## KNYSNA MUNICIPALITY

REQUEST FOR QUOTATION RFQ 291/2017/18

KNYSNA BOREHOLE E8 - CIVIL INSTALLATION NO.3

### EMPLOYER

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<thead>
<tr>
<th>Address</th>
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<tbody>
<tr>
<td>P O Box 21</td>
</tr>
<tr>
<td>Knysna</td>
</tr>
<tr>
<td>6570</td>
</tr>
</tbody>
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### EMPLOYER’S AGENT

<table>
<thead>
<tr>
<th>Address</th>
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<tbody>
<tr>
<td>P O Box 434</td>
</tr>
<tr>
<td>George</td>
</tr>
<tr>
<td>6530</td>
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</tbody>
</table>

### SUMMARY FOR QUOTATION OPENING PURPOSES

(In the event of any conflict between the Summary and that given in the Quotation, the latter shall apply)

<table>
<thead>
<tr>
<th>Name of Bidder</th>
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<th>Telephone Number</th>
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<th>Fax Number</th>
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<th>Time for Completion</th>
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<tr>
<td>................................................................. Weeks</td>
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### QUOTATION CLOSES: 12H00 ON 23 FEB 2018
<table>
<thead>
<tr>
<th>CONTACT DETAILS OF TENDERER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knysna Municipality Supplier number</td>
</tr>
<tr>
<td>CSD Supplier number</td>
</tr>
<tr>
<td>CSD Unique Registration Reference Number</td>
</tr>
<tr>
<td>The name of the Tenderer:</td>
</tr>
<tr>
<td>The name of the contact person:</td>
</tr>
<tr>
<td>The address of the Tenderer:</td>
</tr>
<tr>
<td>Telephone:</td>
</tr>
<tr>
<td>Facsimile:</td>
</tr>
<tr>
<td>E-mail:</td>
</tr>
<tr>
<td>Address (physical):</td>
</tr>
<tr>
<td>Address (postal):</td>
</tr>
<tr>
<td>Signature:</td>
</tr>
<tr>
<td>Date:</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

**SECTION Q:** PROCEDURES AND RETURNABLE DOCUMENTS ........................................... 1

**Q1** QUOTATION PROCEDURES ................................................................................. 3

Q1.1 NOTICE AND INVITATION TO QUOTE ........................................................... 3

Q1.2 QUOTATION DATA ......................................................................................... 5

Q1.2.1 EVALUATION ........................................................................................... 5

**Q2** RETURNABLE DOCUMENTS ............................................................................ 6

Q2.1 LIST OF RETURNABLE DOCUMENTS ......................................................... 6

Q2.2.1 RETURNABLE SCHEDULES AND FORMS ........................................... 6

**SECTION C:** CONTRACT ....................................................................................... 17

C1 AGREEMENTS AND CONTRACT DATA.............................................................. 19

C1.1 FORM OF OFFER AND ACCEPTANCE ......................................................... 19

C1.2 CONTRACT DATA ........................................................................................ 23

C2 PRICING DATA .................................................................................................. 26

C2.1 PRICING INSTRUCTIONS .............................................................................. 26

C2.1.1 GENERAL .............................................................................................. 26

C2.1.2 DESCRIPTION OF ITEMS IN THE SCHEDULE ................................... 26

C2.1.3 QUANTITIES REFLECTED IN THE SCHEDULE .................................. 26

C2.1.4 PROVISIONAL SUMS ............................................................................ 26

C2.1.5 PRICING OF THE BILL OF QUANTITIES ............................................. 26

C2.1.6 CORRECTION OF ENTRIES .................................................................. 27

C2.1.7 ARITHMETICAL ERRORS ....................................................................... 27

C2.1.8 MONTHLY PAYMENTS .......................................................................... 27

C2.1.9 UNITS OF MEASUREMENT .................................................................... 28

C2.2 BILL OF QUANTITIES ................................................................................... 29

C3 SCOPE OF WORK ............................................................................................... 34

C3.1 DESCRIPTION OF THE WORKS .................................................................... 34

C3.1.1 EMPLOYERS OBJECTIVES .................................................................... 34

C3.1.2 SCOPE OF CONTRACT .......................................................................... 34

C3.1.3 LOCATION OF THE WORKS ................................................................... 34

C3.1.4 TEMPORARY WORKS ............................................................................ 34

C3.2 ENGINEERING ............................................................................................... 35

C3.2.1 EMPLOYER'S DESIGN .......................................................................... 35

C3.2.2 DESIGN BRIEF ...................................................................................... 35

C3.2.3 DRAWINGS ............................................................................................ 35

C3.3 CONSTRUCTION ............................................................................................. 36

C3.3.1 WORKS SPECIFICATIONS ..................................................................... 36

C3.4 FACILITIES ..................................................................................................... 36

C3.4.1 PLANT AND MATERIALS SUPPLIED BY THE EMPLOYER ............... 37

C3.4.2 EQUIPMENT SUPPLIED BY THE EMPLOYER ................................. 37

C3.4.3 SITE ESTABLISHMENT .......................................................................... 37

C3.4.4 SITE USAGE ........................................................................................... 38

C3.5 MANAGEMENT ................................................................................................. 40

C3.5.1 MANAGEMENT OF THE WORKS .......................................................... 40

C3.5.2 HEALTH AND SAFETY ......................................................................... 41

C3.6 SPECIFICATIONS ............................................................................................ 42

C3.6.1 PREFACE ON INTERIM SITUATION ....................................................... 42

C3.6.2 LIST OF PROJECT SPECIFICATIONS ................................................... 42

C3.6.3 VARIATIONS AND ADDITIONS TO THE STANDARDIZED SPECIFICATIONS FOR THIS CONTRACT, AND PARTICULAR SPECIFICATIONS ......................................................... 43

C4 SITE INFORMATION ............................................................................................ 63

C4.1 LOCATION OF THE WORKS .......................................................................... 63

C4.2 ACCESS TO THE WORKS .............................................................................. 63
RFQ 291/2017/18: KNYSNA BOREHOLE E8 - CIVIL INSTALLATION NO.3

C4.3 CLIMATE.................................................................63
C4.4 GEOTECHNICAL INFORMATION........................................63
C4.5 DRAWINGS..............................................................64
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KNYSNA MUNICIPALITY

RFQ 291/2017/18

KNYSNA BOREHOLE E8 - CIVIL INSTALLATION NO.3

SECTION Q: PROCEDURES AND RETURNABLE DOCUMENTS

Q1 Quote Procedures
Q2 Returnable Documents
# Quotation Procedures

## Notice and Invitation to Quote

(For publication on the Knysna Municipality website & notice boards)

<table>
<thead>
<tr>
<th>ADVERTISEMENT DATE:</th>
<th>16 FEB 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFQ NUMBER:</td>
<td>RFQ 291/2017/18</td>
</tr>
<tr>
<td>DESCRIPTION OF GOODS/SERVICES:</td>
<td>KNYSNA BOREHOLE E8 - CIVIL INSTALLATION NO.3</td>
</tr>
<tr>
<td>RFQ DOCUMENTS ARE OBTAINABLE FROM:</td>
<td>Supply Chain Management Section Clyde Street Knysna or Knysna Municipality website: <a href="http://www.knysna.gov.za">www.knysna.gov.za</a> (Council adverts &gt;Quotations)</td>
</tr>
<tr>
<td>CLOSING DATE:</td>
<td>23 FEB 2018</td>
</tr>
<tr>
<td>TIME:</td>
<td>12:00</td>
</tr>
</tbody>
</table>
| SUBMISSIONS:        | Sealed quotations clearly marked, “RFQ 291/2017/18 KNYSNA BOREHOLE E8 - CIVIL INSTALLATION NO.3”, can be submitted:  
  - By hand to: Supply Chain Management Section Knysna Municipality Clyde Street Knysna  
  - By fax to: 086 650 1415  
  - By email to: procurement@knysna.gov.za  
  Contact person: Sandra Fourie (Tel: 044 302 6328) Electronic bid documents must reach the Supply Chain Management Section before the closing time. |
| COMPULSORY REQUIREMENTS: | Minimum functionality score, and MBD 6.1 and MDB 4 forms must be completed. |
| TECHNICAL ENQUIRIES: |  
  - Department: Technical Services  
  - Contact Person: Rhoydon Parry  
  - Email: rparry@knysna.gov.za  
  - Tel: 044 302 6300  
  - Employer’s Agent: Royal HaskoningDHV  
  - Contact Person: Keith Turner  
  - Email: keith.turner@rhdhv.com  
  - Tel: 082 491 1562  
  The following conditions will apply:  
  - Price(s) quoted must be firm and must be inclusive of VAT when applicable.  
  - Attached MBD 6.1 must be completed to qualify for B-BBEE Status Level of Contribution.  
  - Tax Clearance Certificate or Sufficient Evidence that Tax matters are raised with SARS must be attached.  
  - An original or certified copy of B-BBEE Certificate must be attached to qualify for points.  
  - Price must include all related expenses, i.e. transport, accommodation etc.  
  - Attached MBD 4 document must be completed.  
  - Status of Municipal accounts must be submitted (attached MBD 15 form).  
  - More than 1 supplier could be appointed.  
  - Invoices must be submitted to jcordier@knysnagov.za and will be paid within 30 days of delivering the service.  
  - Only an Official order and appointment letter will bind the Council. |

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**Municipal Manager**  
KAM CHETTY  

*The Knysna Municipality is implementing an online purchasing management system. This system allows vendors to register online, receive automated alerts via e-mail and will eventually allow vendors to submit bids electronically. All opportunities >R30 000 (RFQ’s and Tenders) are processed through our online system. To register go to www.knysna.gov.za – Council adverts – Supply Chain Management – SCM e-mail list – complete info and click on submit form. Enquiries may be directed to: nmlisana@knysna.gov.za*
Q1.2 QUOTATION DATA

Q1.2.1 EVALUATION

All bids will be evaluated by a panel on basis of Functionality and Price using the 80/20 system.

The points scored for Functionality will not be carried over to price, but will be used as a functionality gateway to reach the next stage of evaluation.

The final evaluation will be done in terms of the Council’s Preferential Procurement Policy which states 80 points for price and the remaining 20 points for B-BBEE level.

Point’s allocation for Functionality

1. Company experience on similar works with references to previous experiences. (9 points)
2. Experience of key staff. One page maximum CV to be submitted per key staff. (6 points)
3. List of contactable references of similar municipal services previously provided. (5 points)

EVALUATION SCHEDULE

NOTE: Your pricing schedule will not be considered if this table is not completed

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Scoring criteria</th>
<th>Points Claimed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide company profile, history, years of experience.</td>
<td>Years (points)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 – 2 (3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 – 4 (6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 + (9)</td>
<td></td>
</tr>
<tr>
<td>Experience of key staff: Contracts manager (CM) Site agent (SA) Foreman (FM)</td>
<td>Years (points per key staff)</td>
<td></td>
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<tr>
<td></td>
<td>3 – 4 (1)</td>
<td></td>
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<tr>
<td></td>
<td>5 + (2)</td>
<td></td>
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<tr>
<td></td>
<td>(Max. 6 points)</td>
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<tr>
<td>Provide a list of contactable references of similar municipal services previously provided</td>
<td>1 ref (1)</td>
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<tr>
<td></td>
<td>2 refs (2)</td>
<td></td>
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<tr>
<td></td>
<td>3 refs (3)</td>
<td></td>
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<td>4 refs (4)</td>
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<td></td>
<td>5 refs (5)</td>
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<tr>
<td>Total</td>
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<td>20</td>
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Tenderers must achieve a minimum of 13 points in order to qualify for further evaluation on price and preference points
Q2
RETURNABLE DOCUMENTS

Q2.1
LIST OF RETURNABLE DOCUMENTS

The following is a list of the Returnable Documents:

1. All the forms and agreements in the Contract data in C1.2, where some of the forms (agreements) need to be completed only by successful Bidder;


Q2.2.1
RETURNABLE SCHEDULES AND FORMS

A  Experience of Bidder
B  Experience of Key Staff
MBD 4 Declaration of Interest
MBD 6.1 Preferential Procurement Schedule and Affidavit
MBD 15 Certificate of Payment of Municipal Services

The Bidder is required to complete all schedules and forms listed above to the best of his ability as the evaluation of tenders and the eventual contract will be based on the information provided by the Bidder. Failure of a Bidder to complete the schedules and forms to the satisfaction of the Employer will prejudice the tender and may lead to rejection on the grounds that the tender is not responsive.
A. **Experience of Bidder**

The following is a statement of work of similar nature in the past 5 years successfully executed by myself/ourselves:

<table>
<thead>
<tr>
<th>Employer: Contact Person and Telephone Number</th>
<th>Consulting Engineer: Contact Person and Telephone Number</th>
<th>Nature of Work</th>
<th>Value of Work (Incl VAT)</th>
<th>Completion Date or Expected Completion Date</th>
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</tbody>
</table>

SIGNATURE: ..............................................…...

DATE: ...........................................

(of person authorised to sign on behalf of the Bidder)
B. Experience of Key Staff

The following is a list of our proposed staff (NB: attach one page CV for each key staff member):

<table>
<thead>
<tr>
<th>Name</th>
<th>Highest Qualification</th>
<th>Relevant Experience</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

SIGNATURE: .............................................. …… DATE: …........................

(of person authorised to sign on behalf of the Bidder)
## MBD 4
### DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state¹.

2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.

3. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

### Part Q2: Returnable Documents

#### Returnable Schedules and Forms

1. **Full Name of bidder or his or her representative:**

2. **Identity Number:**

3. **Position occupied in the Company (director, trustee, shareholding):**

4. **Company Registration Number:**

5. **Tax Reference Number:**

6. **VAT Registration Number:**

7. The names of all directors / trustees / shareholders members, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below.

8. **Are you presently in the service of the state?**
   - YES
   - NO

8.1 If yes, furnish particulars:

9. **Have you been in the service of the state for the past twelve months?**
   - YES
   - NO

9.1 If yes, furnish particulars:

10. **Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved the evaluation and or adjudication of this bid?**
    - YES
    - NO

10.1 If yes, furnish particulars:

11. **Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid?**
    - YES
    - NO

11.1 If yes, furnish particulars:

12. **Are any of the company’s directors, trustees, managers, principle shareholders or stakeholders in service of the state?**
    - YES
    - NO

12.1 If yes, furnish particulars:
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.13</td>
<td>Are any spouse, child or parent of the company’s directors, trustees, managers, principle shareholders or stakeholders in service of the state?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>3.13.1</td>
<td>If yes, furnish particulars:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.14</td>
<td>Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>3.14.1</td>
<td>If yes, furnish particulars:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution.

**NB:**
BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.

### 1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:
- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 The value of this bid is estimated not to exceed R200 000 (all applicable taxes included) and therefore the 80/20 system shall be applicable.

1.3 Preference points for this bid shall be awarded for:
- **(a) Price;** and
- **(b) B-BBEE Status Level of Contribution.**

1.3.1 The maximum points for this bid are allocated as follows:

<table>
<thead>
<tr>
<th>POINTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3.1.1 Price</td>
<td>80</td>
</tr>
<tr>
<td>1.3.1.2 B-BBEE status level of contribution</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total points for Price and B-BBEE must not exceed</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

1.4 Failure on the part of a bidder to fill in and/or to sign this form and submit a B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System (SANAS) or a Registered Auditor approved by the Independent Regulatory Board of Auditors (IRBA) or an Accounting Officer as contemplated in the Close Corporation Act (CCA) together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

1.5. The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

### 2. DEFINITIONS

2.1 **“all applicable taxes”** includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;

2.2 **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;

2.3 **“B-BBEE status level of contributor”** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;

2.4 **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;

2.5 **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);

2.6 **“comparative price”** means the price after the factors of a non-firm price and all unconditional discounts that can be utilized have been taken into consideration;
“consortium or joint venture” means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract; 2.8 “contract” means the agreement that results from the acceptance of a bid by an organ of state; 2.9 “EME” means any enterprise with an annual total revenue of R5 million or less; 2.10 “firm price” means the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract; 2.11 “functionality” means the measurement according to predetermined norms, as set out in the bid documents, of a service or commodity that is designed to be practical and useful, working or operating, taking into account, among other factors, the quality, reliability, viability and durability of a service and the technical capacity and ability of a bidder; 2.12 “non-firm prices” means all prices other than “firm” prices; 2.13 “person” includes a juristic person; 2.14 “rand value” means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties; 2.15 “total revenue” bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act and promulgated in the Government Gazette on 9 February 2007; 2.16 “trust” means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person; and 2.17 “trustee” means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

3. ADJUDICATION USING A POINT SYSTEM
3.1 The bidder obtaining the highest number of total points will be awarded the contract.
3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts; 3.3 Points scored must be rounded off to the nearest 2 decimal places.
3.4 In the event that two or more bids have scored equal total points, the successful bid must be the one scoring the highest number of preference points for B-BBEE.
3.5 However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for B-BBEE, the successful bid must be the one scoring the highest score for functionality.
3.6 Should two or more bids be equal in all respects, the award shall be decided by the drawing of lots.

4. POINTS AWARDED FOR PRICE
4.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS
A maximum of 80 or 90 points is allocated for price on the following basis:

$$Ps = \begin{cases} 80 \left(1 - \frac{Pt - P\text{min}}{P\text{min}}\right) & \text{or} \\ 90 \left(1 - \frac{Pt - P\text{min}}{P\text{min}}\right) \end{cases}$$

Where

$Ps$ = Points scored for comparative price of bid under consideration

$Pt$ = Comparative price of bid under consideration

$P\text{min}$ = Comparative price of lowest acceptable bid
5. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION

5.1 In terms of Regulation 5 (2) and 6 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

<table>
<thead>
<tr>
<th>B-BBEE Status Level of Contributor</th>
<th>Number of points (90/10 system)</th>
<th>Number of points (80/20 system)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>18</td>
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<td>3</td>
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<td>14</td>
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<td>4</td>
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<td>12</td>
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<td>5</td>
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<td>8</td>
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<td>6</td>
<td>3</td>
<td>6</td>
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<tr>
<td>7</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Non-compliant contributor</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

5.2 Bidders who qualify as EMEs in terms of the B-BBEE Act must submit a certificate issued by an Accounting Officer as contemplated in the CCA or a Verification Agency accredited by SANAS or a Registered Auditor. Registered auditors do not need to meet the prerequisite for IRBA’s approval for the purpose of conducting verification and issuing EMEs with B-BBEE Status Level Certificates.

5.3 Bidders other than EMEs must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.

5.4 A trust, consortium or joint venture, will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate.

5.5 A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid.

5.6 Tertiary institutions and public entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.

6. BID DECLARATION

6.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

6.1.2 B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.3.1.2 AND 5.1

| 6.1.2.1 B-BBEE Status Level of Contribution as reflected on the B-BBEE Certificate |
| 6.1.2.2 Points claimed in respect of Level of Contribution (maximum of 10 or 20 points) |

Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 5.1 and must be substantiated by means of a B-BBEE certificate issued by a Verification Agency accredited by SANAS or a Registered Auditor approved by IRBA or an Accounting Officer as contemplated in the CCA.
7. **SUB-CONTRACTING**

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1. Will any portion of the contract be sub-contracted? <em>(Tick applicable box)</em></td>
<td></td>
<td></td>
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<tr>
<td>7.1.1. If yes, indicate:</td>
<td></td>
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<tr>
<td>7.1.1.1. what percentage of the contract will be subcontracted?</td>
<td></td>
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<tr>
<td>7.1.1.2. the name of the sub-contractor?</td>
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<tr>
<td>7.1.1.3. the B-BBEE status level of the sub-contractor?</td>
<td></td>
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</tr>
<tr>
<td>7.1.1.4. whether the sub-contractor is an EME? <em>(Tick applicable box)</em></td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>

8. **DECLARATION WITH REGARD TO COMPANY/FIRM**

<table>
<thead>
<tr>
<th>Section</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1</td>
<td>Name of Company / Firm</td>
</tr>
<tr>
<td>8.2</td>
<td>VAT Registration number</td>
</tr>
<tr>
<td>8.3</td>
<td>Company Registration number</td>
</tr>
<tr>
<td>8.4</td>
<td>Type of Company / Firm <em>(Tick Applicable Box)</em></td>
</tr>
<tr>
<td>8.5</td>
<td>Describe Principal Business Activities</td>
</tr>
<tr>
<td>8.6</td>
<td>Company Classification <em>(Tick Applicable Box)</em></td>
</tr>
<tr>
<td>8.7</td>
<td>TOTAL NUMBER OF YEARS THE ENTERPRISE HAS BEEN IN BUSINESS</td>
</tr>
</tbody>
</table>
9. DECLARATION

9. I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraph 7 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

(i) The information furnished is true and correct;
(ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form.
(iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 7, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
(iv) If the B-BBEE status level of contribution has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
   (a) disqualify the person from the bidding process;
   (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
   (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation
   (d) restrict the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
   (e) forward the matter for criminal prosecution

<table>
<thead>
<tr>
<th>NAME OF BIDDER</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNATURE</td>
<td></td>
</tr>
<tr>
<td>WITNESS 1</td>
<td>WITNESS 2</td>
</tr>
<tr>
<td>WITNESS 1</td>
<td></td>
</tr>
<tr>
<td>DATE</td>
<td>DATE</td>
</tr>
</tbody>
</table>
RFQ 291/2017/18: KNYSNA BOREHOLE E8 - CIVIL INSTALLATION NO.3

MBD 15
Certificate for Payment of Municipal Services

NAME OF THE BIDDER: ____________________________________________

FURTHER DETAILS OF THE BIDDER’S; Director / Shareholder / Partners, etc:

<table>
<thead>
<tr>
<th>Director / Shareholder / partner</th>
<th>Physical address of the Business</th>
<th>Municipal Account number(s)</th>
<th>Physical residential address of the Director / shareholder / partner</th>
<th>Municipal Account number(s)</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

NB: Please attach certified copy (ies) of ID document(s)

I, ________________________________, the undersigned, certify that the information furnished on this declaration form is correct and that I / we have no undisputed commitments for municipal services towards a municipality in respect of which payment is overdue for more than 90 days.

If the value of the transaction is expected to exceed R10 million (VAT included) I certify that the bidder has no undisputed commitments for municipal services towards a Municipality in respect of which payment is overdue for more than 30 days;

THUS DONE AND SIGNED for and on behalf of the Bidder, at ___________________________ , on the ______________ day of ______________ 20______.

Number of sheets appended by the tenderer to this schedule (If nil, enter NIL)

<table>
<thead>
<tr>
<th>SIGNATURE:</th>
<th>NAME (PRINT):</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CAPACITY:</th>
<th>NAME OF FIRM: OF</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
</tbody>
</table>

For office use (comments):
SECTION C: CONTRACT

C1  Agreement and Contract Data
C2  Pricing Data
C3  Scope of Works
C4  Site Information
Page Intentionally Blank
A. OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the Knysna Borehole E8 – Civil Installation No.3.

The Bidder, identified in the offer signature block below, 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 Bidder, deemed to be duly authorised, signing this part of this form of offer and acceptance, the Bidder 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:

R................................... (In words...........................................................................................

.......................................................... ..........................................................)

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 Bidder before the end of the period of validity stated in the Tender Data, whereupon the Bidder becomes the party named as the Contractor in the Conditions of Contract identified in the contract data.

Signature: (of person authorised to sign the tender):..............................................................................

Name: (of signatory in capitals): .......................................................... ..........................................................

Capacity: (of Signatory): .................................................................................................................................

Name of Bidder: (organisation):...........................................................................................................................

Address: ............................................................................................................................................................

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

Telephone number: ...................................... Fax number: ..........................................................

Witness: 

Signature: ..................................................................................................................

Name: (in capitals): ..........................................................................................................................

Date: ..........................................................
B. ACCEPTANCE

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

The terms of the contract are contained in
- Part 1 Agreement, and Contract Data, (which include this Agreement),
- Part 2 Pricing Data,
- Part 3 Scope of Work,
- Part 4 Site Information,

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

Deviations from and amendments to the documents listed in the tender data and any addenda thereto listed in the tender schedules as well as any changes to the terms of the Offer agreed by the Bidder and the Employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this schedule, which must be duly signed by the authorised representatives of both parties.

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

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

Signature: ..............................................................................................................

Name: (in capitals) ........................................................................................................

Capacity: ......................................................................................................................

Name of Employer: (organisation) ...................................................................................

Address:........................................................................................................................

Witness:

Signature: ......................................................................................................................

Name: (in capitals): .......................................................... Date: .........................................
C. SCHEDULE OF DEVIATIONS

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

1. Subject: .................................................................
   Details: .....................................................................
   ............................................................................

2. Subject: .................................................................
   Details: .....................................................................
   ............................................................................

3. Subject: .................................................................
   Details: .....................................................................
   ............................................................................

4. Subject: .................................................................
   Details: .....................................................................
   ............................................................................

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Bidder agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, as well as any confirmation, clarification or change to the terms of the offer agreed by the Bidder 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 Bidder of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this Agreement.
RFQ 291/2017/18: KNYSNA BOREHOLE E8 - CIVIL INSTALLATION NO.3

FOR THE BIDDER
Signature: ____________________________
Name: ______________________________
Capacity: ____________________________
Bidder (name and address of organisation): __________________________________________________________________________
Witness: __________________________________________________________________________

Signature: ____________________________
Name: ______________________________
Date: ________________________________

FOR THE EMPLOYER
Signature: ____________________________
Name: ______________________________
Capacity: ____________________________
Bidder (name and address of organisation): __________________________________________________________________________
Witness: __________________________________________________________________________

Signature: ____________________________
Name: ______________________________
Date: ________________________________
C.1.2 CONTRACT DATA

Part 1: Contract Data Provided by the Employer

The Conditions of Contract are the General Conditions of Contract for Construction Works (GCC 2015). Copies of these conditions of contract may be obtained from the South African Institution of Civil Engineering (tel 011 805 5947) or the South African Association of Consulting Engineers (tel 011 463 2022). A copy of the above-mentioned General Conditions of Contract may be inspected at the offices of the Employer’s Agent. Bidders shall however obtain copies for their own use.

CONTRACT-SPECIFIC DATA

The following contract-specific data, referring to the General Conditions of Contract, are applicable to this Contract:

Compulsory Data:

<table>
<thead>
<tr>
<th>Clause</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1.13</td>
<td>The Defects Liability Period is <strong>180</strong> days</td>
</tr>
<tr>
<td>1.1.1.14</td>
<td>The time for achieving Practical Completion is <strong>2 weeks</strong> from the Commencement Date.</td>
</tr>
<tr>
<td>1.1.1.15</td>
<td>The name of the Employer is Knysna Municipality</td>
</tr>
<tr>
<td>1.1.1.26</td>
<td>The Pricing Strategy of a Bill of Quantities shall apply</td>
</tr>
<tr>
<td>1.2.1.2</td>
<td>The address of the Employer is:</td>
</tr>
<tr>
<td></td>
<td>Physical address: 5 Church Street Knysna 6570</td>
</tr>
<tr>
<td></td>
<td>Postal address: P O Box 21 Knysna 6570</td>
</tr>
<tr>
<td></td>
<td>e-mail address: <a href="mailto:sfourie@knysna.gov.za">sfourie@knysna.gov.za</a></td>
</tr>
<tr>
<td></td>
<td>Contact numbers: Corporate: +27 (0) 44 302 6300 Direct: +27 (0) 44 302 6328</td>
</tr>
<tr>
<td>1.1.1.16</td>
<td>The name of the Engineer is: Royal HaskoningDHV</td>
</tr>
<tr>
<td>1.2.1.2</td>
<td>The address of the Engineer is:</td>
</tr>
<tr>
<td></td>
<td>Physical address: Suite 101, Bloemhof Building 65 York Street George 6530</td>
</tr>
<tr>
<td></td>
<td>Postal address: P O Box 434 George 6530</td>
</tr>
<tr>
<td></td>
<td>e-mail address: <a href="mailto:george@rhdhv.co.za">george@rhdhv.co.za</a></td>
</tr>
<tr>
<td></td>
<td>Contact numbers: Direct: +27 (0) 44 802 0600</td>
</tr>
<tr>
<td>6.10.1.5</td>
<td>The percentage advance on materials not yet built into the Permanent Works is <strong>80%</strong>.</td>
</tr>
<tr>
<td>6.10.3</td>
<td>The limit of retention money is <strong>10%</strong>.</td>
</tr>
</tbody>
</table>
C.1.2 Contract Data

Part 2: Data provided by the Contractor

THE CONTRACTOR IS ADVISED TO READ THE GENERAL CONDITIONS OF CONTRACT, AS SPECIFIED IN PART 1, IN ORDER TO UNDERSTAND THE IMPLICATIONS OF THIS DATA WHICH IS REQUIRED TO BE COMPLETED.

Each item of data given below is cross-referenced to the clause in the Conditions of Contract to which it mainly applies.

<table>
<thead>
<tr>
<th>Clause</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1.9</td>
<td>The Name of the Contractor is ..........................................................</td>
</tr>
<tr>
<td>1.2.1.2</td>
<td>The address of the Contractor is:</td>
</tr>
<tr>
<td></td>
<td>Physical address: ..........................................................</td>
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<td></td>
<td>..........................................................</td>
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<td>..........................................................</td>
</tr>
</tbody>
</table>
| | ..........................................................
| | Postal address: .......................................................... |
| | .......................................................... |
| | .......................................................... |
| | .......................................................... |
| | e-mail address: ........................................................................ |
| | Contact numbers: Corporate: ............................................. |
| | Direct: .......................................................... |
| | Mobile: .......................................................... |
| 6.2.1 | The security to be provided by the Contractor shall be one of the following: |
| | Type of security | Indicate "Yes" or "No" |
| | (with Value Added Tax excluded from the Contract Sum and from the value of the Works for calculating the percentages) | |
| | Retention of 10% of the value of the Works. | Yes |
| 6.8.2 | Contract price adjustment will NOT apply to this contract |
The variation in cost of special materials is

<table>
<thead>
<tr>
<th>Type of special material</th>
<th>Unit</th>
<th>Rate</th>
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</tbody>
</table>
C2 PRICING DATA

C2.1 PRICING INSTRUCTIONS

C2.1.1 GENERAL

The Bill of Quantities forms part of the Contract Documents and must be read and priced in conjunction with all the other documents comprising the Contract Documents, which include the Tender Data, Contract Data, the Scope of Work (including the Project and Particular Specification) and the Drawings.

C2.1.2 DESCRIPTION OF ITEMS IN THE SCHEDULE

The Bill of Quantities has been drawn up generally in accordance with Civil Engineering Quantities 1990 issued by the SA Institution of Civil Engineers.

The short descriptions of the items in the Bill of Quantities are for identification purposes only and the measurement and payment clause of the Standardised Specifications and the Particular Specifications, read together with the relevant clauses of the Project Specification and directives on the drawings, set out what ancillary or associated work and activities are included in the rates for the operations specified.

C2.1.3 QUANTITIES REFLECTED IN THE SCHEDULE

All quantities given in the Bill of Quantities are provisional whether so marked as such or not, and are subject to re-measurement during the execution of the work. The Contractor shall obtain the Engineer’s detailed instructions for all work before ordering any materials or executing work or making arrangements for it.

The Works as finally completed in accordance with the Contract shall be measured and paid for as specified in the Bill of Quantities and in accordance with the General and Special Conditions of Contract, the Specifications and Project Specifications and the Drawings. Unless otherwise stated, items are measured net in accordance with the Drawings, and no allowance has been made for waste.

The validity of the contract will in no way be affected by differences between the quantities in the Bill of Quantities and the quantities finally certified for payment.

C2.1.4 PROVISIONAL SUMS

Where Provisional sums or Prime Cost sums are provided for items in the Bill of Quantities, payment for the work done under such items will be made in accordance with Clause 6.6 of the General Conditions of Contract 2015. The Employer reserves the right, during the execution of the works, to adjust the stated amounts upwards or downwards according to the work actually done under the item, or the item may be omitted altogether, without affecting the validity of the Contract.

The Tenderer shall not under any circumstances whatsoever delete or amend any of the sums inserted in the “Amount” column of the Bill of Quantities and in the Summary of the Bill of Quantities unless ordered or authorised in writing by the Employer before closure of tenders. Any unauthorised changes made by the Tenderer to provisional items in the schedule, or to the provisional percentages and sums in the Summary of the Bill of Quantities, will be treated as arithmetical errors.

C2.1.5 PRICING OF THE BILL OF QUANTITIES

The prices and rates to be inserted by the Tenderer in the Bill of Quantities shall be the full inclusive prices to be paid by the Employer for the work described under the several items, and shall include full compensation for all costs and expenses that may be required in and for the completion and maintenance during the defects liability period of all the work described and shown on the drawings, the construction of temporary works as and when required as well as all overheads, profits, incidentals and the cost of all general risks, liabilities and obligations set forth or implied in the documents on which the Tender is based.
Although the Tenderer is at liberty to insert a rate of his own choosing for each item in the Bill of Quantities, his attention is drawn to the fact that the Contractor has the right, under various circumstances, to payment for additional works carried out and that the Engineer is obliged to base his assessment of the payment to be paid for such additional work on the rates inserted in the Bill by the Contractor.

Each item shall be priced and extended to the “Total” column by the Tenderer, with the exception of the items for which only rates are required, or items which already have Prime Cost or Provisional Sums affixed thereto. If the Contractor omits to price any items in the Bill of Quantities, then these items will be considered to have a nil rate or price.

All items for which terminology such as "inclusive" or "not applicable" have been added by the Tenderer will be regarded as having a nil rate which shall be valid irrespective of any change in quantities during the execution of the Contract.

The Tenderer shall fill in rates for all items where the words "rate only" appear in the “Total” column. “Rate Only” items have been included where:

(a) an alternative item or material is contemplated;
(b) variations of specified components in the make-up of a pay item may be expected; and
(c) no work under the item is foreseen at tender stage but the possibility that such work may be required is not excluded.

For “Rate Only” items no quantities are given in the "Quantity" column but the quoted rate shall apply in the event of work under this item being required. The Tenderer shall however note that in terms of the Tender Data the Tenderer may be asked to reconsider any such rates which the Employer may regard as unbalanced.

All rates and amounts quoted in the Bill of Quantities shall be in rands and cents and shall include all levies and taxes (other than VAT). VAT will be added in the summary of the Bill of Quantities.

A price or rate is to be entered, in NON ERASABLE BLACK INK, against each item in the Bill of Quantities.

**C2.1.6 CORRECTION OF ENTRIES**

Incorrect entries shall not be erased or obliterated with correction fluid but must be crossed out neatly. The correct figures must be entered above or adjacent to the deleted entry, and the alteration must be initialled by the Tenderer.

**C2.1.7 ARITHMETICAL ERRORS**

Arithmetical errors found in the Bill of Quantities as a result of faulty multiplication or addition, will be corrected by the Engineer at the tender evaluation stage, as set out in the Tender Data.

**C2.1.8 MONTHLY PAYMENTS**

Unless otherwise specified in the Specifications and Project Specifications, progress payments in Interim Certificates, referred to in Clause 6.10 of the General Conditions of Contract 2015, in respect of "sum" items in the Bill of Quantities shall be by means of interim progress instalments assessed by the Engineer and based on the measure in which the work actually carried out relates to the extent of the work to be done by the Contractor.
C2.1.9  UNITS OF MEASUREMENT

The units of measurement described in the Bill of Quantities are metric units for which the standard international abbreviations are used. Non-standard abbreviations, which may appear in the Bill of Quantities, are as follows:

- **AC**: asbestos-cement
- **b**: barrel
- **Br**: branch
- **BSP**: British standard pipe
- **c**: centre
- **c/f**: centre to face
- **Cl**: cast iron
- **CID**: constant internal diameter
- **CISC**: cast iron short collar
- **COD**: constant outer diameter
- **FBE**: flanged both ends
- **dia**: diameter
- **DN**: nominal diameter
- **EO**: extra over
- **FA**: flange adaptor
- **FC**: fibre cement
- **FBE**: flanged both ends
- **FOE**: flanged one end
- **f/f**: face to face
- **fl**: flange or flanged face
- **FTB**: factory tested pressure
- **GMS**: galvanised mild steel
- **GRP**: glass reinforced polyester
- **hdg**: heavy duty galvanised
- **HDPE**: high density polyethylene
- **ID**: internal diameter
- **Incl**: inclusive
- **Incl**: inclusive
- **kPa**: kilopascal
- **mod**: modified
- **MS**: mild steel
- **No.**: number
- **nom**: nominal
- **OD**: outside diameter
- **%**: percent
- **PC sum**: prime cost sum
- **pe**: plain-ended to suit joint with couplings
- **pe/Fl**: plain-ended and flanged
- **PVC**: poly-vinyl chloride
- **RC**: reinforced concrete
- **RO**: rate only
- **scj**: short collar joint
- **S/S**: stainless steel grade 304
- **Sum**: lump sum
- **thk**: thick
- **uPVC**: Unplasticised poly-vinyl chloride
- **VJ**: Viking-Johnson type
- **wt**: wall thickness
### C.2.2 BILL OF QUANTITIES

<table>
<thead>
<tr>
<th>ITEM</th>
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<th>DESCRIPTION</th>
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<td>8.3 FIXED-CHARGE ITEMS</td>
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<td>Remove Engineer's and Contractor's Site establishment on completion</td>
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<td>8.4 TIME-RELATED ITEMS</td>
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<td>Operate and maintain facilities on the Site:</td>
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<td>a) Facilities for Engineer for duration of construction</td>
<td>Prov.</td>
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<td>b) Facilities for Contractor for duration of construction, except where otherwise stated</td>
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<td></td>
<td>Month</td>
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<td>8.8 TEMPORARY WORKS</td>
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<td>1.10</td>
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<td>Excavate by hand in soft material to expose existing services in a careful manner</td>
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SECTION 1 TOTAL CARRIED FORWARD TO SUMMARY

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<td></td>
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<td>3.1 8.3.2(a) Excavate in all materials for trenches, backfill, compact and dispose of surplus/unsuitable material, for pipes up to 200 mm in diameter for total trench depth:</td>
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<td>a) Exceeding 0,0 m but not exceeding 1,0 m</td>
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<td>b) Exceeding 1,01 m but not exceeding 1,5 m</td>
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<td>3.2 8.3.2(b) Extra-over item 3.1 (a) and 3.1 (b) above for (provisional):</td>
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<td>a) Hard rock excavation</td>
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<td>17</td>
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<td>b) Intermediate and boulders</td>
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<td>3.3 8.3.2(c) Excavate and dispose of unsuitable material from trench bottom (provisional)</td>
<td>m³</td>
<td>17</td>
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<td>3.4 8.3.3 Excavation Ancillaries</td>
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<td>3.4.1 8.3.3.1 Make up deficiency in backfill materials from other necessary excavations on site (provisional)</td>
<td>m³</td>
<td>17</td>
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<td></td>
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<td>a) from other necessary excavations on site</td>
<td>m³</td>
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<td>b) by importation from designated borrow pits</td>
<td>m³</td>
<td>3</td>
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<td>c) by importation from commercial or of-site sources selected by the Contractor</td>
<td>m³</td>
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<td>3.4.2 8.3.3.3 Compaction in road reserves</td>
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<td>3.5 8.3.5 Existing Services that intersect or adjoin a pipe trench</td>
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<td>b) Water pipes</td>
<td>No</td>
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<td>Rate only</td>
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<td></td>
<td></td>
<td>c) Stormwater pipes</td>
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<td>m</td>
<td>2</td>
<td>Rate only</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>b) Water pipes</td>
<td>m</td>
<td>1</td>
<td>Rate only</td>
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<td></td>
<td></td>
<td>8.3.1 (c) Remove topsoil to nominal depth 150mm stockpile and maintain</td>
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<td>310</td>
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<td></td>
<td></td>
<td>3.6 3.7 Topsoiling</td>
<td>m²</td>
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SECTION 3 TOTAL CARRIED FORWARD TO SUMMARY
### SECTION 4: BEDDING (PIPES)

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<td>4.1</td>
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<td>Provision of bedding from trench excavation</td>
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<td>a) Selected granular material</td>
<td>m³</td>
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<td>b) Selected fill material</td>
<td>m³</td>
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<td>4.2</td>
<td>8.2.2</td>
<td>Provision of bedding by importation</td>
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<td>8.2.2.3</td>
<td>From commercial sources (Provisional)</td>
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<td>a) Selected granular material</td>
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<td>b) Selected fill material</td>
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**SECTION 4 TOTAL CARRIED FORWARD TO SUMMARY**

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<td><strong>Using free issue materials:</strong></td>
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<tr>
<td>5.1</td>
<td>8.2.1</td>
<td>Handle, lay, bed Class C and test HDPE PE100 PN16 water pipes complete with couplings and fittings and disinfect pipes and joints</td>
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<tr>
<td></td>
<td></td>
<td>a) 110 mm diameter</td>
<td>m</td>
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<td>b) 110 mm diameter</td>
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<td>Extra over for the laying and bedding of specials complete with couplings</td>
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<td>a) 110 mm diameter x 90 deg</td>
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<td>b) 110 mm diameter x 45 deg</td>
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<td>c) 110 mm diameter x 22.5 deg</td>
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<td>Handle, lay, joint, bed, test and disinfect the following fittings and specials, including nuts, bolts, gaskets and sealing rubbers. Flanges to SABS 1123 Table 1600</td>
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<td>a) Flange adaptor DN100 to suit HDPE</td>
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<td>b) Flange adaptor DN50 to suit HDPE</td>
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<td>Connection 1: Borehole E8 connection to existing rising main</td>
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<td>Lay, bed and test pipework and specials. Including all existing work cutting into existing pipework and making good</td>
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<td>a) DN250 x 100 GMS Tee, FBE</td>
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<td>c) DN100 non-return valve, FBE</td>
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<td>d) Flange adaptor DN250 to suit uPVC</td>
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<td>e) Flexible coupling to suit DN100 MS and DN100 HDPE</td>
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<td>f) DN100 GMS pipe, 720 mm length, FOE</td>
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<td>a) Scour valve chamber complete (Refer drawing MD1870-ST-003)</td>
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<td>Ancillaries Anchor/Thrust blocks and pedestals including formwork Class 25/19 concrete</td>
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SECTION 5 TOTAL CARRIED FORWARD TO SUMMARY
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## TOTAL OF SCHEDULE OF QUANTITIES

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| TOTAL (Including VAT) |    |
| CARRIED FORWARD TO OFFER AND FRONT PAGE |    |
C3 SCOPE OF WORK

C3.1 DESCRIPTION OF THE WORKS

C3.1.1 EMPLOYERS OBJECTIVES

C3.1.1.1 BACKGROUND

As part of the short term interventions project to deal with the increased demand, the Knysna Local Municipality (KLM) plans to augment the water supply system. The scheme for augmentation will comprise of the equipping of boreholes and abstraction from various other water sources and the associated pipe work and rising mains.

This contract is for the potable water delivery system (installation of small diameter pipelines and associated valve chambers and pipe work) for Borehole E8.

C3.1.1.2 CONTRACT STRUCTURE

This enquiry calls for a contract with pricing data that allows for a pipeline and associated valve chambers and pipework, to be installed, using Employer supplied materials, and certain new materials, and certain existing materials.

The scope of works is as described in this document and the attached schedule of quantities, with reference to the specifications that follow.

NOTE: THIS RFQ WILL BE AWARDED TO THREE (3) DIFFERENT CONTRACTORS, EACH TO CARRY OUT A SIMILAR SCOPE OF WORK AT DIFFERENT SECTIONS OF PIPELINE.

C3.1.2 SCOPE OF CONTRACT

The scope of the contract includes, but is not limited to the following:

- Expose existing pipework and services on site
- Excavate, bed, lay, secure, test, backfill and commission 110mm HDPE Class 16 pipes,
- Installation of valves (supplied by others) and construction of valve boxes/chambers,
- Installation of various fittings (materials supplied by others),
- Excavate, bed, and compact backfill for short lengths of various pipelines,
- Fencing installation at borehole (materials supplied by others).

C3.1.3 LOCATION OF THE WORKS

The location of the borehole and position of the rising main is indicated on the attached locality plan; MD1870-C-001. Works will be between the borehole site and the existing Glebe-Akkerkloof pipeline.

C3.1.4 TEMPORARY WORKS

The Contractor shall provide all the necessary temporary works.
C3.2 ENGINEERING

C3.2.1 EMPLOYER’S DESIGN

The Engineer is responsible for the design of the Permanent Works as set out on the attached drawings, specifications and bill/s of quantities.

C3.2.2 DESIGN BRIEF

The Contractor will be responsible for the design of all temporary works, i.e. access if required by the Contractor to suit his construction equipment, temporary fencing, etc.

C3.2.3 DRAWINGS

The drawing and information issued to tenderers as part of the enquiry documents must be regarded as provisional and preliminary for the tenderer’s benefit to generally assess the scope of work.

The work shall be carried out in accordance with the latest information issued for construction.

Drawings issued separately are listed hereafter.

<table>
<thead>
<tr>
<th>Drawing No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD1870-C-001</td>
<td>Locality Plan</td>
</tr>
<tr>
<td>MD1870-C-100</td>
<td>BHE8 &amp; Rising main general layout</td>
</tr>
<tr>
<td>MD1870-C-101</td>
<td>Borehole valve chamber detail</td>
</tr>
<tr>
<td>MD1870-C-102</td>
<td>Connection 1: Borehole E8 connection to existing Glebe/Akkerkloof pipeline</td>
</tr>
<tr>
<td>MD1870-ST-001</td>
<td>Typical pipe bedding</td>
</tr>
<tr>
<td>MD1870-ST-002</td>
<td>Air valve chamber</td>
</tr>
<tr>
<td>MD1870-ST-003</td>
<td>Scour valve chamber</td>
</tr>
<tr>
<td>MD1870-ST-004</td>
<td>Valve markers</td>
</tr>
<tr>
<td>MD1870-ST-005</td>
<td>Thrust blocks for tee pieces and end caps</td>
</tr>
<tr>
<td>MD1870-ST-006</td>
<td>Thrust blocks for bends on pipelines</td>
</tr>
<tr>
<td>MD1870-ST-007</td>
<td>Palisade fence</td>
</tr>
</tbody>
</table>
C3.3 CONSTRUCTION

C3.3.1 WORKS SPECIFICATIONS

C3.3.1.1 APPLICABLE STANDARDS

The standard specifications on which this contract is based are the South African Bureau of Standards Standardized Specifications for Civil Engineering Construction SABS 1200. Although not bound in nor issued with this Document, the Sections of the Standardised Specifications of SABS 1200, that shall form part of this Contract, are listed in Subclause C3.6.2 (Specifications) of this Document.

C3.3.1.2 APPLICABLE SANS STANDARDS

The following SANS specifications are also referred to in this document and the Contractor is advised to obtain them from Standards South Africa (a division of SABS) in Pretoria.

SANS 1921-1  Construction and Management Requirements for Works Contracts Part 1: General Engineering and Construction Works

The standardised specifications (SABS 1200) must be read in conjunction with the new SANS 2001 and 1921 family of standards. In case of any discrepancy or conflict between the two, the SANS specification shall take precedence and shall govern.

Refer also to the Preface on interim situation until full suite of SANS Series of Specifications is available, in Subclause C.3.6.2.

The term “project specifications” appearing in any of the SABS 1200 standardised specifications is deemed to be equivalent to the term “scope of work” in SANS Specifications.

C3.3.1.3 CERTIFICATION BY RECOGNISED BODIES

Wherever possible items and materials for construction of the works shall comply with the relevant South African Bureau of Standards Specifications and with the British Standards where these are applicable in the absence of local standards.

The Contractor, when using materials conforming to a Standard Specification shall if called upon furnish the Engineer with certificates of tests showing that the materials do so conform.
C3.4  FACILITIES

C3.4.1  PLANT AND MATERIALS SUPPLIED BY THE EMPLOYER

The following materials are to be supplied by the employer:

a) Main pipeline material (HDPE)
b) Miscellaneous pipework and fittings
c) Palisade fencing and gate

C3.4.2  EQUIPMENT SUPPLIED BY THE EMPLOYER

No equipment supply will take place by the employer.

C3.4.3  SITE ESTABLISHMENT

C3.4.3.1  SERVICES AND FACILITIES PROVIDED BY THE EMPLOYER

Water supply: The Contractor shall make his own arrangements for a connection for the supply of water for construction purposes. The closest potable water supply from the Knysna Municipality is located near the site.

The Contractor shall supply, install, operate and maintain at his cost, such temporary pipework and storage facilities as may be necessary to ensure sufficient supply. No warranty is offered that the existing water supply will be adequate for the contractor’s purposes.

All connection fees and the cost of all water drawn from the water supply authority’s system will be for the account of the Contractor.

Source of power supply: The Contractor shall make his own arrangements for a connection for the supply of electrical power for construction purposes. The Municipality is the power supply authority for the area. No warranty is offered that the available electrical supply will be adequate for the Contractor’s purposes.

All connection fees and the cost of all electrical power consumption will be for the account of the Contractor.

Waterborne sewage disposal: A reticulation system does exist near the site but it is not foreseen that the contractor will make any connections thereto for the purposes of the contract or his own use.

C3.4.3.2  FACILITIES PROVIDED BY THE CONTRACTOR

Location of Camp and Depot: The Contractor shall make his own arrangements for his offices, storage facilities, workshops & latrines. No offices or equipment thereto are required for the Engineers or Engineer’s Representative’s use.

Temporary buildings and fencing are to be neat and presentable and the surrounding areas must at all times be kept in a neat, clean and orderly condition. The Contractor must not cut down or damage any trees nor make any excavation without the written permission of the Engineer and will be required to restore the site to its original condition on completion of the works.

C3.4.3.3  STORAGE AND LABORATORY FACILITIES

No storage and laboratories are required other than that which the Contractor may require for the execution of the Works.

C3.4.3.4  AREA FOR CONTRACTOR’S SITE ESTABLISHMENT

The Contractor shall be solely responsible for identifying and making arrangements for an area for his site offices, workshops, stores and other facilities required for the execution of the Contract.
C3.4.3.5 OTHER SERVICES AND FACILITIES

Disposal of refuse

The Contractor shall be responsible for disposal of refuse and waste generated by his staff on a daily basis. The entire site is to be kept clean, neat and tidy, to the Employer’s satisfaction.

Telephone facilities

The Contractor is to provide his own telephone facilities on site.

Rail facilities

The nearest goods handling station is George.

Survey Equipment and Facilities

The Contractor is to provide his own survey equipment and facilities.

C3.4 SITE USAGE

C3.4.4.1 HOUSING FACILITIES

No accommodation of the Contractor’s employees will be permitted on site.

C3.4.4.2 CONSTRUCTION AREA FINISHING, TIDYING AND ENVIRONMENTAL REINSTATEMENT

Progressive and systematic finishing and tidying will form an essential part of this contract. On no account shall spoil, rubble, materials, equipment or unfinished operations be allowed to accumulate in such a manner as to unnecessarily impede the activities of others or give rise to complaints from the Engineer, Municipal officials or members of the public. In the event of this occurring the Employer shall have the right to withhold payment for as long as may be necessary in respect of the relevant works in the areas concerned without thereby prejudicing the rights of others to institute claims against the Contractor on the grounds of unnecessary obstruction.

All finishing and tidying shall be carried out to the best advantage of the project as a whole and in the closest co-operation with others that may be operating on the site.

No indiscriminate spoiling of material will be allowed. All surplus or unsuitable material shall be spoiled at the Knysna Municipal dumping site, (within 20km from the site), or as otherwise directed by the Engineer.

C3.4.4.3 CARE, DAMAGE AND PROTECTION
The Contractor shall at his own cost make full provision for all watching and lighting necessary for the protection of all persons, animals, vehicles, etc., from injury by reason of the Works. He shall provide ample warning signs, guard rails, etc., around open excavations, stacks of materials, excavated material, debris or the like, and he shall be held liable for all claims made upon himself or upon the Employer by reason of his neglect of all such precautions and provisions. If at any time the Contractor fails to take proper or adequate precautions in this respect, the Employer may take such steps as he deems necessary and recover the cost thereof from the Contractor.

C3.4.4.4 PERMITS AND WAYLEAVES

The Employer is to obtain the necessary approvals and wayleaves from inter alia, land owners, Provincial Roads Department, Eden District Council, Telkom and Eskom.

The Contractor is to confirm that permission has been granted before commencing work.

C3.4.4.5 INSPECTION OF ADJOINING PROPERTIES

As most of the construction activities will be on privately owned land, the Contractor shall abide by the conditions agreed with the individual property owners.

A photo or video record shall be kept of the condition of the properties by the Employers Agent, before, during and after the construction.

C3.4.4.6 EXISTING SERVICES

The Contractor shall at all times exercise the utmost care when working in the vicinity of existing services and shall take all necessary steps to protect any existing services whatsoever against damage which may arise as a result of his operations on site. The Contractor shall bear the cost of the repair of damage to any service the possible existence of which could reasonably have been ascertained by him in good time. All cables and pipes shall be considered "live" unless confirmed otherwise by the relevant service authority.
C3.5 MANAGEMENT

C3.5.1 MANAGEMENT OF THE WORKS

C3.5.1.1 APPLICABLE SANS 1921 STANDARDS

The following SANS 1921 Construction and Management requirements for works standards and associated specification data are applicable:


C3.5.1.2 ENVIRONMENT

The Western Cape Department of Environmental Affairs Standard Construction Phase Environmental Management Plan (EMP) is included in the specifications. The requirements of this plan are to be strictly adhered to during all activities involved in the execution of this Contract.

The Contractor will be responsible for environmental control on site during construction and the maintenance period. The construction activities will be monitored by an independent environmental specialist and audited against the EMP.

The Contractor shall restrict his operations to the limits of the Site and any approved access route/s thereto.

The Contractor shall, for the duration of the contract, take appropriate measures to control the water, soil, and dust movement which may arise due to his operations and shall at all times ensure that his operations do not endanger any member of the public.

An item has been included in the Bill of Quantities for implementing and adhering to the EMP.

C3.5.1.3 RECORDING OF WEATHER

Measuring the rainfall is not required and the records from the Knysna water treatment works (WTW) will be used if such records are required.

C3.5.1.4 LOCAL LABOUR

It is intended that the contractor must make the maximum possible use of the local labour force which is at present under-employed. To this end the Contractor shall limit the use of non-local staff to key personnel only and is to employ local labour on this Contract. The Contractor will be required to submit weekly labour returns indicating the numbers of workers in the various categories of workers and wages paid, in a format as approved by the Engineer.

C3.5.1.5 MANAGEMENT MEETINGS

The Contractor and such other persons as may be nominated by the Engineer shall be required to attend periodic site meetings, the date and place for which will be set by the Engineer in consultation with the Employer and Contractor.

A main purpose of the site meetings will be to review and discuss progress and programme. All persons attending the site meetings must be empowered to act on behalf of the firms they represent.

C3.5.1.6 DAILY RECORDS

The Contractor is to provide a site diary, which is to be kept on site, for the purpose of keeping daily records in respect of work performed on the site.
C3.5.2 HEALTH AND SAFETY

The Contractor shall prepare a Health and Safety Plan in terms of the Occupational Health and Safety Act No 85 of 1993 and the Construction Regulations issued in terms of Section 43 of the Act. The employers’ pre-construction health and safety specification is attached to this Document as specification PZ.

An item is provided in the Bill of Quantities for the preparation of, and adherence to, this plan.
C3.6 SPECIFICATIONS

C3.6.1 PREFACE ON INTERIM SITUATION

(untit full suite of SANS Series Specifications are available.)

The Bill of Quantities is based on the SABS 1200 system of specifications and measurement. Where SANS specifications are available, these have been incorporated into the “Contract” section of this document.

Where overlapping specifications from the SANS 1200 series of specifications occur the appropriate SABS 1200 specifications have been incorporated into the Project Specifications.

In such cases, the following shall be observed:

(i) the requirements of the SANS specification(s) shall prevail over the requirements of the SABS 1200 specifications.

(ii) The payment clauses in the Bill of Quantities are based on the SABS 1200 series of specifications for consistency and the Tenderer is required to ensure that he has priced all of the requirements pertaining to the SANS specifications.

C3.6.2 LIST OF PROJECT SPECIFICATIONS

The following project specifications are applicable:

SABS 1200 A (1986): General
SABS 1200 C (1982): Site Clearance
SABS 1200 DB (1989): Earthworks (pipe trenches)
SABS 1200 L (1983): Medium Pressure Pipelines
SABS 1200 LB (1983): Bedding (pipes)

The following particular specifications shall apply:

PZ: Health and Safety
PE: Environmental specifications
PY: Palisade Fencing
C3.6.3 VARIATIONS AND ADDITIONS TO THE STANDARDIZED SPECIFICATIONS FOR THIS CONTRACT, AND PARTICULAR SPECIFICATIONS
PZ  PRE-CONSTRUCTION HEALTH AND SAFETY SPECIFICATION

PZ 1  INTRODUCTION AND BACKGROUND

PZ1.1  BACKGROUND

The Construction Regulations, 2014 place the onus on the Employer (defined as the Client in terms of the Construction Regulations) to prepare a pre-construction health & safety (H&S) specification, highlighting all risks not successfully eliminated during design.

PZ1.2  PURPOSE OF THE PRE-CONSTRUCTION HEALTH AND SAFETY (H&S) SPECIFICATION

The purpose of the pre-construction H&S specification is to assist with the achievement of compliance with the OHS Act, and in particular with the Construction Regulations, so as to reduce incidents and injuries on the project. The pre-construction specification enables Tenderers to make adequate financial provisions in their tenders to cover the H&S requirements of the project and thereafter, for the Contractor and its sub-contractors to use as the basis for the preparation of the construction phase H&S plan.

The pre-construction specification sets out the basic requirements to be met by the Contractor and all sub-contractors so that the H&S of all persons potentially at risk may receive a priority at least equal to the other facets of the project such as the standard of workmanship, costs, programme, environment, etc.

PZ1.3  STATUS OF THE PRE-CONSTRUCTION HEALTH AND SAFETY SPECIFICATION

The Client’s H&S specification will form an integral part of the contract, and Tenderers are required to use it during the tender phase for pricing the preparation a project-specific construction phase H&S plan prior to commencing any work and for pricing the costs of ensuring compliance thereto during the entire construction phase. Tenderers shall forward a copy of the H&S specification to all other persons or organisations who may be preparing to submit prices to the Tenderer during their bidding phase so that they can also price for preparing their own H&S plans relating to their individual operations and for complying with the H&S requirements during the construction phase.

Notwithstanding the fact that the Client’s pre-tender H&S specification does not identify all of the H&S risks that may be encountered on the project, Tenderers are required to take cognisance of all potential H&S risks that may be evident from the tender documents namely the conditions of contract, tender drawings, technical specifications and schedules of quantities, and to make the requisite provisions in their tenders for dealing with all of them.

PZ2  HEALTH AND SAFETY SPECIFICATION

PZ2.1  SCOPE

This health and safety (H&S) specification is the Client’s H&S specification prepared in accordance with Clause 4(a) of the Construction Regulations. It covers the requirements for eliminating and mitigating incidents and injuries during the construction phase of the project. The specification addresses legal compliance, hazard identification and risk assessment, risk control, and promoting a health and safety culture amongst those working on the project. The specification also makes provision for the protection of those persons other than employees of the Principal Contractor and Contractors.

PZ2.2  INTERPRETATIONS

PZ2.2.1 Application

This specification is a compliance document drawn up in terms of South African legislation and will therefore be binding on the Contractor. It must be read in conjunction with all of the other contract documentation and also with all the relevant statutory documents. This specification is not intended to over-ride, or in any way to amend, the statutory/regulatory documents and, in the event of there being any conflict, the legislation will take precedence.
PZ2.2 Definitions

The definitions as listed in the Occupational Health & Safety Act 85/1993 and Construction Regulations, (2014 shall apply to this H&S specification. More specifically, where used in this H&S specification, “Principal Contractor” means the Contractor, “Contractor” means sub-contractors to the Principal Contractor, and “Client” means the Employer or his/her duly appointed Agent.

PZ2.3 MINIMUM ADMINISTRATIVE REQUIREMENTS

PZ2.3.1 Notification of Intention to Commence Construction Work

On receipt of the Client’s notification of award of the contract and, in any event before any construction work commences, the Principal Contractor shall notify the Provincial Director of the Department of Labour in writing of the intention to undertake construction work. Annexure A to the Construction Regulations must be used for that purpose and a copy of that form is attached as Annex A to this specification. A copy of the completed notification must be forwarded to the Client and to the Engineer and a copy shall be attached to the H&S plan. The addresses of the nine Provincial Directors of the Department of Labour are given in Clause 1 of the General Administrative Regulations to the OHS Act.

PZ2.3.2 Assignment of the CEOs’ Responsibility For Health and Safety on Site

In terms of Section 16 of the Act, the Chief Executive Officers (CEOs) of the Client, the Engineer, the Principal Contractor and all other Contractors shall make the requisite assignments of their responsibilities in writing prior to commencement of work on site. It is noted that, in a large organisation, the CEO may decide to assign his responsibilities to a line manager who may in turn assign his responsibilities to another line manager and so on. Annexure B to this specification comprises forms which may be used for these assignments. Copies of the completed forms shall be attached to the H&S plan.

PZ2.3.3 Appointment of the Construction Supervisor

The Principal Contractor’s CEO (or his duly assigned employee) shall appoint (in writing) a full time competent person to supervise the construction work. One or more competent persons may also be appointed (in writing) to assist the appointed construction supervisor should the Principal Contractor deem it necessary or desirable. The Principal Contractor’s and the Contractors’ competent persons for the various roles shall fulfil the criteria as defined the Construction Regulations. Copies of these appointments, together with proof of competence of the individuals concerned, shall be attached to the H&S plan. Proof of competencies shall take cognisance of the definition of a “competent person” as set out in the Construction Regulations and may comprise CV’s and written motivations/recommendations by the persons’ direct report.

PZ2.3.4 Compensation of Occupational Injuries and Diseases Act 130 of 1993

The Principal Contractor shall, prior to commencing work on site, submit a letter of good standing with its Compensation Insurer to the Client and to the Engineer as proof of registration. All other Contractors shall submit their proof of registration to the Principal Contractor before they commence work on site. Copies of these documents shall be attached to the H&S plan.

PZ2.3.5 Occupational Health and Safety Policy

The Principal Contractor and all other Contractors shall submit to the Client and to the Engineer, a copy of their organisation’s H&S Policy signed by their Chief Executive Officer. Each policy must include a description of the organisation and state the H&S objectives and how they will be achieved and implemented by the organisation. Copies of these policies shall be attached to the H&S plan.

PZ2.3.6 Health and Safety Organogram

The Principal Contractor shall submit an organogram, outlining the H&S site management structure including those of all other Contractors. In cases where appointments have not been made, the organogram shall reflect the intended positions, and the names shall be filled in as and when the appointments are made. The
organogram shall be updated whenever there are any changes in the site management structure and/or personnel. A copy shall be attached to the H&S plan.

PZ2.3.7 Health and Safety Representative(s)

The Principal Contractor and all other Contractors shall, after due consultation with the parties concerned, ensure that an H&S Representative is appointed in writing as soon as there are 20 persons employed on a site. Additional H&S Representatives are required once the workforce exceeds 50 persons. Annexure C may be used for this purpose and copies of the appointments are to be attached to the H&S plan. Each H&S Representative(s) is to be trained to carry out their respective functions and must carry out regular inspections, keep records, and report all findings to the responsible person forthwith, and also at the next H&S meeting. Copies of these documents are to be kept in the Project H&S File.

PZ2.3.8 Health and Safety Committees

Provided that two or more Safety Representatives have been designated, the Principal Contractor shall ensure that one or more Safety Committees are established and that H&S committee meetings are held at least monthly and that minutes are kept on record. Meetings must be convened and chaired by the Principal Contractor’s Construction Supervisor. All of the Principal Contractor’s and other Contractors’ responsible persons and H&S Representatives shall attend the monthly H&S meetings. Contractors shall also have their own internal H&S committees as required in terms of the OHS Act and copies of their agendas and minutes of their meetings shall be forwarded to the Principal Contractor on a monthly basis. Copies of all H&S committees’ agendas and minutes are to be kept in the Project H&S File.

PZ2.3.9 Health & Safety Audits, Monitoring and Reporting

The Client shall conduct monthly H&S audits of the construction work operations including a full audit of physical site activities as well as an audit of the administration of H&S. The Principal Contractor is obligated to conduct similar audits on all Contractors that they have appointed. Detailed reports of the audit findings shall be reported on at all levels of project management meetings/forums. Copies of all audit reports shall be kept in the Project H&S File.

PZ2.3.10 Emergency Procedures

The Principal Contractor shall prepare a detailed emergency procedure prior to commencement of work on site and it shall be included in, and form part of, the H&S plan. The procedure shall be updated whenever changes occur and it shall detail the emergency response plans. The emergency procedures shall not be limited to, but shall include, the following key elements:

- List of key competent personnel on site;
- Details of the nearest emergency services, including their physical addresses and phone numbers;
- Actions or steps to be taken in the event of each specific type of emergency;
- Information on hazardous materials/situations that may be encountered on site.

Emergency procedures shall include, but shall not be limited to, fire, spills, accidents to employees, use of hazardous substances, bomb threats, major incidents/accidents.

A contact list of all service providers (Fire Department, Ambulance, Police, Medical and Hospital, etc) must be maintained and be readily available to site personnel at all times that there are persons on site i.e. it must not be located in an area which may be inaccessible outside of normal working hours.

The Principal Contractor shall advise the Client and the Engineer in writing forthwith, and thereafter at the project and H&S meetings, of any emergencies that occurred, together with a record of the action taken. Copies of all reports on emergencies shall be kept in the Project H&S File.
RFQ 291/2017/18: KNYSNA BOREHOLE E8 - CIVIL INSTALLATION NO.3

PZ2.3.11 Accident / Incident Reporting and Investigation

Each Injury that occurs is to be categorised into first aid, medical, disabling, or fatal and must be reported on the prescribed form (refer Annexure D). The Principal Contractor must document in its construction phase H&S plan how it will handle each of these categories of injury. When reporting injuries to the Client, these aforementioned categories shall be used. All injuries shall be investigated by the Principal Contractor, with a report being forwarded to the Client forthwith. All Contractors have to report on the four categories of injuries to the Principal Contractor at least monthly. The Principal Contractor must report all injuries to the Client in the form of a detailed injury report at least monthly and copies of these reports shall be kept in the Project H&S File.

PZ2.3.12 General Record Keeping

The Principal Contractor and all Contractors shall keep and maintain H&S records to demonstrate compliance with this specification, the approved H&S plan, the OHS Act, and the Regulations. The Principal Contractor shall ensure that all records of incidents/accidents, training, inspections, audits, etc. are kept in the Project H&S File stored in a suitable place on site. The Principal Contractor must ensure that every Contractor opens its own H&S file, maintains the file, makes it available to the Principal Contractor and other authorised persons on request and sends copies of the relevant documentation to the Principal Contractor.

The Principal Contractor shall maintain an up to date register of each Contractor engaged in construction work on site giving the Contractors’ name and the Responsible Persons’ contact details and the number of employees on site. As these details may be subject to frequent change, the register must be updated at least weekly. The register is to be available for inspection.

PZ2.3.13 Project H&S File

The Principal Contractor shall prepare, and update on at least a monthly basis, a properly indexed H&S file for the project. This file will evolve during the construction phase and is to be handed over to the Client on completion of the construction work on site. The Project H&S File shall contain:

- The names and addresses and contact details of the Principal Contractor
- The names and addresses of all other Contractors that worked on the project, copies of their agreements with the Principal Contractor and the type of work that each one is carrying/has carried out.
- The original and all subsequent versions/revisions of the H&S plan and the Annexures and Appendices thereto.
- All information specifically called for in the OHS Act and the Construction Regulations and this specification and any other pertinent information relating to H&S on the project that is considered relevant.
- The safe work procedures developed by the Principal Contractor and all other Contractors.
- Details of any special or unusual materials forming part of the completed works.
- All relevant information concerning the completed works. This information shall comprise the record/"as built" drawings prepared by the Engineer, copies of which will be issued to the Principal Contractor for inclusion in the File, and the operating and maintenance instructions and all relevant information relating to any unusual or special features of the completed works that could affect H&S of the end users. When compiling this data, consideration must be given to all information that may be relevant to possible future alterations and/or demolition of all or part of the works.

PZ2.4 HEALTH AND SAFETY INDUCTION, TRAINING AND EQUIPMENT

PZ2.4.1 H&S Induction, Awareness and Competency

Induction of Site Personnel

The Principal Contractor shall ensure that all site personnel, including those of all other Contractors, undergo risk-specific H&S induction training before starting work. A record of attendance at every induction session shall be kept in the Project H&S File. A suitable venue must be made available by the Principal Contractor to accommodate this training.
Awareness of Site Personnel

The Principal Contractor shall ensure that periodic ‘toolbox talks’ take place on site. These talks should deal with risks relevant to the construction work at hand. All Contractors shall conduct ‘toolbox’ talks at least once per week with their own employees. A record of attendance at each ‘toolbox talk’ shall be kept in the Project H&S File.

Competency of Site Personnel

All competent persons shall have the knowledge, experience, training, and qualifications specific to the work they have been appointed to supervise, control and/or carry out. This will have to be assessed on a regular basis by, for example, periodic H&S audits, progress meetings, etc. The Principal Contractor will be responsible for ensuring that only competent Contractors are appointed to carry out construction work.

PZ2.5 Preliminary Hazard Identification and Risk Assessment and Progress Hazard Identification and Risk Assessment

The Principal Contractor and all other Contractors shall cause a hazard identification to be performed by a competent person(s) before commencement of their respective construction work, and the assessed risks shall be documented in the construction phase H&S plan to be submitted for discussion with, and subsequent approval by, the Client. The risk assessments must include:

- A list of all hazards identified as well as potentially hazardous tasks to be carried out;
- A documented risk assessment based on the list of hazards and tasks;
- A set of safe working procedures (method statements) to eliminate, reduce and/or control the risks assessed;
- Details of the PPE and clothing to be worn;
- A monitoring and review procedure of the risk assessments to be carried out on a monthly basis, whenever variation orders are issued or changes made, and whenever the risks change.

The Principal Contractor shall ensure that all other Contractors are informed, instructed and trained, by a competent person regarding all hazards, risks, and the related safe work procedures before any work commences and thereafter at regular intervals if the risks change and/or if new risks are identified.

The Principal Contractor shall be responsible for ensuring that all persons who could be negatively affected by its operations are informed and trained according to the hazards and risks and are conversant with the safe work procedures, control measures, and other related rules such as the ‘tool box talk’ strategy that is to be implemented.

The Principal Contractor shall immediately notify all other Contractors as well as the Client of any hazardous or potentially hazardous situations that may arise during performance of construction activities.

The Principal Contractor shall keep records as per Clause 9 of the Hazardous Chemical Substances Regulations.

All of the above are to be documented in the H&S plan.

PZ2.6 PERMITS

Permits may be required for certain activities and these are not limited to but may include the following:

- Use of explosives and blasting
- Work for which a fall prevention plan is required
- Removal of asbestos materials.
- Disposal of (old type) fire detectors with radio active elements.
- Decanting/handling of ammonia.
If and where applicable, the Employer will issue to the Principal Contractor, permits and log books (which log books shall thereafter be kept up to date by the Principal Contractor), for the following installations:

- Boilers
- Medium voltage (MV) switchgear and chambers/rooms
- MV switchgear outdoor yards
- Lifts

All of the above are to be documented in the H&S plan.

PZ2.7 SPECIFIC PROJECT REQUIREMENTS

PZ2.7.1 Trench Excavation

Trench depths may in places be in excess of 2 m deep. Adequate protection shall be provided to workers in the trench at all time. The sides of the trenches shall be battered or shoring shall be installed to prevent side wall collapse. The Contractor shall appoint a competent person in writing to inspect all trenches where work is being carried out on a daily basis.

PZ2.7.2 High Voltage Cables

High voltage and street light cables are present on the Site.

PZ2.7.3 Construction Vehicles and Mobile Plant

The Principal Contractor shall ensure that all persons in its employ, all Contractors, and all those that are visiting the site are aware and comply with the site speed restriction(s). Separate vehicle and pedestrian access routes shall be provided, maintained, controlled, and enforced.

The Principal Contractor and all relevant Contractors shall inspect and keep records of inspections of the construction plant used on site. Only authorised/competent persons are to use machinery under proper supervision.

The Principal Contractor shall ensure that all hired plant and machinery used on site is safe for use. The Principal Contractor shall ensure that operators hired with machinery are competent and that certificates are kept on site in the health & safety file. All relevant Contractors must ensure the same.

PZ2.7.4 Warning signs

The Principal Contractor shall erect and maintain the necessary signs, notices and barricades at strategic points on the boundaries to inform people of the dangers of the construction site.

PZ2.7.5 Construction Welfare Facilities

The Principal Contractor shall supply hand washing facilities, soap, toilet paper, and hand drying material. Waste bins must be strategically placed and emptied regularly. Safe, clean storage areas must be provided for workers to store personal belongings and personal protective equipment. Workers shall not be exposed to hazardous materials/substances while eating.

PZ2.7.6 General Machinery

The Principal Contractor and relevant Contractors shall ensure compliance with the Driven Machinery Regulations, which include inspecting machinery regularly, appointing a competent person to inspect and ensure maintenance, issuing PPE or clothing, and training those who use machinery.

PZ2.7.7 Transport of Workers

The Principal Contractor and other Contractors shall not:
Part C3: Scope of Work

RFQ 29/2017/18: KNYSNA BOREHOLE E8 - CIVIL INSTALLATION NO.3

- Transport persons together with goods or tools unless there is an appropriate area or section to store them;
- Transport persons in a non-enclosed vehicle, e.g. truck; there must be a proper canopy (properly covering the back and top) with suitable sitting area. Workers shall not be permitted to stand or sit at the edge of the transporting vehicle.
- Transport workers in bakkies unless they are closed/covered and have the correct number of seats for the passengers.

PZ2.8 FINANCIAL PROVISION FOR HEALTH AND SAFETY

Tenderers (including those sub-contractors and/or suppliers who are preparing prices/quotations for submission to the main Tenderer) must ensure that they make adequate financial provision in their tenders for full compliance with the OHS Act, the Regulations thereto and this H&S specification. Financial provision shall therefore be made by each Tenderer for, inter alia, the following:

- Carrying out and documenting risk assessments of all work to be carried out under the contract.
- Preparation of safe work procedures for all work to be carried out under the contract.
- Preparation of an H&S plan, discussing it with the Client, and then amending it as agreed.
- Preparation for and conducting “toolbox talks” with relevant employees.
- Induction and training as and where required.
- Preparation of a Project H&S File.
- Regular updating of all of the foregoing.
- Provision of PPE and protective clothing for employees
- Complying with all H&S requirements for the duration of the contract.

To enable the Client to be appraised of the allowances that Tenderers have made for H&S in their tenders, so that he/she can fulfil his/her obligations in terms of Clause 4 (h) of the Construction Regulations, the following H&S items have been included in the Schedules of Quantities and must be individually priced:

- Fixed Charge Item for the preparation of risk assessments, safe work procedures, the project H&S File, the H&S plan, the provision of PPE and protective clothing, and any other H&S matters that the contractor deems necessary.
- Fixed Charge Item for completing and checking the Project H&S File and handing over to the Client on completion of the works.
- Time Related Item for updating and amending the risk assessments, safe work procedures, the project H&S File, the H&S plan, the provision of PPE and protective clothing and any other H&S matters that the contractor deems necessary.
- Time Related Item for full compliance with all H&S matters during the construction of the works under the contract.
2 MANAGEMENT PLAN CONTEXT

2.1 INTRODUCTION

This document describes mitigation measures and is partly prescriptive, identifying specific people to undertake specific tasks, in order to ensure that impacts on the environment are minimised during the construction phase.

This Environmental Management Plan (EMP) serves as a basic standard guideline document for use on small or low impact construction development sites to prevent unnecessary environmental impacts. Expansion or adaptation of this management plan may be required in specific circumstances.

2.2 ENVIRONMENTAL SITE AGENT

The environmental site agent (ESA) is the person involved with the development project who is responsible for the implementation of the environmental management plan. This person is, therefore responsible for the environmental issues involved with the construction phase of the project.

At large developments an independent, qualified Environmental Control Officer is normally appointed. For the implementation of this management plan, the appointment of an ESA is required. This person may be someone involved with the project acting on behalf of the applicant (e.g. a farm manager) or may be the applicant. It must, however, be a person with adequate environmental knowledge to understand and implement this management plan. The ESA may not be someone appointed by the contractor, engineer or other party involved with the project. The ESA must report to the applicant only.

The ESA has the authority to stop works if in his opinion there is a serious threat to or impact on the environment caused directly from the construction operations. This authority is to be limited to emergency
situations where consultation with the engineer or applicant is not immediately available. In all such work stoppage situations the ESA is to inform the engineer and applicant of the reasons for the stoppage as soon as possible.

Upon failure by the contractor or his employee to show adequate consideration to the environmental aspects of this contract, the ESA may recommend to the engineer to have the contractor's representative or any employee(s) removed from the site or work suspended until the matter is remedied. No extension of time will be considered in the case of such suspensions and all costs will be borne by the contractor.

### 2.3 ENVIRONMENTAL AWARENESS TRAINING FOR SITE PERSONNEL

All contractor teams involved in work on the development are to be briefed on their obligations towards environmental controls and methodologies in terms of this EMP prior to work commencing. The briefing will usually take the form of an on-site talk and demonstration by the ESA. The education / awareness programme should be aimed at all levels of management within the contractor team. (see "Do's & Don'ts" summary sheet, appendix 1)

### 2.4 COMMUNICATION PROCEDURES ON SITE

#### 2.4.1 Site instruction entries

The Site Instruction book entries will be used for the recording of general site instructions as they relate to the works on site. It will also be used for the issuing of stop work orders for the purposes of immediately halting any particular activities of the contractor in lieu of the environmental risk that they may pose.

#### 2.4.2 ESA diary entries

The purpose of these entries will be to record the comments of the ESA as they relate to activities on the site. Each of these books must be available in duplicate, with copies for the Engineer and ESA. These books should be available to the authorities for inspection or on request. Contractors meeting minutes must reflect environmental queries, agreed actions and dates of eventual compliance. These minutes form part of the official environmental record.

#### 2.4.3 Method statements

Method statements from the Contractor will be required for specific sensitive actions on request of the authorities or ESA. A method statement forms the base line information on which sensitive area work takes place and is a "live document" in that modifications are negotiated between the Contractor and ESA / Engineer, as circumstances unfold. All method statements will form part of the EMP documentation and are subject to all terms and conditions contained within the EMP main document. (see standard Method statement sheet).

A method statement describes the scope of the intended work in a step by step description in order for the ESA and Engineer to understand the Contractors intentions. This will enable them to assist in devising any mitigation measures, which would minimise environmental impact during these tasks. For each instance wherein it is requested that the Contractor submit a method statement to the satisfaction of the ESA, the format should clearly indicate the following:

- **What** - a brief description of the work to be undertaken;
- **How** - a detailed description of the process of work, methods and materials;
- **Where** - a description/sketch map of the locality of work (if applicable); and
- **When** - the sequencing of actions with due commencement dates and completion date estimates.

The Contractor must submit the method statement before any particular construction activity is due to start. Work may not commence until the method statement has been approved by the ESA.
2.5 RECORD KEEPING

All records related to the implementation of this management plan (e.g. site instruction book, ESA diary, method statements) must be kept together in an office where it is safe and can be retrieved easily. These records should be kept for two years and should at any time be available for scrutiny by any relevant authorities.

It is recommended that photographs are taken of the site prior to, during and immediately after construction as a visual reference. These photographs should be stored with other records related to this EMP.

2.6 ENVIRONMENTAL COMPLETION STATEMENT

An Environmental Completion Statement is a report by the ESA to the relevant authorities stating completion of the project and compliance with the EMP and conditions. This statement replaces the final audit that is normally required for large development projects.

3 STANDARD MANAGEMENT PROGRAMME

3.1 Fauna and flora

Indigenous plants or wild animals (including reptiles, amphibians or birds etc.) may not be damaged or harmed. Vegetation removals as part of the development requirements are excluded. All incidents of harm to any animal or natural vegetation (apart from the agreed areas) must be reported to the ESA.

3.2 Services

Care and due cognisance must be taken of existing services, new service routes and service construction methods and restrictions. This aspect is often overlooked causing unnecessary environmental impact and costs.

3.3 Appropriate use of machinery

Contractor shall at all times carefully consider what machinery is appropriate to the task while minimising the extent of environmental damage.

3.4 Demarcating and fencing

In the event that sensitive features are threatened by construction activities, the temporary fencing off of these areas (for individual areas such as trees or rocks) or the construction area (when working in a mainly natural environment) is recommended. A two-strand barbed wire fence of approximately 1m high is considered adequate. All fencing and fence placement / positioning must be approved by the ESA on site.

Where the construction area is fenced, all activities including stockpiling must occur within this fenced area. The contractor should be fined and must pay for reinstatement or rehabilitation of damaged areas and features.

Work areas and access routes must be clearly demarcated to minimise environmental impact. Demarcation can take the form of colour coded pegs at least 1 m high. Danger tape may also be used for this purpose. All pegs and tape must be maintained.

3.5 Anti-erosion measures

The Contractor shall take appropriate and active measures to prevent erosion resulting from his own works, operations and activities as well as stormwater control measures to the satisfaction of the ESA / Engineer. Restoration costs are likely to be for the contractor’s account, should these measures not be reasonably implemented. Aspects normally covered in construction contracts in terms of “protection of works” are standard and are not to be billed or confused with any details covered under environmental requirements.

During construction the Contractor shall protect areas susceptible to erosion by installing all the necessary temporary and permanent drainage works as soon as possible. Other measures as may be necessary shall
be taken to prevent the surface water from being concentrated in streams and from scouring the slopes, banks or other areas. All such measures must be discussed with and approved by the ESA / Engineer. Measures can include cut off trenches, straw stabilising, brush packing etc.

A method statement is required from the Contractor prior to site clearing.

3.6 Fuel and service areas

Fuels and flammable materials are to be stored in suitably equipped storage areas. These areas shall comply with general fire safety requirements. Impervious materials are to be used in these storage areas to prevent contamination of the ground in the event of spillages or leaks. Quantities of fuels and hazardous materials stored on site should be appropriate to the requirement for these substances on site.

All vehicles, equipment, fuel and petroleum services and tanks must be maintained in a good condition that prevents leakage and possible contamination of soil or water supplies. The following recommendations should be implemented.

Refuelling areas should be bunded and lined to prevent spilled fuels and oils from contaminating the area. It is suggested that as a minimum that sandbags surround the bulk fuel supply tank, the floor of the area is to be lined with plastic and a layer of sand of approximately 50mm is placed on top of the plastic.

The park and service area should be treated with a suitable hydrocarbon absorption or remediation product. Absorbent spill mop-up products need to be on hand - Drizzit and products from Enretech should be investigated for these purposes.

All servicing must have a drip tray present to prevent accidental spillage of oils and fuels. A suitable leak proof container for the storage of oiled equipment (filters, drip tray contents and oil changes etc.) must be established. Fuels and oils must be safely located out of harms way from the elements and safety and fire prevention must be strictly adhered to. No fuel may be stored within the 1: 50 year flood line level. No fuel / oil containers may be left unattended within drainage areas. All spills are to be recorded in the ESA diary.

3.7 Concrete works

Cement powder has a high alkalinity pH rating, which can contaminate and effect both soil and water pH dramatically. A shift in pH can have serious consequences on the functioning of soil and water organisms and plants. The following recommendations must be implemented to minimise impact.

Cement contaminated water may not enter a natural or man-made (e.g. trench / sloot or dam) water system. Preventative measures include establishing sumps from where contaminated water can be either treated in situ or removed to an appropriate waste site.

Mixing areas to be carefully placed in consultation with the Engineer / ESA. If possible/appropriate ready mix concrete should be used. Cement bags are to be stored securely out of harms way from the elements (wind and rain). Excess or spilled concrete should be confined within the works area and then removed to a waste site.

3.8 Blasting / drilling

In the event that blasting or rock drilling is required, the following recommendations should be implemented.

The Contractor shall take all necessary precautions to prevent damage to special features and the general environment, which includes the removal of flyrock. Environmental damage caused by blasting / drilling shall be repaired at the Contractors expense to the satisfaction of the ESA and Engineer.

No blasting may be done on Sundays. Adequate warning must be provided prior to all blasting to all site staff and neighbours. All clear signals must also be clearly given. The Engineer and ESA must be given 24-hour notice before blasting events.

3.9 Fires
No fires may be allowed outside the construction area and adequate fire fighting equipment according to the fire hazard during the construction period must be available on site in good working order (at least one type ABC (all purpose) 12.5 kg extinguisher). Welding, gas cutting or cutting of metal will only be permitted inside the working areas.

The Contractor shall pay the costs incurred to organisations called to put out any fires started by him. The Contractor shall also pay any costs incurred to reinstate burnt areas as deemed necessary by the Engineer.

3.10 Refuse

The Contractor shall be responsible for the establishment of a refuse control system that is acceptable to the ESA. The Contractor shall ensure that waste and surplus food, food packaging and organic waste are not deposited by his employees anywhere on the site except in refuse bins for removal on a daily basis by the Contractor. Refuse bins shall be weather and animal-proof.

The Contractor must transport refuse collected from the working areas from site at least once a week. Refuse must be disposed of at a site approved by the ESA/Engineer.

For the purposes of this document refuse includes discarded construction materials such as steel reinforcing, wooden shuttering and timbers, cement bags, piping etc.

3.11 Toilets

The Contractor shall provide suitable sanitary arrangements near his offices and construction sites for his staff. A minimum of one toilet shall be provided per 15 persons at each working area or as stipulated by local authority or other relevant legislation.

Toilets shall be of a neat construction and shall be provided with doors and locks and shall be secured to prevent them blowing over. Sanitation provision and servicing shall be to the satisfaction of the Engineer. The Contractor shall ensure that toilets are emptied before any builders' holidays.

3.12 Dust control

The Contractor is to take appropriate measures to minimise the generation of dust as a result of construction works, to the satisfaction of the ESA. On sandy or very dusty sites, mulched indigenous vegetation which is to be removed from the site and is suitable, can be used as a method of stabilisation and dust control on any cleared or exposed sections of the site. Alternatively, straw stabilisation or watering can be used. Seed bearing invasive vegetation should not be used for this purpose.

3.13 Top material removal and stockpiling

Prior to construction or earthworks commencing on site, top material should be stripped from work sites and separately stockpiled for later use in rehabilitating damaged areas or for landscaping purposes.

3.14 Preparation of building material

All building materials are to be prepared at the batching plant, to enable the effects of cement and other substances, and the resulting effluent to be more easily managed.

3.15 Discharge of construction water

All cement effluent from mixer washings, and run-off from batching areas and other work areas shall be contained in suitable sedimentation ponds. Sedimentation ponds shall be allowed to dry out on a regular basis to allow for solid material to be removed. This material must be disposed of in a suitable manner, depending on the nature of the material, and to the discretion of the ESA, in consultation with the local authority.

Care must be taken to ensure that no water from the construction site enters the agricultural land adjacent to the site, or the natural watercourses.
3.16 Site clean up and rehabilitation

The Contractor must ensure that all structures, equipment, materials and facilities used or created on site for or during construction activities are removed once the project has been completed. The construction site shall be cleared, and cleaned to the satisfaction of the ESA.
## APPENDIX 2

### METHOD STATEMENT SHEET

**ENVIRONMENTAL METHOD STATEMENT**

(If the space provided is insufficient then attach additional sheets)

<table>
<thead>
<tr>
<th>WHAT: Subject of Method Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO: Site foreman/contact person:</td>
</tr>
<tr>
<td>Submitted to (e.g. ESA): Approved by:</td>
</tr>
<tr>
<td>Date Submitted on: Date approved:</td>
</tr>
<tr>
<td>WHEN: Date works start Date works complete</td>
</tr>
<tr>
<td>Rehabilitation period: Programme restrictions (critical path, season restrictions etc.)</td>
</tr>
<tr>
<td>Split work phasing: Item Start date End date</td>
</tr>
<tr>
<td>Phase 1</td>
</tr>
<tr>
<td>WHERE: Area of works – submit plan or sketch if appropriate – stockpile, detention ponds, boundaries / restriction of works, special features or mitigation works landscape specials etc:</td>
</tr>
<tr>
<td>HOW: Route/site layout pegged: Date available to inspect Inspection persons required:</td>
</tr>
<tr>
<td>Landscape concerns: (Specify items not covered in EMP. Refer to EMP items if required.)</td>
</tr>
<tr>
<td>Existing features &amp; services affected (e.g. paths, curbing, irrigation etc.)</td>
</tr>
<tr>
<td>Trees (protection or removal methods).</td>
</tr>
<tr>
<td>Special vegetation</td>
</tr>
<tr>
<td>Reinstatement methods</td>
</tr>
<tr>
<td>Maintenance</td>
</tr>
<tr>
<td>Restricted areas</td>
</tr>
<tr>
<td>HOW (cont.)</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Access:</td>
</tr>
<tr>
<td>Machinery:</td>
</tr>
<tr>
<td>Earthworks &amp; dust control:</td>
</tr>
<tr>
<td>Concrete works:</td>
</tr>
<tr>
<td>Storm-water control:</td>
</tr>
<tr>
<td>Stockpiles:</td>
</tr>
<tr>
<td>Refuse/rubble:</td>
</tr>
<tr>
<td>Water quality – pumping, source &amp; discharge points, settlement, filtration, duration etc:</td>
</tr>
<tr>
<td>Hydrocarbon control measures:</td>
</tr>
<tr>
<td>I&amp;AP notifications:</td>
</tr>
<tr>
<td>Fire/emergency contingencies:</td>
</tr>
<tr>
<td>Special conditions / mitigation measures (e.g. stream crossings, live sewer proximity etc):</td>
</tr>
<tr>
<td>Comments:</td>
</tr>
</tbody>
</table>
PY  PALISADE FENCING

PY 1  SCOPE

This specification covers the requirements for a concrete palisade type security fence.

The fence shall be installed in the positions shown on the drawings or as directed on site.

Alternative fence designs to suit a fencing manufacturer’s standard components will be considered and may be approved, provided that they are not in any way inferior to the requirements of this specification and provided that the Engineer’s prior approval is obtained.

PY 2  MATERIALS

PY 2.1  GENERAL

The security fence shall be of the industrial heavy duty type with all components manufactured by an approved manufacturer.

The fence shall comprise precast reinforced concrete posts and rails and intermediate pales surmounted by a continuous layer of galvanised rolled, razor edged steel wire.

PY 2.2  POSTS

Posts shall be trapezoidal in cross section with the narrow face rounded. An outward facing, cranked section 450 mm long by 80 mm wide, is to be cast integrally and is to have 3 holes to take tie wires to secure the barbed/razor wire. The posts shall be 3.0 m long overall.

The posts shall be suitably slotted to accept the top and bottom concrete rails with 1,72 m distance between the rail centres.

The concrete shall be Grade 30 (30 MPa) and pre-stressed with 4 No 4 mm tendons. The cranked section shall be reinforced with 4 No R10 cranked mild steel bars cast into the post.

PY 2.3  RAILS

(a) The top rail shall be of special shape, 150 mm overall from top to bottom and 100 mm overall from front to back. The rails shall be of 30 MPa concrete and be supplied in 2 m lengths reinforced with 2 No Y12 bars, each 1,97 m long and 1 No R.8 bar, 1,86 m long.

(b) The bottom rail shall be rectangular but with chamfered bottom edge, 150 mm O/A height x 55 mm O/A thickness. The concrete shall be Grade 30 (30 MPa) and the section shall be reinforced with one Y.10 bar and one R.8 bar each 1,97 m long.

PY 2.4  PALES

Pales shall be of 30 MPa reinforced concrete of triangular section 2.4 m O/A length x 150 mm front to back x 85 mm wide with radiused nose. They shall be reinforced with 2 No R.6 bars each 2.2 m long.

Each pale shall be suitably recessed to permit attachment to the top and bottom rails by wedge action and grouting.

The top surface of each pale shall be chamfered to enable rainwater run-off.

PY 2.5  FOUNDATIONS FOR POSTS AND STAYS
Each post and stay shall be encased in concrete for a depth of the foundation hole which shall be of the following dimensions:

(a) for posts:
   500 mm x 500 mm and a depth of 800 mm.

(b) for gate posts:
   600 mm x 600 mm and a depth of 800 mm and brought up to a height approximately 50 mm above ground level.

(c) for stays:
   The hole shall have a length of 600 mm along the line of the fence, and a width of 450 mm. Three sides shall be vertical, and the other shall slope down approximately 45° away from the post being stayed to a depth of 500 mm (The stay, when in position, shall be at approximately 45° to the post).

**PY 2.6 GROUND BEAMS**

If scheduled or shown on the drawings, ground beams shall be constructed of cast insitu grade 15 (15 MPa) concrete placed continuously between foundation blocks. The beams shall be 200 mm wide x 150 mm deep with the top floated surface 50 mm below finished ground level. The ground beams may be omitted, where in the opinion of the Engineer, the ground is sufficiently rocky to make them unnecessary.

**PY 2.7 GATES**

Gates shall be of mild steel hollow sections having continuously welded seams. The height of the gate(s) shall be the same as that of the fence, and razor edged steel wire sections shall coincide approximately with the corresponding sections of the fence. The main frame shall be filled with 50 mm x 25 mm x 3.0 mm upright hollow sections at 150 mm spacing. The main frame shall be of 150 mm x 75 mm x 4.5 mm hollow section supported by 150 mm x 150 mm x 6 mm hollow section gate post. The gate post shall be filled with Grade 15 concrete.

Double leaf gateways shall have a 4.8 m wide clear opening, with each leaf being of equal width. Single leaf gateway shall have a clear opening of 850 mm.

The frame of the single leaf gate shall be of 75 mm x 25 mm x 3.0 mm hollow section filled with 50 mm x 25 mm x 3.0 mm hollow sections to match the main gate.

Gates shall be of welded construction with all corners of the main frame members mitred. Gates shall have at least one horizontal hollow section bracing member of size 75 mm x 75 mm x 3.0 mm for double gates and 50 mm x 25 mm x 3.0 mm for single gates. Extension arms shall be provided for each vertical main frame member and these shall be attached by welding. All welds shall be continuous.

**PY 2.8 GALVANISING (OTHER THAN FOR WIRE MESH AND FENCING WIRE)**

All steelwork, comprising gate frames, gate post bracing members, etc shall be treated in the following manner after all drilling and welding has been completed:

(a) The surface shall be prepared for galvanising by being shot/grit blasted to Sa 2½ standard in accordance with Swedish Standard SIS 05-59-00, or alternatively be treated by some other method to achieve the same standard of preparation.

(b) The items shall then be hot dipped galvanised to the requirements of SANS 121 for heavy duty applications.
RFQ 291/2017/18: KNYSNA BOREHOLE E8 - CIVIL INSTALLATION NO.3

PY 2.9 CONCRETE BASES

Concrete shall be at least Grade 15 (15 MPa).

PY 3 CONSTRUCTION AND ERECTION

PY 3.1 ATTACHMENT TO POSTS

The gate posts shall be joined with a V-rail on top and a flat-rail at the bottom. The maximum spacing between the centres of the two rails shall be 1.72 m.

The poles shall be mounted on to the rails through the recesses and the gap between the rail and the cut out shall be caulked with a 2:1 sand cement caulking mix as shown on the drawings.

The gate posts will be independent of the palisade post but would share the same foundation.

The double leaf gate would be attached to the gate post by means of two hinges welded onto the gate post and frame as detailed on the drawings.

PY 3.2 FOUNDATIONS

(a) Fence Posts

Each post shall be encased with a 450 mm square x 800 mm deep concrete foundation block.

(b) Gate Posts

The gate post and fence post will share a foundation. They shall be encased in a 650 x 600 x 800 mm deep concrete foundation block.

PY 3.3 GATES

Gates shall be erected such that:

(a) there is a gap of not less than 35 mm and not more than 75 mm between the hinge stile(s) and the gate post;

(b) there is a clearance of not less than 50 mm and not more than 75 mm between the bottom horizontal frame member(s) and the ground; and

(c) when closed, there is a space of not more than 15 mm between the closing stile and the gate post in the case of single-leaf gates, and between the two closing stiles in the case of double-leaf gates.

Except where gates are installed over surfaced roadways, a full length concrete sill, rectangular in section having a width of at least 400 mm and depth of at least 225 mm, shall be installed under and on the line of the gates, with its top at ground level. The concrete shall be well vibrated to prevent voids being formed, and the top surface shall be floated and trowelled to an acceptable smoothness. The sleeves for the drop bolts shall be so set in the concrete sill, or concreted into the roadway (as relevant), that their tops are just above the level of the sill or roadway.

PY 3.4 MARKING
Each fence shall bear the manufacturer’s name on the main gate at eye level.

**PY 4  TOLERANCES**

**PY 4.1** Out-of-straightness of any member shall not exceed 3 mm/m length of the component.

**PY 8  MEASUREMENT AND PAYMENT**

The prices tendered shall include for the provision of all labour, plant and materials necessary to complete the work specified

**PY 8.1  Clearing fence route 1 m wide strip**

The unit of measurement for the clearing of the fence route shall be the linear metre of fence line cleared, measured in a straight along each fence line.

The tendered rate shall include full compensation for the clearing of the fence line as specified, including removing boulders of size up to 0,15 m³, grubbing of trees of girth up to 1 m, grubbing of tree stumps, cutting of trunks and branches exceeding 0,5 m girth into transportable lengths, backfilling of cavities and removing, transporting and disposing of material thus cleared, grubbed and cut.

**PY 8.2  Supply and erection of new steel palisade fencing:**

The rate for fencing shall include for all setting out, transporting and erection of the fence, all as specified including the gate. The measured length shall include the length of all gateways.
C4 SITE INFORMATION
C4.1 LOCATION OF THE WORKS

The location of the borehole and position of the rising main is indicated on the attached locality plan; MD1870-C-001. Works will be between the borehole site and the existing Glebe-Akkerkloof pipeline.

List of Co-ordinates:

<table>
<thead>
<tr>
<th>Work item location</th>
<th>Co-ordinate</th>
<th>Co-ordinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borehole E8</td>
<td>34° 0’22.79&quot;S</td>
<td>23° 7’4.52”E</td>
</tr>
<tr>
<td>Connection to existing</td>
<td>34° 0’35.65&quot;S</td>
<td>23° 7’13.49”E</td>
</tr>
<tr>
<td>Glebe/Akkerkloof pipeline</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C4.2 ACCESS TO THE WORKS

The Sites are accessible from normal suburban roads. Access to properties and any community related issues is to be undertaken in consultation with the Engineer’s Representative and Client if necessary.

C4.3 CLIMATE

Knysna experiences a moderate coastal climate with an all year rainfall. The average monthly rainfall is as follows:

<table>
<thead>
<tr>
<th>Month</th>
<th>Average Monthly Rainfall (mm)</th>
<th>Month</th>
<th>Average Monthly Rainfall (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>68</td>
<td>July</td>
<td>67</td>
</tr>
<tr>
<td>February</td>
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<td>August</td>
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<td>73</td>
<td>September</td>
<td>75</td>
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<td>78</td>
<td>October</td>
<td>90</td>
</tr>
<tr>
<td>May</td>
<td>71</td>
<td>November</td>
<td>74</td>
</tr>
<tr>
<td>June</td>
<td>69</td>
<td>December</td>
<td>65</td>
</tr>
</tbody>
</table>

C4.4 GEOTECHNICAL INFORMATION

Geotechnical information is not available. Excavation quantities in hard and intermediate rock are estimated.
C4.5 DRAWINGS