	1 608.00
C9.15		(c) Rebate size 100mm x 100mm	m	10	214.44	2 144.40
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C9.16		.1 over 0m and up to 0,5m	no	2	352.49	704.98
C9.17		.2 over 0,5m and up to 1,0m	no	2	432.55	865.10
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C9.18		.1 over 0m and up to 0,5m	no	2	565.99	1 131.98
	8.2.6	(c) Large, other shapes, over 0,1m² up to 0,5m² in area with depth				
C9.19		.2 over 0,5m and up to 1,0m	no	2	672.74	1 345.48
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
					Carried Forward	256 669.71

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					Brought Forward	256 669.71
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings complete including cleaning and repairing concrete surface to smooth finish after completion				
C9.20		.1 Smooth formwork	m²	2	651.99	1 303.98
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C9.21		.1 Grouting around pipes and fittings	m³	0.3	21 078.60	6 323.58
	SANS 1200 G	**REINFORCEMENT**				
		REINFORCEMENT				
		Steel bars				
	8.3.1	(a) Mild steel				
C9.22		.1 All sizes	ton	1.0	18 976.98	18 976.98
	8.3.1	(b) High tensile steel				
C9.23		.1 All sizes	ton	9.0	18 976.98	170 792.82
		MESH REINFORCEMENT				
	8.3.2	High tensile welded mesh				
C9.24		(b) Ref no.395	m²	34	107.37	3 650.58
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
	8.4.2	Strength concrete 15Mpa/19mm				
C9.25		(a) Blinding layer 50mm thick	m³	3	1 857.71	5 573.13
	8.4.3	Strength concrete 35Mpa/19mm				
C9.26		(c) Floor slabs	m³	7	1 978.65	13 850.55
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C9.27		.1 Floor slabs	m³	17	2 199.02	37 383.34
C9.28		.4 Walls	m³	35	2 199.02	76 965.70
					Carried Forward	591 490.37

					Brought Forward	591 490.37
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C9.29		.1 Benching to floors to falls including steel floated surface finish	m³	12	2 055.78	24 669.36
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C9.30		.1 Floor slabs	m²	34	13.92	473.28
C9.31		.2 Top of walls, beams, etc	m²	9	13.92	125.28
	8.4.4	(b) Steel floated finish				
C9.32		.1 Floor slabs	m²	11	19.44	213.84
C9.33		.2 Top of walls, beams, etc	m²	5	19.44	97.20
	SANS 1200 G	**EXPANSION JOINTS**				
	PSG	**EXPANSION JOINTS**				
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C9.34		.4 Narrow widths not exceeding 300mm wide	m	11	35.48	390.28
	8.5	(b) Polyurethane joint sealer				
C9.35		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	11	153.31	1 686.41
	8.5	(c) Saw cut joints				
C9.36		.1 4 x 40mm Deep saw cut joint in floor slabs	m	50	136.11	6 805.50
	SANS 1200 LC	**SLEEVES**				
		SLEEVE PIPES				
	8.2.5	(b) Supply, lay, bed, and prove uPVC class 9 ducts including providing draw wires, etc complete				
C9.37		.1 110mm Diameter placed in filling below floors	m	32	111.80	3 577.60
C9.38		.2 110mm Diameter plugs	no	10	99.71	997.10
C9.39		.3 110mm Diameter 90 degree bends	no	10	269.82	2 698.20
	SANS	**TESTING**				
					Carried Forward	633 224.42

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					Brought Forward	633 224.42
	1200 G	**TESTING FOR WATER TIGHTNESS**				
C9.40	8.12	Testing entire structure for water tightness	no	1	19857.57	19 857.57
		BILL NO. C9 **PRIMARY/WAS FILTRATE PUMP STATION - WLF**				
		Carried forward to Summary of Bills			**Total**	653 081.99

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C/A4 - Building works				
		BILL NO. C10				
		DEWATERING BUILDING - WLA				
		PROVISIONAL SUMS				
		.2 Partitions, etc				
C10.1		.1 Toilet partitions and shower doors	Prov sum		50 000.00	50 000.00
C10.2		.2 Overheads, charges and profit on above	%		10%	5 000.00
		BUILDING WORKS				
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
C10.3		.3 230mm Thick wall	m²	53	508.77	26 964.81
C10.4		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 20Mpa concrete complete	m²	160	613.01	98 081.60
C10.5		.7 Mass brickwork	m³	5	3 555.51	17 777.55
		SUPERSTRUCTURE				
	8.4.1b	Stock brickwork in 1:4 cement mortar				
C10.6		.1 115mm Thick wall	m²	89	250.95	22 334.55
C10.7		.2 115mm Thick wall in beamfilling	m²	50	263.32	13 166.00
C10.8		.3 230mm Thick wall	m²	200	508.77	101 754.00
C10.9		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	1650	508.01	838 216.50
C10.10		.5 410mm Cavity wall of 115mm wall and 240mm solid wall with 60mm cavity between including butterfly wall ties	m²	105	755.48	79 325.40
C10.11		.7 Mass brickwork	m³	5	3 555.51	17 777.55
	PU	**FACE BRICKWORK**				
		FACE BRICKWORK - EXTERNALLY				
	8.4.1c	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
					Carried Forward	1 270 397.96

					Brought Forward	1 270 397.96
C10.12		.1 Stretcher course bond	m²	1166	586.44	683 789.04
C10.13		.2 Ditto in foundations	m²	160	546.50	87 440.00
C10.14		.5 Brick on edge coping to 230mm walls	m²	158	543.75	85 912.50
		FACE BRICKWORK - INTERNALLY				
	8.4.1c	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa Agate Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage				
C10.15		.10 Stretcher course bond	m²	100	586.27	58 627.00
	8.4.1c	Extra over reference 8.a.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C10.16		.20 Stretcher course bond	m²	200	630.06	126 012.00
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C10.17		.2 150mm Wide brickforce	m	840	2.19	1 839.60
C10.18		.3 Rod reinforcing (all sizes)	kg	105	23.75	2 493.75
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C10.19		.1 75 x 110mm Lintol	m	63	70.12	4 417.56
		WALL TIES				
	8.4.1c	Hoop iron ties between concrete and brickwork				
C10.20		.1 2 x 30mm Galvanised hoop iron ties, 600mm long with one end shot plugged to concrete and other end built into brickwork	no	525	27.62	14 500.50
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C10.21		.1 Vertically	m	400	63.68	25 472.00
C10.22		2 Horizontally	m	400	23.53	9 412.00
	PU	**PRECAST CONCRETE COPINGS**				
		COPINGS				
						2 370 313.91

[redacted]

[redacted]

						2 370 313.91
	8.20	Precast concrete copings supplied and installed complete				
C10.23		.1 300 x 100mm Moulded coping fitted to top of 280mm cavity wall complete wit all mitres, end blocks, etc	m	50	440.40	22 020.00
	PU	**GLASS BLOCKS**				
		GLASS BLOCKS				
	8.20	Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
C10.24		.1 190 x 190 x 190mm Glass blocks in panels	m²	95	2 365.00	224 675.00
	PU	**DAMPPROOFING**				
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C10.25		.1 375 Micron under walls including cement mortar triangular fillet in cavity walls	m²	116	32.28	3 744.48
C10.26		.2 375 Micron under sills	m²	2	18.83	37.66
	8.4.4	Polyethelene sheeting				
C10.27		.1 250 Micron USB green under floors	m²	2300	12.73	29 279.00
	SANS 1200 GB	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.2.8	12mm Thick jointex placed vertically between brickwork surfaces				
C10.28		.1 Expansion joint in columns, beams, etc	m²	20	93.31	1 866.20
C10.29		.4 Narrow widths not exceeding 300mm wide	m	300	27.99	8 397.00
		JOINT SEALER				
	8.2.9	Polyurethane joint sealer				
C10.30		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with suitable polyurethane sealer	m	300	50.52	15 156.00
		TIMBER ROOFS				
		TIMBER ROOFS - LUMP SUM				
		SANS graded CCA treated SA Pine				
		Pre-fabricated roof construction erected complete, including all trusses, braces, purlins, battens, wall plates, etc				
		Dwg 3089.00.00.WLA.16.U004				
					Carried Forward	2 675 489.25

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					Brought Forward	2 675 489.25
C10.31		.1 Timber roof construction over offices on first floor complete with fascias,etc (area approximately 90m2)	sum	-	42086.25	42 086.25
	SANS 1200 HB	**CLADDING AND SHEETING**				
		Supply, deliver to site and fix cladding and sheeting including all necessary approved fasteners, closures, seals, etc and cutting and notching complete (colour Pebble Grey)				
		Dwg CODE WLA				
		ROOF SHEETING				
	8.2.2	0,58mm Klip-Lok 700 Chromadek Z200 galvanised and colour coated both sides roof sheeting fixed to				
C10.32		.1 Timber purlins	m²	90	335.60	30 204.00
C10.33		.2 Steel purlins	m²	2400	335.60	805 440.00
		ANCILLARIES				
	8.2.3	Supply, deliver to site and fix all ancillaries including all necessary approved fasteners, closures, seals, etc and cutting and notching complete				
		Ridging				
C10.34		.1 0,6mm Ridge capping 450mm girth 3 times bent along length	m	120	310.52	37 262.40
		Flashings				
C10.35		.2 0,6mm Stepped sidewall flashing 350mm girth 2 times bent along length	m	50	220.96	11 048.00
		Fibre cement				
	8.2.4	.3 Fascia and bardge boards				
C10.36		.1 10 x 200mm High fascia board fixed complete	m	200	83.85	16 770.00
	PU	**INSULATION**				
		INSULATION				
	8.10	Supply, deliver to site and fix Sisalation 420 roof insulation, including all galvanised wire supportwork, cutting and notching complete to				
C10.37		.7 Underside of roof sheeting	m²	2400	51.35	123 240.00
	PU	**RAINWATER DISPOSAL**				
		DOWNPIPES				
	8.16	Galvanised mild steel pipes and fittings installed complete				
					Carried Forward	3 741 539.90

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					Brought Forward	3 741 539.90
C10.38		.1 100mm Dia rainwater pipe fixed to colums and walls with approved holders complete	m	50	467.62	23 381.00
C10.39		.2 Ditto cast into concrete columns	m	50	413.88	20 694.00
C10.40		.3 100mm Dia 45 degree bend	no	10	306.38	3 063.80
C10.41		.4 100mm Dia 90 degree bend	no	10	344.00	3 440.00
C10.42		.5 100mm Dia fullbore outlet cast into concrete slab	no	4	430.00	1 720.00
C10.43		.6 75mm Dia GMS spout 300mm long, one end scew cut and cast through concrete wall or beam	no	4	537.50	2 150.00
		GUTTERS				
	8.17	Gutters supplied and fixed complete, including all mitres, stop ends, outlets, etc				
		2mm Powder coated aluminium (Pebble Grey)				
C10.44		.7 Size 400 x 300mm Eaves gutter	m	134	3 386.25	453 757.50
C10.45		8. Size 150 x 150 mm Eaves gutter	m	56	1 886.62	105 650.72
		DOWNPIPES				
	8.18	Rainwater pipes supplied and fixed complete, including offsets, shoes, etc				
		1.2mm Powder coated aluminium (Pebble Grey)				
C10.46		.8 Size 150 x 150mm	m	190	1 886.62	358 457.80
	PU	**SUSPENDED CEILINGS**				
		SUSPENDED CEILINGS Dwg 3089.92.00.WLA.16.F001				
	8.10	Vinyl coated plasterboard ceilings supplied and erected complete				
C10.47		.1 9mm Vinyl coated plasterboard suspended ceiling of 600 x 1200mm ceiling panels laid loose in Donn type suspension system consisting of 38 x 38mm aluminium T-section main and cross tees, suspended with 4mm galvanized wire hangers approximately 600mm below timber trusses, complete with 30x30mm aluminium angle section cornice at junction of ceiling and wall	m²	90	209.18	18 826.20
C10.48		.2 Form hole through ceiling for light fittings	no	20	18.54	370.80
C10.49		.4 50mm Insulation blanket laid over ceilings	m²	90	67.99	6 119.10
	PU	**DOORS**				
		SEMI SOLID CORE DOORS Dwg 3089.92.00.WLA.16.F001 Refer to door schedule				
					Carried Forward	4 739 170.82

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					Brought Forward	4 739 170.82
	8.8	Semi solid core doors with masonite veneer suitable for painting				
C10.50		.1 Door size 762 x 1882mm (D09, D10, D11)	no	3	1 566.28	4 698.84
C10.51		.2 Door size 813 x 2032mm (D08, D12, D16, D17, D18)	no	5	1 566.28	7 831.40
		FRAMED, LEDGED AND BRACED Dwg 3089.92.00.WLA.16.F001				
	8.9	Framed, ledged and braced Sapele doors with 6mm plywood closed back				
C10.52		.3 Double door size 1600 x 2032mm with rebated meeting styles (D06, D07)	no	2	9 008.50	18 017.00
	8.20	**IRONMONGERY TO SEMI SOLID DOORS ABOVE, COMPLETE** Dwg 3089.92.00.WLA.16.F001				
C10.53		.1 Door type D	no	3	2 944.73	8 834.19
C10.54		.2 Door type E & F	no	5	5 537.71	27 688.55
	8.21	**IRONMONGERY TO FRAMED, LEDGED AND BRACED DOORS ABOVE, COMPLETE** Dwg 3089.92.00.WLA.16.F001				
C10.55		.3 Door type G	no	2	5 537.71	11 075.42
	PU	**SKIRTINGS**				
		TIMBER SKIRTINGS				
	8.9	Wrot Sapele				
C10.56		.1 22 x 200mm Skirting nailed to walls	m	100	357.24	35 724.00
	PU	**FLOOR COVERINGS**				
		CARPETS TILES				
	8.20	Van Dyk Modulyss Pure Air 100 900 carpet tiles colour LRV 3L 21 supplied and fixed to screeded floors (screed measured elsewhere) all to manufacturers instructions				
C10.57		.1 To floors	m²	50	731.00	36 550.00
		ROOF OVER DEWATERING BUILDING				
		Dwg 3089.30.40.WLA.15.D001 & D002				
	SANS 1200 H	**SHOP DRAWINGS**				
	8.3.1	Preparation of shop detail drawings and submit for approval				
C10.58		.1 Structural steelwork	ton	65.0	1 075.00	69 875.00
					Carried Forward	4 959 465.22

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					Brought Forward	4 959 465.22
	SANS 1200 H	**SUPPLY AND FABRICATE**				
		LATTICE STEELWORK				
	8.3.1.2	Lattice trusses and girders including connections stiffeners, splice material, etc				
C10.59		.1 80 x 60 x 6mm Angle iron truss element	ton	17.0	36 550.00	621 350.00
C10.60		.2 60 x 60 x 6mm Angle iron truss element	ton	19.0	36 550.00	694 450.00
C10.61		.3 203 x 203 x 46 H-section truss element	ton	3.0	36 550.00	109 650.00
C10.62		.4 IPE140 truss element	ton	1.0	36 550.00	36 550.00
C10.63		.5 IPE160 truss element	ton	2.0	36 550.00	73 100.00
C10.64		.6 100 x 50 PFC channel truss element	ton	5.0	36 550.00	182 750.00
		BRACING, ETC				
	8.3.1.3	Hot rolled sections				
C10.65		.1 50 x 50 x 5mm Angle section roof bracing, sag bars, etc	ton	7.0	34 400.00	240 800.00
		CLADDING SUPPORT				
	8.3.1.4	Cold rolled sections				
C10.66		.1 125 x 75 x 2mm Lipped channel section purlins	ton	10.0	34 400.00	344 000.00
C10.67		.2 50 x 50 x 2,5mm CFA trim	ton	1.0	34 400.00	34 400.00
	8.3.1.5	FASTENERS				
C10.68		.1 Class 4.8 bolts with nuts and washers	ton	1	107 500.00	107 500.00
C10.69		.2 Class 8.8 bolts with nuts and washers	ton	1	107 500.00	107 500.00
	SANS 1200 H	**TRANSPORT TO SITE AND OFF LOADING**				
	8.3.2.1	Normal transport				
C10.70		.1 Structural steelwork	ton	65.0	1 075.00	69 875.00
	SANS 1200 H	**ERECTION OF STEELWORK ON SITE**				
	8.3.3	Structural steelwork				
C10.71		.1 Structural steelwork	ton	65.0	5 375.00	349 375.00
	8.3.4	Erection bolts				
C10.72		.1 Class 4.8 bolts with nuts and washers	ton	0.3	10 750.00	3 225.00
C10.73		.2 Class 8.8 bolts with nuts and washers	ton	0.3	10 750.00	3 225.00
	8.3.6	Holding down bolts				
					Carried Forward	7 937 215.22

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					Brought Forward	7 937 215.22
C10.74		.1 16mm Diameter chemical anchor installed complete	no	200	268.75	53 750.00
	SANS 1200 HC	**CORROSION PROTECTION**				
		CORROSION PROTECTION AT WORKSHOP				
	8.2.3	Hot dipped galvanising				
C10.75		.1 Structural steel	ton	65.0	11 825.00	768 625.00
		CORROSION PROTECTION ON SITE AFTER ERECTION				
	8.2.4	One coat universal undercoat to 25um DFT and one coat gloss enamel finish to 30 micron DFT				
C10.76		.1 General surfaces of structural steel	m²	1000	136.52	136 520.00
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		Dwg 3089.92.00.WLA.16.F001				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into brickwork, etc complete with all ironmongery such as locks, hinges, etc				
		3CR12 steel				
C10.77		.1 Single door and frame with door size 813 x 2032mm high including all locking devices hinges, etc complete (Door: D04, D05, D20, D21, D22, D23)	no	6	12 204.18	73 225.08
C10.78		.2 Single door and frame with door size 1100 x 2032mm high including all locking devices hinges, etc complete (Door: D03, D13, D15)	no	3	15 062.71	45 188.13
C10.79		.3 Double leaf door and frame with door size 1600 x 2032mm high including all locking devices hinges, etc complete (Door: D01)	no	1	16 506.02	16 506.02
	PU	**LOUVRES**				
		LOUVRES				
	8.20	Take delivery of louvre sub-frame supplied by the Mechanical Contractor and build into brick wall, complete with prefabriced lintols above and finishing off (Mechanical Contractor will install louvre)				
C10.80		.1 Louvre size approximately 1 to 2m2 in area	no	14	440.75	6 170.50
	PU	**ROLLER SHUTTER DOORS**				
		ALUMINIUM ROLLER SHUTTER DOORS				
					Carried Forward	9 037 199.95

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					Brought Forward	9 037 199.95
	8.21	Powder coated aluminium roller shutter door (colour RAL 7016 Graphite Grey) installed to manufacturers specifications complete with locking mechanism, etc Dwg 3089.92.00.WLA.16.F001				
C10.81		.1 Size 3500 x 3500mm high with crank handle operation complete (D02)	no	1	51 035.66	51 035.66
C10.82		.2 Size 3500 x 4000mm high with crank handle operation complete (D14)	no	1	53 077.49	53 077.49
	PU	**ALUMINIUM WINDOWS**				
		WINDOWS				
	8.8	Purpose made powder coated aluminium glazed windows supplied and installed complete with glazing, ironmongery, etc to manufacturers specification Prices to include for fixing damp proof sheeting (dampproof sheeting measured elsewhere) to window frame when fixing window to brickwork or concrete and sealing joint between window frame and plaster or brickwork finish with approved Polyurethane sealant all round to external faces Dwg 3089.92.00.WLA.16.F001				
C10.83		.1 Window size 500 x 654mm (W01 - W06)	no	6	645.00	3 870.00
C10.84		.2 Window size 1640 x 900mm (W07)	no	1	1 290.00	1 290.00
C10.85		.3 Window size 1640 x 1200mm (W11)	no	1	1 290.00	1 290.00
C10.86		.4 Window size 2600 x 1200mm (W08)	no	1	2 150.00	2 150.00
C10.87		.5 Window size 2400 x 1200mm (W09)	no	1	2 150.00	2 150.00
C10.88		.6 Window size 4800 x 1200mm (W10)	no	1	3 440.00	3 440.00
	PU	**ALUMINIUM FRAMES**				
		DOOR FRAMES				
	8.9	Purpose made powder coated aluminium (colour RAL 7016 Antracite Grey) door frames supplied and installed complete to manufacturers specification Dwg 3089.92.00.WLA.16.F001				
C10.89		.1 Door frame for door size 762 x 2032mm high (Door: D09, D10, D11)	no	3	1 290.00	3 870.00
C10.90		.2 Door frame for door size 813 x 2032mm high (Door: D08, D12, D16, D17, D18)	no	5	1 290.00	6 450.00
	PU	**STEEL DOOR FRAMES**				
		PRESSED METAL				
	8.10	Hot dip galvanised pressed metal door frames supplied and built into brickwork, etc complete Dwg 3089.92.00.WLA.16.F001				
					Carried Forward	9 165 823.10

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					Brought Forward	9 165 823.10
		1.2mm Door frames				
C10.91		.3 Double door size 1600 x 2032mm and 230mm thick wall (Door: D06, D07)	no	2	2 418.81	4 837.62
	PU	**SCREED**				
		SCREED				
	8.5	1:3 Cement screed with steel floated finish				
C10.92		.1 30mm Thick to floors	m²	441	93.52	41 242.32
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.6	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C10.93		.1 Walls	m²	2900	105.35	305 515.00
C10.94		.4 Soffit of concrete slabs	m²	105	98.90	10 384.50
		TWO COAT PLASTER				
	8.7	Two coat plaster consisting of one coat 1:6 cement plaster , including all narrow widths, angles, V-joints, etc finished with 6mm thick Rhinolite gypsum plaster coat steel floated to				
C10.95		.1 Walls	m²	105	193.50	20 317.50
	PU	**TILING**				
		WALL TILING				
	8.8	Wall tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to plaster (plaster measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
C10.96		.1 Walls with 600 x 300mm porcelain tiles	m²	50	611.90	30 595.00
		FLOOR TILING				
	8.9	Floor tiling (Allow R400.00/m² for purchasing and delivery of tiles to site excluding VAT) fixed to screed (screed measured elsewhere) with TAL Goldstar 6 rapid setting high strength adhesive and grouted with approved colour tile grout				
C10.97		.1 Floors with 600 x 600mm porcelain tiles	m²	100	619.01	61 901.00
	8.10	Mosaic tiling (Allow R300.00/m² for purchasing and delivery of mosaics to site excluding VAT) fixed to screed (screed measured elsewhere) with approved tile adhesive and grouted with waterproof tile grout				
					Carried Forward	9 640 616.04

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					Brought Forward	9 640 616.04
C10.98		.1 Shower floors	m²	4	885.34	3 541.36
	PU	**PAINTING**				
		PAINTING **Note:** All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Arhitect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C10.99		.1 Steel doors and frames	m²	100	107.50	10 750.00
C10.100		.2 General surfaces of structural steelwork	m²	100	198.88	19 888.00
C10.101		.3 Timber doors and frames	m²	20	107.50	2 150.00
C10.102		.3 Timber skirtings not exceeding 150mm girth	m	50	37.62	1 881.00
	8.19	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C10.103		.1 Plastered walls	m²	2310	66.65	153 961.50
C10.104		.2 Plastered or concrete ceilings	m²	300	64.50	19 350.00
	8.20	Prepare and apply one coat Dulux Trade Primer code T1011 and two coats Dulux Pearlglo water based paint code D40 to internal				
C10.105		.2 Plastered walls in ablution areas	m²	200	66.65	13 330.00
	8.21	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C10.106		.2 Plastered walls	m²	570	68.80	39 216.00
C10.107		.3 Plastered or concrete ceilings	m²	200	66.65	13 330.00
C10.108		.4 Facias and barge boards	m²	100	66.65	6 665.00
	8.22	Extra over external painting to walls for painting plaster recess joint in different colour				
C10.109		.1 Recessed joint	m	300	23.65	7 095.00
		PLUMBING AND DRAINAGE				
		PLUMBING AND DRAINAGE				
						9 931 773.90

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						9 931 773.90
		Note: Plumbing measured in elements (plumbing points) and shall be priced accordingly. Prices must include for supply and installation of all fittings, taps, supply and discharge piping from the fitting to the perimeter of the building face complete. Supply and discharge piping from the perimeter of the building up to the connection point on the site, will be measured separately, and must be priced accordingly. The external supply and discharge piping must include all items such as, excavation, bedding, backfilling, pipe fittings, manholes, etc complete				
	PU	**PLUMBING**				
		Plumbing points in building Dwg 3089.92.00.WLA.16.F002				
	8.17	.1 Toilets				
C10.110		Vaal Downtown or similar approved locally manufactured vitreous china close coupled suite (colour white) overall size 604 x 360 x 829mm high, comprising 90 degree outlet open rim back inlet pan with matching 6,3 litre top duel flush cistern including lid and fitments installed complete to manufacurers instructions	no	3	1 457.59	4 372.77
	8.17	.4 Handwash basins				
C10.111		Vaal Downtown or similar approved vitreous china wall hung basin (colour white) overall size 440 x 510mm with one taphole with integrated overflow and chrome plated waste, bolted to wall with two 10mm bolts and sealed with silicone sealant where basin meets wall, including Cobra Watertech Protea Chrome basin mixer (Code: PA-851) or similar approved locally manufactured Chrome basin mixer, installed complete to manufacturers instructions	no	4	1 794.91	7 179.64
	8.17	.5 Kitchen sink				
C10.112		Franke Cascade Model CDX611 grade 304 18/10 polished stainless steel single end bowl inset sink (code 1990032) or similar approved size 925 x 500mm with one 343 x 410 x 169mm deep bowl fixed onto cupbourd (cupboard measured elsewhere) with Spazi F/1 plumbing kit (code 1120008) two 90mm waste fittings complete to manufacturers instructions Locally manufactured Chrome sink mixer in accordance with SANS 1480 and 15mm flexible connectors	no	1	4 291.40	4 291.40
	8.17	.11 Urinal bowl				
C10.113		Villeroy & Boch - Subway wall mounted white urinal (no lid) (code 75130001) with flush installation set (code 116.003.00.1) with Sigma urinal flush plate (code 116.011.11.5) with urinal trap (code 152.950.11.10) and urinal division (code 11.202.11.1) installed complete to manufacturers instructions	no	2	12 787.12	25 574.24
	8.20	.12 Shower				
					Carried Forward	9 973 191.95

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					Brought Forward	9 973 191.95
C10.114		Cobra Watertech or similar approved 40mm rough brass shower trap (Code: 373SQ) with shallow seal and chrome plated square grating , Cobra Watertech Chrome shower head (Code: KP2-6) or similar approved 10litre/min maximum flow restrictor, self cleaning spray nozzle, and minimum pressure 50 kPa, and Cobra Watertech Protea Chrome shower mixer (Code: PA-856) or similar approved, installed to suppliers instructions	no	2	3 359.59	6 719.18
	8.20	.13 Geyser				
C10.115		150 Liter geyser	no	1	8 966.39	8 966.39
	8.20	.14 Fire hose reel				
C10.116		30m Fire hose reel including two fire extinguishers	sets	4	6 385.65	25 542.60
	PU	**DRAINAGE**				
	8.15	External supply and discharge piping, etc				
C10.117		.2 32mm Dia HDPE water supply in ground	m	100	8.58	858.00
C10.118		.3 110mm Dia uPVC sewer pipe in ground	m	200	23.27	4 654.00
C10.119		.4 160mm Dia uPVC sewer pipe in ground	m	50	143.51	7 175.50
C10.120		.6 80mm Fire hydrant	no	2	349.91	699.82
C10.121		.7 20mm Yard stand tap	no	2	209.59	419.18
	PU	**BATHROOM FITTINGS**				
	8.21	Bathroom fittings				
C10.122		.1 F16C stainless steel grade 304 cistern grab rail 750 x 220mm and F14C grab rail 300x 300 x 300mm installed complete as per supplier sinstructions	set	2	2 272.67	4 545.34
C10.123		.2 Franke Rodan RODX605 0,8mm thick satin finished stainless steel waste bin (code 2120097) size 355 x 168 x 460mm high with capacity of 23 litres and cylinder lock and standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	2	4 333.87	8 667.74
C10.124		.3 Franke HF2400HD 1,2/1,5mm thick stainless steel satin finished automatic hand free hand dryer (code 2500001) size 280 x 207 x 245mm high with two vandal proof lock screws and key wrench, fixed to walls with stainless steel screws and 200W motor connected to power supply as per suppliers instructions	no	2	14 015.58	28 031.16
C10.125		.4 Franke Rodan RODX625 0,8mm thick satin finished stainless steel soap dispenser (code 2120107) size 120 x 107 x 296mm high fixed to wall with stainless steel screws as per suppliers instructions	no	2	4 906.62	9 813.24
					Carried Forward	10 079 284.10

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					Brought Forward	10 079 284.10
C10.126		.5 Franke Rodan RODX600 0,8mm thick satin finished stainless steel paper towel dispenser (code 2120099) size 275 x 112 x 355mm high with capacity of 500-800 towels, inspection window on the side with Franke standard key, fixed to wall with stainless steel screws as per suppliers instructions	no	2	3 074.60	6 149.20
C10.127		.6 Franke Rodan RODX672 0,8mm thick satin finished stainless steel double toilet roll holder (code 2120101) size 144 x 138 x 301mm high for two rolls maiimum, 120mm diameter with cylinder lock with standard Franke key, fixed to wall with stainless steel screws as per suppliers instructions	no	3	3 722.53	11 167.59
	8.24.7	Lockers				
C10.128		.1 Cubical Solutions 2Z locker (Code: CSL/CHPL/304/Z) or similar approved locker, overall size 300 x 450 x 1900mm high (1800mm locker and 100mm plinth) comprising 12mm compact high pressure laminate white carcasses and doors , including auto return hinges (Code: CSSH/E112) and D shaped keeps (Code CSLJ/LK/3) for padlocks (padlocks not included) with lock cover plate and handles (Code: CSLJ/LH/9) installed complete	no	6	5 907.12	35 442.72
	PU	**JOINERY**				
		JOINERY				
		Purpose made joinery fittings supplied and installed complete				
	8.9	Open shelves in store room Joinery item J4.1 Dwg 3089.92.00.WLA.16.F003				
C10.129		.1 Complete installation as shown on drawings	no	2	8 352.75	16 705.50
	8.10	Open shelves in control room Joinery item J4.2 Dwg 3089.92.00.WLA.16.F004				
C10.130		.1 Complete installation as shown on drawings	no	2	8 352.75	16 705.50
	8.11	Kitchen Counter Joinery item J4.3 Dwg 3089.92.00.WLA.16.F005				
C10.131		.1 Complete installation as shown on drawings	no	1	18 767.35	18 767.35
	PU	**FURNITURE**				
		FURNITURE				
	8.20	Global Top Counter, Urban Lite leg and Pedestal Furniture Item 1.1 Dwg 3089.92.00.WLA.16.D001				
C10.132		.1 Complete installation as shown on drawings	no	1	5 601.06	5 601.06
	8.21	Ascot Office Chair				
					Carried Forward	10 189 823.02

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					Brought Forward	10 189 823.02
		Furniture Item 1.2 Dwg 3089.92.00.WLA.16.D001				
C10.133		.1 Complete installation as shown on drawings	no	1	1 524.18	1 524.18
	8.22	Global Top Counter, Urban Lite leg and Pedestal Furniture Item 2.1 Dwg 3089.92.00.WLA.16.D001				
C10.134		.1 Complete installation as shown on drawings	no	5	5 601.05	28 005.25
	8.23	Ascot Office Chair Furniture Item 2.2 Dwg 3089.92.00.WLA.16.D001				
C10.135		.1 Complete installation as shown on drawings	no	5	1 524.18	7 620.90
	8.24	Ecocentric Filing Cabinets Furniture Item 2.3 Dwg 3089.92.00.WLA.16.D001				
C10.136		.1 Complete installation as shown on drawings	no	1	5 757.82	5 757.82
		RETAINING WALLS				
		Dwg 2089.30.01.WLA.11.D001				
	SANS 1200 D	**RESTRICTED EXCAVATION**				
	8.3.3.a	Restricted excavation in all materials and place within freehaul distance for				
C10.137		.1 Wall footings	m³	20	365.86	7 317.20
		HARD ROCK EXCAVATION				
	8.3.3.b	Extra over reference 8.3.3 (a) for				
C10.138		.2 Hard rock excavation	m³	2	803.79	1 607.58
		BACKFILLING WITH MATERIAL FROM SITE				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures with material from site				
	8.3.9.a	Selected material compacted to 93% mod AASHTO density				
C10.139		.1 Alongside walls in foundations	m³	10	-	-
C10.140		.2 Behind retaining walls	m³	100	-	-
		BACKFILLING WITH COMMERCIAL MATERIAL				
		Extra over reference 8.3.9 (a) above for constructing filling with material supplied by the Contractor from commercial sources of the following quality				
	8.3.4.a	G7 material compacted to 93% mod AASHTO density				
					Carried Forward	10 241 655.95

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					Brought Forward	10 241 655.95
C10.141		.1 Alongside walls in foundations	m³	5	248.89	1 244.45
C10.142		.2 Behind retaining walls	m³	50	248.89	12 444.50
	SANS 1200 GA	**ROUGH FORMWORK**				
	8.2.1.b	Plane vertical				
C10.143		.1 Sides of wall footings	m²	10	418.08	4 180.80
	8.2.3	Rough formwork to narrow widths				
C10.144		(a) Edges, risers, etc not exceeding 300mm wide	m	10	418.08	4 180.80
	SANS 1200 GA	**ROD REINFORCEMENT**				
	8.3.1.a	Mild steel				
C10.145		.1 All sizes	ton	0.1	19 424.18	1 942.42
	8.3.1.b	High tensile steel				
C10.146		.1 All sizes	ton	1.0	19 424.18	19 424.18
	SANS 1200 GA	**STRENGTH CONCRETE**				
	8.4.2	Strength concrete 15Mpa/19mm				
C10.147		(a) Blinding layer 50mm thick	m³	2	2 436.39	4 872.78
	8.4.3.c	Strength concrete 30Mpa/19mm				
C10.148		.1 Wall footings	m³	10	2 337.49	23 374.90
	SANS 1200 GA	**LOFFELSTEIN WALLS**				
	1.0	L500 blocks				
C10.149		(a) Retaining wall maximum 12 blocks high laid in accordance with manufacturers instructions with blocks filled with garden soil complete	m²	100	1 817.45	181 745.00
	3.0	Rockgrid PC reinforcing fabric				
C10.150		(a) Type 50/50 laid horizontally in filling material	m²	100	36.28	3 628.00
	4.0	Geotextile fabric				
C10.151		(a) Bidim A4 behind retaining walls	m²	200	19.89	3 978.00
		BILL NO. C10 **DEWATERING BUILDING - WLA**				
		Carried forward to Summary of Bills			**Total**	10 502 671.78

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		Sub portion C/A4 - Building works				
		BILL NO. C11 **SLUDGE MANAGEMENT SUBSTATION - ELD**				
		BUILDING WORKS				
	SANS 1200 D	**EARTHWORKS**				
		RESTRICTED EXCAVATIONS				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C11.1		.1 Sumps	m³	4	365.86	1 463.44
C11.2		.2 Wall footings	m³	60	365.86	21 951.60
C11.3		.3 Cable duct tranches	m³	80	365.86	29 268.80
C11.4		.4 Column bases	m³	20	365.86	7 317.20
	8.3.3	(b) Extra over reference 8.3.3 (a) for				
C11.5		.2 Hard rock excavation	m³	1	803.79	803.79
	SANS 1200 D	**BACKFILLING**				
		RESTRICTED BACKFILLING				
		Extra over reference 8.3.2 (a) and 8.3.3 (a) for backfill or for fill material against structures				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C11.6		.1 Alongside walls in foundations	m³	30	248.89	7 466.70
C11.7		.3 Under floors	m³	180	248.89	44 800.20
		(c) Clean washed sand filling				
C11.8		.1 Inside cable ducts and lightly compacted by hand over electrical cables	m³	17	255.31	4 340.27
	SANS 1200 G	**FORMWORK**				
		ROUGH FORMWORK				
	8.2.1	.2 Plane vertical				
C11.9		.1 Sump walls	m²	16	364.71	5 835.36
C11.10		.2 Sides of floor slabs, bases, etc	m²	58	364.71	21 153.18
					Carried Forward	144 400.54

					Brought Forward	144 400.54
		SMOOTH FORMWORK				
	8.2.2	Plane horizontal				
C11.11		.1 Slabs	m²	290	561.43	162 814.70
C11.12		.2 Beams	m²	10	878.09	8 780.90
	8.2.2	Plane vertical				
C11.13		.1 Beams	m²	20	364.71	7 294.20
		.2 Sump walls	m²	16	364.71	5 835.36
C11.15		.3 Square or rectangular columns	m²	70	364.71	25 529.70
C11.16		.4 Machine bases	m²	12	364.71	4 376.52
	8.2.5	Normal formwork to narrow widths				
C11.17		(a) Edges, risers, etc not exceeding 300mm wide	m	130	109.41	14 223.30
	8.1.1.2	Normal formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C11.18		(a) Chamfer size 50 x 50mm	m	10	150.20	1 502.00
C11.19		(b) Groove size 70mm wide x 50mm deep	m	10	160.80	1 608.00
C11.20		(c) Rebate size 100mm x 100mm	m	10	214.44	2 144.40
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
	8.3.1	Steel bars				
		(a) .1 Mild steel				
C11.21		.1 All sizes	ton	1	18 976.98	18 976.98
		(a) .2 High tensile steel				
C11.22		.1 All sizes	ton	20	18 976.98	379 539.60
	8.3.2	**MESH REINFORCEMENT**				
		(c) High tensile welded mesh				
		1. Ref no 193 in apron slabs	m²	90	58.67	5 280.30
C11.24		.2 Ref no.395 in floor slabs	m²	260	107.37	27 916.20
	SANS 1200 G	**CONCRETE**				
		STRENGTH CONCRETE				
					Carried Forward	810 222.70

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					Brought Forward	810 222.70
		(a) Strength concrete 20MPa/19mm				
C11.25		.1 Apron slabs	m³	8	1 802.35	14 418.80
	8.4.3	(b) Strength concrete 35Mpa/19mm				
C11.26		.1 Ramps	m³	5	1 936.19	9 680.95
C11.27		.2 Column bases	m³	15	1 936.19	29 042.85
C11.28		.3 Floor slabs	m³	39	1 936.19	75 511.41
C11.29		.4 Wall footings	m³	22	1 936.19	42 596.18
C11.30		.5 Columns	m³	7	1 936.19	13 553.33
C11.31		.6 Machine bases	m³	4	1 936.19	7 744.76
		CONCRETE IN SMALL QUANTITIES				
	8.4.2	Blinding layers				
		.1 Strength concrete 15Mpa/19mm				
C11.32		.1 50mm Thick	m³	8	1 857.71	14 861.68
		.2 1:4 Cement riversand screed with steel floated finish				
C11.33		.1 50mm Thick on sand filling in cable ducts	m²	18	92.89	1 672.02
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C11.34		.1 Roof slabs	m³	90	2 199.02	197 911.80
C11.35		.2 Beams	m³	10	2 199.02	21 990.20
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(a) Wood floated finish				
C11.36		.1 Floor slabs and slabs	m²	530	13.92	7 377.60
C11.37		.2 Top of walls, beams, etc	m²	10	13.92	139.20
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
					Carried Forward	1 246 723.48

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					Brought Forward	1 246 723.48
	8.5	(a) 12mm Thick jointex placed vertically between concrete surfaces				
C11.38		.4 Narrow widths not exceeding 300mm wide	m	110	35.48	3 902.80
		SEALERS				
	8.5	(b) Polyurethane joint sealer				
C11.39		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	110	153.31	16 864.10
		TRENCH COVERS AND FRAMES				
		Dwg EAM-EE-GS-001 & 007				
		Hot dip galvanised mild steel 45 x 45 x 3mm angle iron section frame with approved lugs at back, cast into concrete or built into brick walls, complete				
C11.40		.1 Frame	m	90	291.65	26 248.50
		Hot dip galvanised mild steel tophat section to suit 35mm thick timber trench covers placed between panels as				
C11.41		.1 Frame	m	60	913.00	54 780.00
		Wrot Merati purpose made framed and ledged trench covers generally 800mm wide and 35mm thick, placed loose over trenches, including all cutting and waste etc, complete with two coats of Linseed oil for protection				
C11.42		.1 Covers	m²	60	1 290.00	77 400.00
	PU	**BRICKWORK**				
		FOUNDATIONS				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C11.43		.3 230mm Thick wall	m²	160	508.77	81 403.20
C11.44		.4 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties and filling cavity with 25Mpa concrete complete	m²	104	613.01	63 753.04
		SUPERSTRUCTURE				
	8.4.1a	Stock brickwork in 1:4 cement mortar				
C11.45		.2 230mm Thick wall	m²	40	508.77	20 350.80
C11.46		.5 280mm Cavity wall of two 115mm walls with 50mm cavity between including butterfly wall ties	m²	330	508.01	167 643.30
	PU	**FACE BRICKWORK**				
					Carried Forward	1 759 069.22

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					Brought Forward	1 759 069.22
		FACE BRICKWORK - EXTERNALLY				
	8.4.1b	Extra over reference 8.4.1a for face brickwork type Corobrik Midrand 20-31Mpa The Black Brick Imperial FBX clay facebrick with recessed joints and cleaned to leave clean and free of cement mortar spillage - mortar to be coloured black with Chryso-Super Jet Black Oxide complete				
C11.47		.20 Stretcher course bond	m²	190	586.44	111 423.60
C11.48		.21 Ditto in foundations	m²	80	546.50	43 720.00
	PU	**SUNDRIES**				
		REINFORCING				
	8.4.6	Brick reinforcing				
C11.49		.2 150mm Wide brickforce	m	1200	2.19	2 628.00
C11.50		.3 Rod reinforcing (all sizes)	kg	20	23.75	475.00
		LINTOLS				
	8.3	Precast pre-stressed concrete lintols built into brickwork				
C11.51		.1 75 x 110mm Lintol	m	50	70.12	3 506.00
		CLOSING OF WALL CAVITIES				
		Two coarses of brickwork in closing of 50mm cavity of cavity walls where required				
C11.52		.1 Vertically	m	20	63.68	1 273.60
C11.53		2 Horizontally	m	104	23.53	2 447.12
	SANS 1200 GB	**EXPANSION JOINT**				
	8.2.8	**SLIDING JOINT**				
C11.54		Two layers malthoid placed between horizontal brickwork and concrete surfaces	m²	35	622.29	21 780.15
	PU	**GLASS BLOCKS**				
		GLASS BLOCKS				
	8.20	Aluglass Bautech Clearview 198 - or other approved - glass block walls fixed with approved epoxy waterproof mortar and tied to adjoining brickwork with approved fixtures, all to manufacturers specifications complete				
C11.55		.1 190 x 190 x 190mm Glass blocks in panels	m²	10	2 365.00	23 650.00
	PU	**DAMPPROOFING**				
						1 969 972.69

						1 969 972.69
		DAMPPROOFING				
	8.4.3	Brickgrip dpc				
C11.56		.1 375 Micron under walls including cement mortar triangular fillet in cavity walls	m²	35	32.28	1 129.80
	8.4.3	Polyethelene sheeting				
C11.57		.1 250 Micron USB green under floors	m²	240	12.73	3 055.20
	PU	**PURPOSE MADE DOORS AND FRAMES**				
		PURPOSE MADE DOORS AND FRAMES				
	8.8	Purpose made doors and frames supplied and built into				
		3CR12 steel				
C11.58		.1 Single door and frame with door size 815 x 2400mm high including all locking devices hinges, etc complete. Ref. dwg. EAM-EE-GS-45, sheet 1-3	no	1	45 077.68	45 077.68
C11.59		.2 Double door and frame with door size 1500 x 2400mm high including all locking devices hinges, etc complete Ref.dwg EAM-EE-GS-48, sheet 1-3	no	3	61 768.49	185 305.47
	SANS	**SUPPLY, FABRICATE AND ERECT STEELWORK - ALL INCLUSIVE**				
	1200 HA	**HIGH SECURITY FENCING**				
		Fencing supplied and fixed complete, including all posts, stays, standards, droppers, excavation, backfilling, concrete bases, etc				
	8.3.1	Welded mesh fencing in approx. 3300mm panels 2400mm high of 3mm galvanized wire with aperture size (centres) @ 76.2mm x 12.7mm including horizontal reinforcing. Fixed to and including hot dip galvanized locking posts, clamps, etc. With 400x 400 x 600mm 20Mpa concrete footings. Dwg 3089.00.00.ELD.16.X001				
C11.60		.1 High security fencing (high grade)	m	12	1 983.38	23 800.56
	8.3.1	Gates supplied and fixed complete, including all posts, stays, hinges, locking devices, excavation, backfilling, concrete bases, etc Dwg 3089.00.00.ELD.16.X001				
C11.61		.1 Double leaf gate size 2400mm wide and 2400mm high complete	no	2	15 898.18	31 796.36
					Carried Forward	2 260 137.76

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					Brought Forward	2 260 137.76
	SANS 1200 HC	**CORROSION PROTECTION**				
	8.2.3	Repair damaged primer coat and apply one coat universal undercoat to 25um DFT and one coat gloss enamel finish to 30 micron DFT				
C11.62		.1 General surfaces of structural steel	m²	80	136.52	10 921.60
	PU	**PLASTER**				
		ONE COAT PLASTER				
	8.5	One coat 1:6 cement plaster including all narrow widths, angles, V-joints, etc				
		.2 Steel float finish to				
C11.63		.1 External walls	m²	240	110.72	26 572.80
C11.64		.2 Internal walls	m²	380	105.35	40 033.00
	PU	**PAINTING**				
		PAINTING				
		Note: All paint to be Dulux or other approved and applied in accordance with the manufacturers instructions All paint to be of an approved colour as specified by the Architect				
	8.18	Undercoat and two coats exterior quality gloss enamel paint to				
C11.65		.1 Steel doors and frames	m²	10	107.50	1 075.00
C11.66		.2 General surfaces of structural steelwork	m²	10	198.88	1 988.80
	8.18	Prepare and apply one coat Dulux Pre Paint Smoothover and two coats Dulux Trade 100 lowsheen code T2001 paint to internal				
C11.67		.1 Plastered walls	m²	240	66.65	15 996.00
C11.68		.2 Plastered or concrete ceilings	m²	380	64.50	24 510.00
	8.18	Prepare and apply one coat Dulux Trade Plaster Primer Moisture Tolerant and two coats Dulux Wallguard (Code:D44) paint to external				
C11.69		.2 Plastered walls	m²	240	68.80	16 512.00
C11.70		.3 Plastered or concrete ceilings	m²	20	66.65	1 333.00
C11.71		.4 Facias and barge boards	m²	10	66.65	666.50
					Carried Forward	2 399 746.46

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					Brought Forward	2 399 746.46
	8.18	Extra over external painting to walls for painting plaster recess joint in different colour				
C11.72		.1 Recessed joint	m	70	23.65	1 655.50
		SLUDGE MANAGEMENT SUBSTATION - ELD				
		Carried forward to Summary of Bills			**Total**	2 401 401.96

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C12 - Earthworks and pipework				
		BILL NO. C12 **EARTHWORKS AND PIPEWORK**				
	SANS 1200 DB	**TRENCHING**				
	8.3.2	Excavate in all materials, backfill and compact to 90% mod AASHTO density, and dispose of surplus and unsuitable materials off site at a site established by the Contractor for trenches				
		(a) .1 Up to 0.8 m wide				
C12.1		.1 Up to 1 m deep	m³	100	187.82	18 782.00
C12.2		.2 Over 1 m and up to 2 m deep	m³	550	446.31	245 470.50
		(a) .2 Over 0.8 m and up to 1.2 m wide				
C12.3		.1 Up to 1 m deep	m³	80	187.82	15 025.60
C12.4		.2 Over 1 m and up to 2 m deep	m³	550	286.91	157 800.50
C12.5		.3 Over 2 m and up to 3 m deep	m³	1 900	393.18	747 042.00
C12.6		.4 Over 3 m and up to 4 m deep	m³	190	499.44	94 893.60
		(a) .3 Over 1.2 m and up to 1.6 wide				
C12.7		.1 Up to 1 m deep	m³	50	207.21	10 360.50
C12.8		.2 Over 1 m and up to 2 m deep	m³	650	286.91	186 491.50
C12.9		.3 Over 2 m and up to 3 m deep	m³	850	366.61	311 618.50
C12.10		.4 Over 3 m and up to 4 m deep	m³	120	446.31	53 557.20
		(a) .4 Over 1.6 m and up to 2.4 m wide				
C12.11		.1 Up to 1 m deep	m³	50	180.65	9 032.50
C12.12		.2 Over 1 m and up to 2 m deep	m³	1 450	233.78	338 981.00
C12.13		.3 Over 2 m and up to 3 m deep	m³	2 800	286.91	803 348.00
C12.14		.4 Over 3 m and up to 4 m deep	m³	1 100	340.04	374 044.00
C12.15		.5 Over 4 m and up to 5 m deep	m³	100	366.61	36 661.00
		b) Extra-over 8.3.2 a) for:				
C12.16		a) Hard rock excavation	m³	20	803.79	16 075.80
					Carried Forward	3 419 184.20

					Brought Forward	3 419 184.20
C12.17		c) Excavate unsuitable material from trench bottom and dispose of it	m³	300	1.88	564.00
	SANS 1200 D	STONE MATERIAL				
	8.3.4	a) Extra-over for importation of materials from commercial sources				
C12.18	8.3.4.1	(1) 19 mm stone for foundation matress for valve structures or for use in waterlogged areas as ordered	m³	300	276.54	82 962.00
		b) Extra over for importation of material from stockpile				
	8.3.4.1	(2) Crushed material				
		GEOTEXTILE				
C12.19		Supply, handle and install A4 needle-punched nonwoven polyester geotextile with 500 mm miminum overlap	m²	2000	19.89	39 780.00
		BEDDING (PIPES)				
	SANS 1200LB	**BEDDING**				
		FROM EXCAVATIONS				
	8.2.1	Provision of bedding material from trench excavations, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
C12.20		(a) Selected granular material	m³	440	97.37	42 842.80
C12.21		(b) Selected fill material	m³	2 400	97.37	233 688.00
		FROM OTHER EXCAVATIONS				
	8.2.2.1	Provision of bedding material by importation from other necessary excavations within the freehaul distance, including screening of material to remove all vegetation, stones and foreign objects to the Engineers approval				
C12.22		(a) Selected granular material	m³	100	158.27	15 827.00
C12.23		(b) Selected fill material	m³	600	158.27	94 962.00
		FROM COMMERCIAL SOURCES				
	8.2.2.3	Provision of bedding material by importation from commercial sources selected by the Contractor				
C12.24		(a) Selected granular material	m³	180	346.26	62 326.80
C12.25		(b) Selected fill material	m³	870	346.26	301 246.20
	8.2.4	Class 20/19 concrete for pipe thrust blocks				
					Carried Forward	4 293 383.00

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					Brought Forward	4 293 383.00
C12.26		i) pipe thrust blocks	m³	10	2 324.15	23 241.50
C12.27		ii) encasing of pipes	m³	25	2 324.15	58 103.75
	SANS 1200 DB	Shore trench opposite structure or service in areas where the sides are unstable and widening of the trench is not possible,impractical or uneconomic				
	8.3.4a	For excavations further than 30 m from existing buildings/structures using high impact and/or high frequency vibrating driver/equipment:				
C12.28		a) Shoring for trench depth up to 3.0 m	m²	1200	-	-
C12.29		b) Shoring for trench depth up to 3.0 m to 4.0 m	m²	300	-	-
	8.3.4b	For excavations closer than 30 m from existing buldings/structures using silent and vibration free shoring technologies:				
C12.30		a) Shoring for trench depth up to 3.0 m	m²	800	-	-
C12.31		b) Shoring for trench depth up to 3.0 m to 4.0 m	m²	200	-	-
	8.3.5	Existing services that intersect or adjoin a pipe trench:				
		a) Services that intersect a trench:				
		i) Sewers				
C12.32		100 mmØ - 400 mmØ	no	3	503.55	1 510.65
C12.33		450 mmØ - 800 mmØ	no	2	503.55	1 007.10
		ii) Stormwater culverts				
C12.34		300 mmØ - 525 mmØ	no	2	503.55	1 007.10
C12.35		600 mmØ - 825 mmØ	no	1	503.55	503.55
		iii) Water mains				
C12.36		100 mmØ - 250 mmØ	no	2	503.55	1 007.10
		iv) Electrical				
C12.37		1 x 11 kV cable	no	1	503.55	503.55
C12.38		2 x 11kV cables	no	1	503.55	503.55
		v) Telecommunications				
C12.39		Overhead lines	no	1	503.55	503.55
C12.40		Single sleeve or cable	no	2	503.55	1 007.10
	8.3.5	b) Services that adjoin a trench: i) Sewer				
					Carried Forward	4 382 281.50

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					Brought Forward	4 382 281.50
C12.41		100 mmØ - 400 mmØ	m	100	125.89	12 589.00
C12.42		450 mmØ - 600 mmØ	m	120	125.89	15 106.80
		ii) Stormwater				
C12.43		375 mmØ - 325 mmØ	m	150	125.89	18 883.50
		iii) Water mains				
C12.44		100 mmØ - 250 mmØ	m	200	125.89	25 178.00
		iv) Electrical				
C12.45		1 x 11 kV cable	m	80	125.89	10 071.20
C12.46		Multiple 11 kV cables	m	60	125.89	7 553.40
		v) Telecommunications				
C12.47		Overhead lines	m	100	125.89	12 589.00
C12.48		vii) Street lighting lamppost	no	10	125.89	1 258.90
	SANS 1200L	**MEDIUM PRESSURE PIPELINE**				
	8.2.1	Supply, lay and bed pipes complete				
		1 uPVC Pipelines, Class 9				
C12.49		i) 90 mm dia	m	10	138.25	1 382.50
C12.50		ii) 110 mm dia	m	20	156.52	3 130.40
C12.51		iii) 160 mm dia	m	280	279.07	78 139.60
C12.52		iv) 200 mm dia	m	350	402.70	140 945.00
C12.53		v) 250 mm dia	m	75	605.87	45 440.25
C12.54		vi) 315 mm dia	m	160	945.57	151 291.20
C12.55		vii) 355 mm dia	m	10	1 355.15	13 551.50
		2 uPVC, Pipelines, Class 12				
C12.56		i) 250 mm dia	m	400	690.80	276 320.00
C12.57		ii) 315 mm dia	m	400	1 073.50	429 400.00
C12.58		iii) 355 mm dia	m	10	1 355.15	13 551.50
		3 Essex pipeline Type 4 HDPE, Class 12 pipe. Rate to include for two bends, cut length and coupling to				
C12.59		i) 110 mm dia	m	170	172.65	29 350.50
					Carried Forward	5 668 013.75

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					Brought Forward	5 668 013.75
C12.60		ii) 63 mm dia	m	15	105.51	1 582.65
		4 HDPE,PE100 SDR17 PN 10				
C12.61		i) 800 mm dia	m	145	7 878.95	1 142 447.75
C12.62		ii) 1 000 mm dia	m	110	13 389.83	1 472 881.30
C12.63		iii) 1 200 mm dia	m	300	24 534.57	7 360 371.00
	8.2.2	Supply and bedding of specials, complete with couplings				
		1 uPVC bends				
		Note: all bends to be medium radius segmented bends				
C12.64		i) 160 mm dia x 45°	no	3	603.08	1 809.24
C12.65		ii) 160 mm dia x 90°	no	1	603.08	603.08
C12.66		iii) 200 mm dia x 11.25°	no	1	619.20	619.20
C12.67		iv) 200 mm dia x 22.5°	no	2	963.20	1 926.40
C12.68		v) 200 mm dia x 45°	no	3	1 281.40	3 844.20
C12.69		vi) 200 mm dia x 90°	no	2	1 281.40	2 562.80
C12.70		vii) 250 mm dia x 45°	no	5	1 988.75	9 943.75
C12.71		viii) 250 mm dia x 90°	no	10	1 988.75	19 887.50
		2 Stainless steel bends complete with stepped couplings, both sides to suit 315 mm ° uPVC pipes				
		Note: all bends to be medium radius segmented bends				
C12.72		i) 300 mm dia SS x 35°	no	1	16 574.03	16 574.03
C12.73		ii) 300 mm dia SS x 40°	no	1	16 574.03	16 574.03
C12.74		iii) 300 mm dia SS x 45°	no	6	16 574.03	99 444.18
C12.75		iv) 300 mm dia SS x 50°	no	1	18 934.52	18 934.52
C12.76		v) 300 mm dia SS x 90°	no	6	22 386.39	134 318.34
		3 Stainless steel bends to suit HDPE pipes Stainless steel bend flanged both sides with 800 mm dia flanges for connection to a 800 mm dia HDPE pipe				
		Note: all bends to be medium radius segmented bends				
C12.77		i) 600 mm dia x 70°	no	2	115 244.17	230 488.34
					Carried Forward	16 202 826.06

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					Brought Forward	16 202 826.06
		850 mm dia flanged bend, both flanges to be 1 000 mm dia flanges for connection to a 1 000 mm dia HDPE pipe Note: all bends to be medium radius segmented bends				
C12.78		ii) 850 mm dia x 33°	no	1	199 051.04	199 051.04
C12.79		iii) 850 mm dia x 45°	no	3	195 826.04	587 478.12
		1 000 mm dia flanged bend, both flanges to be 1 200 mm dia flanges for connection to a 1 000 mm dia HDPE pipe Note: all bends to be medium radius segmented bends				
C12.80		iv) 1 000 mm dia x 33°	no	2	282 162.52	564 325.04
C12.81		v) 1 000 mm dia x 60°	no	2	282 162.52	564 325.04
C12.82		vi) 1 000 mm dia x 63°	no	2	282 162.52	564 325.04
C12.83		vii) 1 000 mm dia x 90°	no	1	282 162.52	282 162.52
		4 HDPE flange adaptor complete and fitted with a stainless steel grade 316 backing flange to suit HDPE pipe				
C12.84		i) 800 mm dia for a HDPE PE 100, SDR 17 PN 10 pipe	no	16	156 912.38	2 510 598.08
C12.85		ii) 1 000 mm dia for a HDPE PE 100, SDR 17 FN 10 pipe	no	13	168 112.80	2 185 466.40
C12.86		iii) 1 200 mm dia for a HDPE PE 100, SDR 17 PN10	no	13	288 800.90	3 754 411.70
		5 Stainless steel grade 316 specials to suit HDPE pipes				
C12.87		i) 600 x 850 x 30° flanged lateral, upstream flanges 800 mm dia to suit 800 mm dia HDPE pipe Downstream flange 1 000 mm dia to suit 1 000 mm dia HDPE pipe	no	2	216 625.14	433 250.28
		6 Connect new pipes to existing structures Note: Rate to include for breaking up existing reinforced concrete wall to suit pipe dia cutting reinforcing and adding additional reinforcing around opening Closing opening watertight with non shrink grout and making good to all trades				
C12.88		i) Connect 825 dia RC pipe to 600 dia Du-Noon chamber. Assumed wall thickness 300 mm	no	1	10 143.70	10 143.70
C12.89		ii) Connect 315 mm dia uPVC pipe to drain chamber	no	2	3 803.89	7 607.78
					Carried Forward	27 865 970.80

					Brought Forward	27 865 970.80
C12.90		iii) Connect 200 mm dia uPVC pipe to drain chamber	no	1	2 535.92	2 535.92
	8.2.15	Extra over items for the supply and wrapping of the flanges below ground using the Stopaq wrapping system (or equivalent to be approved by the Employer's Agent) Note: Rate to include for stopaq FN 41 00 paste, wrapping geotextile, C2H wrapping band and PVC outer wrap				
C12.91		i) 300 mm dia	no	30	6 423.12	192 693.60
C12.92		ii) 600 mm dia	no	8	12 195.88	97 567.04
C12.93		iii) 850 mm dia	no	8	18 619.00	148 952.00
C12.94		iv) 1 000 mm dia	no	16	24 391.75	390 268.00
	8.2.15	Extra-over for the supply and wrapping of the stainless steel grade 316 pipe specials below ground and protruding from the valve chambers with 1.5mm thick Stopaq CZH-P wrapping band followed by a 0.5mm thick Stopaq PE outer wrap (or equivalent to be approved by the Employer's Agent)				
C12.95		i) 300 mm dia	m	42	1 741.29	73 134.18
C12.96		ii) 600 mm dia	m	40	3 426.34	137 053.60
C12.97		iii) 850 mm dia	m	15	4 830.55	72 458.25
C12.98		iv) 1 000 mm dia	m	30	5 673.08	170 192.40
	8.2.4	Extra over item 8.2.1 for the straight cutting of the pipe preparing ends and repairing of protection and the supplying and fixing of the extra coupling if required uPVC pipes, Class 9				
C12.99		i) 110 mm dia	no	1	696.82	696.82
C12.100		ii) 160 mm dia	no	9	852.69	7 674.21
C12.101		ii) 200 mm dia	no	20	1 015.02	20 300.40
C12.102		iv) 250 mm dia	no	11	1 196.69	13 163.59
C12.103		v) 315 mm dia	no	18	2 347.80	42 260.40
C12.104		vi) 355 mm dia	no	1	2 996.02	2 996.02
		HDPE pipes, PE 100, SDR17, PN10				
C12.105		(i) 800 mm dia	no	8	27 039.04	216 312.32
C12.106		(ii) 1 000 mm dia	no	7	73 178.90	512 252.30
C12.107		(iii) 1 200 mm dia	no	11	88 812.20	976 934.20
					Carried Forward	30 943 416.05

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					Brought Forward	30 943 416.05
		MISCELLANEOUS				
		1 HDPE Essex Relay				
C12.108		Break through 250 mm thick reinforced concrete wall to suit new 100 Ø SS pipe with puddle flange and coupling to suit 110 HDPE pipe. Repair watrtight after pipe installation	no	1	17 810.03	17 810.03
		2 Standard cable draw pit at primary settling tanks				
		Refer drawing 3089.00.00.WDA.14.X001 and for details CoCT drawing EAM-EE.GS-O37				
		Complete with manhole cover and frame F16.5, Type 4				
C12.109		i) Cable draw pit	no	4	26 523.41	106 093.64
C12.110		ii) Air connector chamber	no	4	17 400.83	69 603.32
		3 Class 35/19, concrete chamber with grating. Complete as shown on drawing 3089.00.00.DET.14.D005				
C12.111		i) Scum drain chamber at primary settling tanks, 1.5 m deep	no	1	19 293.02	19 293.02
C12.112		ii) Filtrate drain chamber at dewatering building, 1.5 m deep	no	2	19 293.02	38 586.04
C12.113		iii) Drain chamber at primary sludge holding tanks, 1.2 m deep	no	2	19 293.02	38 586.04
		4 Class 35/19 concrete chamber with grating. Complete as shown on drawing 3089.00.00.DET.14.D005 but inside 800 x 800 mm				
C12.114		i) At Ferric chloride dosing installations (08 plant, MBR plant) 1.0 m deep	no	4	19 293.02	77 172.08
		CONCRETE SEWERS				
	SANS 1200 LD	**CONCRETE PIPES**				
	8.2.1	Supply, lay, bed and test concrete interlocking joint pipes in accordance to SANS 677 (spigot and socket)				
C12.115		i) 375 mm dia, Class 75 D	m	100	960.92	96 092.00
C12.116		ii) 450 mm dia, Class 75 D	m	225	1 071.93	241 184.25
		Supply, lay, bed and test concrete sewer pipes with sacrificial layer in accordance to SANS 677 (rolling rubber ring joint)				
		1 Class 100 D				
					Carried Forward	31 647 836.47

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					Brought Forward	31 647 836.47
C12.117		i) 450 mm dia	m	330	1229.23	405 645.90
C12.118		ii) 600 mm dia	m	10	1410.75	14 107.50
C12.119		iii) 750 mm dia	m	40	1229.23	49 169.20
C12.120		iv) 825 mm dia	m	10	1229.23	12 292.30
C12.121		v) 900 mm dia	m	90	1229.23	110 630.70
C12.122		vi) 1050 mm dia	m	220	1229.23	270 430.60
C12.123		vii) 1200 mm dia	m	110	1229.23	135 215.30
		2 Class 75 D				
C12.124		i) 600m dia	m	42	1 229.23	51 627.66
C12.125		ii) 825 mm dia	m	60	1 229.23	73 753.80
C12.126		iii) 900 mm dia	m	10	1 229.23	12 292.30
C12.127		iv) 1200 mm dia	m	28	1 229.23	34 418.44
		Supply, lay, bed and test concrete sewer pipes in accordance to SANS 677 (rolling rubber ring joint) with internal acid resistant HDPE liner)				
C12.128		i) 825 mm dia, Class 75D	m	26	6 123.82	159 219.32
C12.129		ii) 1050 mm dia, Class 100D	m	40	6 123.82	244 952.80
C12.130		iii) 1500 mm dia, Class 100D	m	45	11 439.70	514 786.50
		Supply and lay concrete rectangular culverts in acc to SANS 986, on in-situ concrete slab Slab to be class 25/19 concrete, complete with reinforcing as shown on drawing				
C12.131		i) 1 200 x 600 mm Refer drawing 3089.30.01.GZC.03.D004	m	10	4 981.18	49 811.80
	8.4.4	Extra over item 8.2.1 cutting the end units for culverts on site				
		a) Straight cut (interlocking joint pipes)				
C12.132		i) 375 mm dia	no	3	478.83	1 436.49
C12.133		ii) 450 mm dia	no	7	478.83	3 351.81
		b) Straight cut (rolling rubber ring joint pipes)				
C12.134		i) 450 mm dia	no	9	478.83	4 309.47
C12.135		ii) 600 mm dia	no	4	478.83	1 915.32
					Carried Forward	33 797 203.68

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					Brought Forward	33 797 203.68
C12.136		iii) 750 mm dia	no	1	598.54	598.54
C12.137		iv) 825 mm dia	no	4	598.54	2 394.16
C12.138		v) 900 mm dia	no	1	598.54	598.54
C12.139		vi) 1050 mm dia	no	5	798.05	3 990.25
C12.140		vii) 1200 mm dia	no	5	798.05	3 990.25
C12.141		viii) 1500 mm dia	no	1	1 197.08	1 197.08
		MISCELLANEOUS				
		1 Pond sluice gate installation for details - refer drawing 3089.00.00.GZE.03.D001				
C12.142		i) Inlet headwall for 600 mm dia RC pipe. Suitable for pedestal including 90 mm Ø x uPVC sleeve pipe	no	5	14 563.82	72 819.10
C12.143		ii) Outlet headwall for 600 mm dia RC pipe	no	5	13 768.59	68 842.95
C12.144		iii) Outlet headwall for 1 200 mm dia RC pipe	no	1	16 522.31	16 522.31
C12.145		iv) Outlet headwall for 4500 mm dia RC pipe	no	2	27 537.18	55 074.36
C12.146		2 Drop inlet complete with reinforced concrete roof. Refer drawing 3089.30.01.GZC.03.D005	no	3	20 062.64	60 187.92
C12.147		3 Pre-cast catchpit kerb inlet and channel. Complete as shown on drawing.RO-2272/1A	no	7	16 790.38	117 532.66
C12.148		4 300mm wide extra inlet on upstream side of catchpit ref. to note 11	no	10	3 057.39	30 573.90
C12.149		5 Parow transition kerb	no	7	221.82	1 552.74
		BILL NO. C12 **PIPEWORK**				
		Carried forward to Summary of Bills			**Total**	34 233 078.44

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Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C2 - Earthworks and pipework				
		BILL NO. C13 **RIVER PROTECTION**				
		CIVIL WORKS				
		Ref drawing 3089.30.01.GZE.D3.D001				
	SANS 1200 C	**CLEAR SITE**				
	PSC	**CLEAR SITE**				
	8.2.1	(a) Clear and grub area for the following construction activity, and dispose of all material off site at a spoil site established by the Contractor				
C13.1		.2 Along river edge	m²	1000	2.94	2 940.00
	SANS 1200 DM	**CUT OR BORROW TO FILL**				
	PSDM	**CUT OR BORROW TO FILL**				
	8.3.4	(a) Cut or borrow to fill Excavate from river edge embankment, select, load, transport to point of use and fill over site				
C13.2		.2 Compacted to 93% mod AASHTO density	m³	1000	310.40	310 400.00
		COMMERCIAL MATERIAL				
	SANS 1200 DM	**COMMERCIAL MATERIAL**				
		Construct restricted backfilling on river embankment behind gabions with material supplied by the Contractor from commercial sources of the following quality				
	8.3.4	(c) G7 material				
C13.3		.2 Compacted to 98% mod AASHTO density	m³	800	375.73	300 584.00
	SANS 1200 DM	**COMMERCIAL DUMP ROCK**				
		COMMERCIAL DUMP ROCK				
					Carried Forward	613 924.00

					Brought Forward	613 924.00
	8.3.4	(d) Construct dump rock layer with material supplied by the Contractor from commercial sources of suitable size, quality and grading				
C13.4		.1 Dump rock layer 1000mm thick placed in position and compacted with 10 pass 10 ton roller compaction behind sheet piling along river embankment	m³	400	529.80	211 920.00
	SANS 1200 D	**LATERAL SUPPORT/SHORING**				
	PSD	**LATERAL SUPPORT/SHORING** **PERMANENT SHEET SHORING** **Note:** Shoring of excavations will only be measured if this is specifically required by the Engineer for protection of an existing structure or service, that could be damaged due to the excavations. Refer to the Project Specification in this regard.				
	8.3.7.a	Lateral support/shoring Ref drawing 3089.30.01.DET.11.D002 For river embankment stabilization using silent and vibration free shoring technologies				
C13.5		.1 River embankment - maximum depth approximately 5m deep	m²	500	7 206.81	3 603 405.00
	SANS 1200 DK	**GABIONS AND PITCHING**				
	PSDK	**PREPARATION**				
	8.2.1	Surface preparation for bedding of gabions and mattresses				
C13.6		(a) Cavities filled with approved excavated material or rock and compacted to 95% mod AASHTO density	m²	300	67.38	20 214.00
	SANS 1200 DK	**GABIONS AND MATTRESSES (COASTAL)**				
		GABIONS				
	8.2.2.3	Gabions using plastic coated galvanized wire of the following sizes				
C13.7		(a) 2,0 x 1,0 x 1,0m Box of 80mm mesh size	m³	400	1 641.93	656 772.00
	SANS 1200 DK	**GEOTEXTILES**				
		GEOTEXTILES				
					Carried Forward	5 106 235.00

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					Brought Forward	5 106 235.00
	8.2.4	Supply and lay geotextile fabric below gabions and mattresses with suitable overlaps (net area of Bidim will be measured for payment)				
C13.8		(b) Bidim A5	m²	800	11.82	9 456.00
		BILL NO. C13 **RIVER PROTECTION**				
		Carried forward to Summary of Bills			**Total**	5 115 691.00

Build of Civil, Building and Demolition Works for the Upgrade and Expansion of Potsdam WWTP
Contract number: 295Q/2021/22
Section C2.2: Bill of Quantities
Stone traps and inlet canal

Item	Payment Reference	Description	Unit	Qty	Rate (R)	Amount (R)
		PORTION - C				
		REMAINING WORKS				
		C3 - Civil works				
		BILL NO. C14 **STONE TRAPS AND INLET CANAL - WBC** Ref. dwg. 3089.00.00.WBC.14.U001,3089.00.00.SQG.14.U001 and U002				
		CIVIL WORKS				
	SANS 1200 D	**EARTHWORKS**				
	PSD	**RESTRICTED EXCAVATIONS**				
	8.3.3	(a) Restricted excavation in all materials and place within freehaul distance for				
C14.1		.1 Step footings	m³	3	365.86	1 097.58
C14.2		.2 Chambers	m³	110	365.86	40 244.60
C14.3		.3 Channels	m³	53	365.86	19 390.58
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		COMMERCIAL MATERIAL				
	8.3.9	(b) G7 commercial material supplied by the Contractor compacted to 98% mod				
C14.4		.1 Alongside walls in foundations	m³	60	248.89	14 933.40
C14.5		.2 Below floors	m³	35	248.89	8 711.15
	SANS 1200 D	**RESTRICTED BACKFILLING**				
		MATERIAL FROM SITE				
	8.3.9a	Backfill or for fill with selected material from site against structures and compacted to 98% mod AASHTO density				
C14.6		.1 Alongside walls in foundations	m³	60	-	Included
C14.7		.2 Below floors	m³	35	-	Included
	SANS 1200 G	**SOILCRETE**				
	PSG	**SOILCRETE**				
		Soilcrete (5% OPC)				
C14.8	8.4.10	(a) Backfilling behind walls	m³	53	1 191.52	63 150.56
	SANS 1200 G	**ROUGH FORMWORK**				
		ROUGH FORMWORK				
					Carried Forward	147 527.87

					Brought Forward	147 527.87
	8.2.1	(b) Plane vertical				
C14.9		.1 Sides of foundations	m²	21	364.71	7 658.91
	8.2.5	Rough formwork to narrow widths				
C14.10		(a) Edges, risers, etc not exceeding 300mm wide	m	53	364.71	19 329.63
	SANS 1200 G	**SMOOTH FORMWORK**				
		SMOOTH FORMWORK				
	8.2.2	(a) Plane horizontal				
C14.11		.1 Slabs	m²	137	636.15	87 152.55
C14.12		.2 Chamber slabs	m²	74	636.15	47 075.10
	8.2.2	(b) Plane vertical				
C14.13		.3 Walls	m²	1011	364.71	368 721.81
C14.14		.4 Steps	m²	4	364.71	1 458.84
C14.15		.6 Square or rectangular columns	m²	9	364.71	3 282.39
	8.2.5	Smooth formwork to narrow widths				
C14.16		(a) Edges, risers, etc not exceeding 300mm wide	m	105	109.41	11 488.05
C14.17		(b) Circular edges, risers, etc not exceeding 300mm wide	m	11	109.41	1 203.51
C14.18		(c) Set of V-reedings 100mm wide in top of concrete steps	m	11	91.18	1 002.98
C14.19		(d) 700 mm dia opening in roof slab	no	2	364.71	729.42
	8.1.1.2	Smooth formwork to chamfers, grooves, rebates, etc exceeding 25 x 25mm in size				
C14.20		(a) Groove size 120mm wide x 80mm deep	m	20	214.44	4 288.80
C14.21		(b) Rebate size 250mm x 80mm deep in walls	no	8	321.75	2 574.00
		BOXING IN FOR HOLES AND VOIDS				
	8.2.6	(a) Small, circular, up to 0,35m diameter with depth				
C14.22		.1 Over 0m and up to 0,5m	no	2	352.49	704.98
	8.2.6	(b) Small, other shapes, up to 0,1m² in area with depth				
C14.23		.1 Over 0m and up to 0,5m	no	7	432.55	3 027.85
	8.2.6	(c) Large, circular, over 0,35m and up to 1,1m diameter with depth				
C14.24		.1 Over 0m and up to 0,5m	no	6	565.99	3 395.94
					Carried Forward	710 622.63

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					Brought Forward	710 622.63
	8.2.6	(d) Large, other shapes, over 0,1m² up to 0,5m² in area with depth				
C14.25		.2 Over 0m and up to 0,5m	no	2	672.74	1 345.48
	SANS 1200 G	**CASTING IN PIPES THROUGH CONCRETE**				
		SMOOTH FORMWORK				
	8.7	Supply install and remove suitable smooth formwork in small quantities around pipes, etc to insert grout to fix pipes and fittings through concrete walls, etc complete including cleaning and repairing concrete surface to smooth finish after completion				
C14.26		.1 Smooth formwork	m²	53	651.99	34 555.47
		GROUTING				
	8.8	Supply and install approved non-shrink waterproof grout for casting in pipes and fittings complete				
C14.27		.1 Grouting around pipes and fittings	m³	5	21 078.60	105 393.00
	SANS 1200 G	**HDPE LININGS TO STRUCTURES**				
		HDPE LININGS				
		The following HDPE linings is supplied by AKS Lining Systems (Pty) Ltd or other approved similar product.				
		2.5mm Thick HDPE (colour as specified) lining system fixed to formwork face with approved method to enable the lining clips at the back of the sheeting to be cast into the concrete surface. The exposed lining surface is to be cleaned and welded at all joints with an approved method to ensure a watertight surface, as per manufacturers specification, complete with all cutting and waste, cutting around pipes, etc and sealing around pipes, covers, etc with approved sealant (only net exposed surfaces will be paid for)				
	8.13	(a) Plane horizontal				
C14.28		.1 Slabs	m²	280	462.30	129 444.00
	8.13	(b) Plane vertical				
C14.29		.1 Walls straight on plan	m²	1260	462.30	582 498.00
	8.13	(c) Narrow widths not exceeding 300mm wide				
C14.30		.1 Narrow widths	m	120	284.53	34 143.60
	SANS 1200 G	**REINFORCEMENT**				
		ROD REINFORCEMENT				
		Steel bars				
					Carried Forward	1 598 002.18

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					Brought Forward	1 598 002.18
	8.3.1	(a) Mild steel				
C14.31		.1 All sizes	ton	2.0	18 976.98	37 953.96
	8.3.1	(b) High tensile steel				
C14.32		.1 All sizes	ton	42	18 976.98	797 033.16
	SANS 1200 G	**CONCRETE**				
	PSG	**STRENGTH CONCRETE**				
	8.4.2	Strength concrete 15Mpa/19mm				
C14.33		(a) Blinding layer 50mm thick	m³	19	1 857.71	35 296.49
	8.4.3	(c) Strength concrete 35Mpa/19mm				
C14.34		.2 Columns	m³	1	1 978.65	1 978.65
C14.35		.3 Stairs	m³	2	1 978.65	3 957.30
	SANS 1200 G	**WATERPROOF CONCRETE**				
	8.4.3	(d) Waterproof strength concrete 35Mpa/19mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C14.36		.1 Roof slabs	m³	42	2 199.02	92 358.84
C14.37		.3 Floor slabs	m³	85	2 199.02	186 916.70
C14.38		.4 Walls	m³	160	2 199.02	351 843.20
	8.4.3	(f) Waterproof strength concrete 20Mpa/13mm including waterproofing additive all in accordance with the manufacturers specifications as specified in the attached specifications				
C14.39		.1 Benching to floors to falls including steel floated surface finish	m³	21	2 055.78	43 171.38
	SANS 1200 G	**SURFACE FINISHES**				
		SURFACE FINISHES				
		Unformed surface finishes				
	8.4.4	(b) Steel floated finish				
C14.40		.1 Floor slabs	m²	498	19.44	9 681.12
C14.41		.2 Top of walls, beams, etc	m²	69	19.44	1 341.36
	SANS 1200 G	**ACID RESISTING FINISHES**				
		CONCRETE PROTECTION AND FLOOR COATINGS				
					Carried Forward	3 159 534.34

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					Brought Forward	3 159 534.34
	8.4.11	Sikafloor 263 SL ZA or other approved self smoothing (a) epoxy finish applied to manufacturers specification including all preparation, etc				
C14.42		i) 3 mm Thick to concrete floors and walls	m²	150	677.25	101 587.50
	SANS 1200 G	**EXPANSION JOINTS**				
		EXPANSION JOINTS				
	8.5	(a) 12mm Thick jointex placed vertically between concrete				
C14.43		.1 Expansion joint in walls and floors	m²	11	118.25	1 300.75
C14.44		.4 Narrow widths not exceeding 300mm wide	m	21	35.48	745.08
		JOINT SEALER				
	8.5	(b) Polyurethane joint sealer				
C14.45		.1 Remove 12 x 12mm tear off strip, prime with an approved primer and fill joint with polyurethane sealer	m	53	153.31	8 125.43
	8.5	(c) Saw cut joints				
C14.46		.1 4 x 40mm Deep saw cut joint in floor slabs	m	20	136.11	2 722.20
		SUNDRIES				
		CONCRETE SUNDRIES				
C14.47		.1 Scabble surface of concrete to create rough texture for adhesion of new concrete benching	m²	11	206.25	2 268.75
C14.48		.2 Demolish existing concrete elements where joining onto existing structures and cut reinforcing and soil material off site	m³	11	4 048.56	44 534.16
C14.49		.3 Apply approved non schrink grout for adhesion of new concrete to existing concrete not exceeding 50mm thick	m²	11	1 339.24	14 731.64
C14.50		.4 Box out sufficiently around 600 mm dia CI pipe and safeguard during construction as shown on dwg. 3089.00.00.SQG.14.U001	no	6	3 460.42	20 762.52
C14.51		.5 Cut CI pipe after commissioning of chamber, repair ends for closing of openings Note: watertight closure of pipe openings measured elsewhere	no	4	4 124.90	16 499.60
C14.52		.6 Construct circular 230 mm thick stockbrick surround on top of slab, plastered both side with heavy duty MH cover and frame set in concrete surround	no	2	5 115.92	10 231.84
	SANS 1200 G	**TESTING**				
					Carried Forward	3 383 043.81

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					Brought Forward	3 383 043.81
		TESTING FOR WATER TIGHTNESS				
C14.53	8.12	Testing entire structure for water tightness **BILL NO. C14**	no	1	19857.57	19 857.57
		STONE TRAPS AND INLET CANAL - WBC				
		Carried forward to Summary of Bills			**Total**	3 402 901.38

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