# NEC3 Engineering & Construction Contract

**Between** **ESKOM HOLDINGS SOC Ltd**
**(Reg No. 2002/015527/30)**

**and** **[Insert at award stage]**
**(Reg No. _____)**

**for** **Provision of Installation and Infrastructure Upgrade for Anti-climb Perimeter Security Fence at Eskom Megawatt Park (MWP) for a period of Forty-Seven (47) Months. (Eleven (11) months construction and Thirty-Six (36) months Maintenance and Support).**

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**CONTRACT No.** **[Insert at award stage]**

# Part C1: Agreements & Contract Data

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# C1.1 Form of Offer & Acceptance

## Offer

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

**Provision of Installation and Infrastructure Upgrade for Anti-climb Perimeter Security Fence at Eskom Megawatt Park (MWP) for a period of Forty-Seven (47) Months. (Eleven (11) months construction and Thirty-Six (36) months Maintenance and Support).**

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

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

| | | |
|---|---|---|
| Options B, | The offered total of the Prices exclusive of VAT is | **R** |
| | The first forecast of the total Defined Cost plus the Fee exclusive of VAT is | **R** |
| | Sub total | **R** |
| | Value Added Tax @ 15% is | **R** |
| | The offered total of the amount due inclusive of VAT is[1] | **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 including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s) .....

Name(s) .....

Capacity .....

**For the tenderer:** .....

*(Insert name and address of organisation)*

Name & signature of witness .....

Date .....

Tenderer's CIDB registration number (if applicable) .....

[1] This total is required by the *Employer* for budgeting purposes only. Actual amounts due will be assessed in terms of the *conditions of contract*.

## Acceptance

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

The terms of the contract, are contained in:

| | |
|---|---|
| Part C1 | Agreements and Contract Data, (which includes this Form of Offer and Acceptance) |
| Part C2 | Pricing Data |
| Part C3 | Scope of Work: Works Information |
| Part C4 | Site Information |

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data 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 tenderer receives one fully completed original copy signed between them of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now *Contractor*) within five working 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(s) | | |
| Name(s) | | |
| Capacity | | |
| **for the Employer** | Eskom Holdings SOC Ltd,<br>1 Maxwell Drive,<br>Sunninghill,<br>Sandton, 2157<br>*(Insert name and address of organisation)* | |
| Name & signature of witness | | Date |

Note: If a tenderer wishes to submit alternative tenders, use another copy of this Form of Offer and Acceptance.

## Schedule of Deviations to be completed by the *Employer* prior to contract award

Note:

1. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

| No. | Subject | Details |
|---|---|---|
| 1 | **Not Applicable[●]** | **Not Applicable[●]** |
| 2 | **[●]** | **[●]** |
| 3 | **[●]** | **[●]** |
| 4 | **[●]** | **[●]** |
| 5 | **[●]** | **[●]** |
| 6 | **[●]** | **[●]** |
| 7 | **[●]** | **[●]** |

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only 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 confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

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

| | **For the tenderer:** | **For the Employer** |
|---|---|---|
| Signature | | |
| Name | | |
| Capacity | | |
| On behalf of | *(Insert name and address of organisation)* | *(Insert name and address of organisation)*<br>Eskom Holdings SOC Ltd,<br>1 Maxwell Drive,<br>Sunninghill,<br>Sandton, 2157 |
| Name & signature of witness | | |
| Date | | |

# C1.2 ECC3 Contract Data

## Part one - Data provided by the *Employer*

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

| Clause | Statement | Data | |
|---|---|---|---|
| 1 | **General** | | |
| | The *conditions of contract* are the core clauses and the clauses for main Option | | |
| | | **B:** | **Priced contract with bill of quantities** |
| | dispute resolution Option | **W1:** | **Dispute resolution procedure** |
| | and secondary Options | | |
| | | **X1:** | **Price adjustment for inflation** |
| | | **X2** | **Changes in the law** |
| | | **X7:** | **Delay damages** |
| | | **X12:** | **Partnering** |
| | | **X16:** | **Retention** |
| | | **X17:** | **Low performance damages** |
| | | **Z:** | ***Additional conditions of contract*** |
| | of the NEC3 Engineering and Construction Contract, April 2013 (ECC3) | | |

| | | |
|---|---|---|
| 10.1 | The *Employer* is (Name): | **Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa** |
| | Address | **Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg** |
| 10.1 | The *Project Manager* is: (Name) | **[●]** |
| | Address | **Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg** |
| | Tel | **[●]** |
| | Fax | **[●]** |
| | e-mail | **[●]** |
| 10.1 | The *Supervisor* is: (Name) | **[●]** |
| | Address | **Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg** |
| | Tel No. | **[●]** |
| | Fax No. | **[●]** |
| | e-mail | **[●]** |
| 11.2(13) | The *works* are | **Upgrade the Eskom MWP security perimeter fence in accordance to provided specifications and approved Eskom standards provided as part of the contract and also included under the works information** |
| 11.2(14) | The following matters will be included in the Risk Register | • **The *Contractor* is aware that the site is operational during construction and provides the necessary security measures to ensure that security is not compromised.**<br>• **The *Contractor* is aware of the Eskom security requirements and standard that must be adhered to and complied with.**<br>• **Conditional assessments are conducted and accepted by Eskom representatives before the start of the *works*.**<br>• **All equipment shall be sourced from a reputable OEM, and installation shall be undertaken by OEM-accredited installers, supported by valid accreditation certificates issued or recognised by the OEM.**<br>• **Material As-built, operation, and maintenance information is available with limitations**<br>• **Further risks are identified at the initial project meeting and on an ongoing basis.** |

| | | |
|---|---|---|
| 11.2(15) | The *boundaries of the site* are | **MWP Perimeter fence areas that is approximately 4.2km long** |
| 11.2(16) | The Site Information is in | **Part 4: Site Information** |
| 11.2(19) | The Works Information is in | **Part 3: Scope of Work and all documents and drawings to which it makes reference.** |
| 12.2 | The *law of the contract* is the law of | **the Republic of South Africa** |
| 13.1 | The *language of this contract* is | **English** |
| 13.3 | The *period for reply* is | **Five (5) working days** |
| **2** | **The *Contractor's* main responsibilities** | **Data required by this section of the core clauses is provided by the *Contractor* in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.** |
| **3** | **Time** | |
| 11.2(3) | The *completion date* for the whole of the *works* is | **11 months (post formal contract appointment)** |

11.2(9) The *key date*s and the *condition*s to be met are:

| | ***Condition* to be met** | ***key date*** |
|---|---|---|
| **1** | **Notice of construction be given to Department of Labour** | **As per approved schedule** |
| **2** | **Security clearance of personnel and induction** | **As per approved schedule** |
| **3** | **Safety File Submission accepted, and staff induction completed** | **As per approved schedule** |
| **4** | **Formal notification of area to work on and formal approval – MWP security** | **As per approved schedule** |
| **5** | **Design Freeze (Review and acceptance)** | **As per approved schedule** |
| **6** | **Construction phase** | **As per approved schedule** |
| **7** | **Commissioning and Training** | **As per approved schedule** |
| **8** | **Hand Over** | **As per approved schedule** |

| | | | | |
|---|---|---|---|---|
| 30.1 | The *access dates* are: | **Part of the Site** | | **Date** |
| | | **1** | **Eskom Megawatt Park with all regulation approvals to access and work** | **Before execution of work** |
| 31.1 | The *Contractor* is to submit a first programme for acceptance within | **1 weeks of the Contract Date.** | | |
| 31.2 | The *starting date* is | **2 weeks after contract signing** | | |
| 32.2 | The *Contractor* submits revised programmes at intervals no longer than | **2 weeks.** | | |
| 35.1 | The *Employer* is not willing to take over the *works* before the Completion Date. | **All *works* are completed before the *Employer* takes over the *works* – full work completed** | | |
| **4** | **Testing and Defects** | | | |
| 42.2 | The *defects date* is | **36 months after Completion of the whole of the *works*.** | | |
| 43.2 | The *defect correction period* is | **Three (3) working days** | | |
| **5** | **Payment** | | | |
| 50.1 | The *assessment interval* is | **On the 25 day of each successive month. Subject to receipt of compliant documentation** | | |
| 51.1 | The *currency of this contract* is the | **South African Rand.** | | |
| 51.2 | The period within which payments are made is | **4 weeks** | | |
| 51.4 | The interest rate is | **the publicly quoted prime rate of interest (calculated on a 365 day year) charged from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands and**<br><br>**(ii) the LIBOR rate applicable at the time for amounts due in other currencies. LIBOR is the 6 month London Interbank Offered Rate quoted under the caption "Money Rates" in The Wall Street Journal for the applicable currency or if no rate is quoted for the currency in question then the rate for United States Dollars, and if no such rate appears in The Wall Street Journal then the rate as quoted by the Reuters Monitor Money Rates Service (or such service as may replace the Reuters Monitor Money Rates Service) on the due date for the payment in question, adjusted *mutatis mutandis* every 6 months thereafter and as certified, in the event of any dispute, by any manager employed in the foreign exchange department of The Standard Bank of South Africa Limited, whose appointment it shall not be necessary to prove.** | | |

| | | |
|---|---|---|
| **6** | **Compensation events** | |
| 60.1(13) | The place where weather is to be recorded is: | **Sunninghill, Gauteng and surrounding areas to the site** |
| | The *weather measurements* to be recorded for each calendar month are, | **the cumulative rainfall (mm)**<br>**the number of days with rainfall more than 10 mm**<br>**the number of days with minimum air temperature less than 0 degrees Celsius**<br>**the number of days with snow lying at 09:00 hours South African Time**<br>**and these measurements:** |
| | The *weather measurements* are supplied by | **The South African Weather Bureau at the nearest station next to the site.** |
| | The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at: | |
| | and which are available from: | **the South African Weather Bureau and included in Annexure A to this Contract Data provided by the *Employer*** |
| 60.1(13) | Assumed values for the ten year return *weather data* for each *weather measurement* for each calendar month are: | **As stated in Annexure A to this Contract Data provided by the *Employer*.**<br>**Note: If this arrangement is used, delete the rows above for 60.1(13) and delete this note.** |
| **7** | **Title** | **The contractor removes Equipment from the Site when it is no longer needed unless the *Project Manager* allows it to be left in the works.** |
| **8** | **Risks and insurance** | |
| 80.1 | These are additional *Employer*'s risks | **1. Crime**<br>**2. Vandalism** |
| **9** | **Termination** | **The termination clause shall be adopted in its totality.** |
| **10** | **Data for main Option clause** | |
| **B** | **Priced contract with bill of quantities** | |
| 60.6 | The *method of measurement* is | **Option B published by NEC 3 Engineering and Construction Contract of June 2005 and amended as stated in Part C2.1, Pricing Assumptions.** |
| **11** | **Data for Option W1** | |
| W1.1 | The *Adjudicator* is | **the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of** |

| | | |
|---|---|---|
| | | **Adjudicators by the Party intending to refer a dispute to him. (see www.ice-sa.org.za). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).** |
| | Address | **TBA** |
| | Tel No. | **TBA** |
| | Fax No. | **TBA** |
| | e-mail | **TBA** |
| W1.2(3) | The *Adjudicator nominating body* is: | **the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See www.ice-sa.org.za ) or its successor body.** |
| W1.4(2) | The *tribunal* is: | **arbitration.** |
| W1.4(5) | The *arbitration procedure* is | **the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.** |
| | The place where arbitration is to be held is | **Gauteng in South Africa** |
| | The person or organisation who will choose an arbitrator<br>- if the Parties cannot agree a choice or<br>- if the arbitration procedure does not state who selects an arbitrator, is | **the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.** |

## 12 Data for secondary Option clauses

| | | | | |
|---|---|---|---|---|
| **X1** | **Price adjustment for inflation** | | | |
| X1.1(a) | The *base date* for indices is | **CPI applicable if project is 12 months or more. Base date is one month prior to tender close** | | |
| X1.1(c) | The proportions used to calculate the Price Adjustment Factor are: | **proportion** | **linked to index for** | **Index prepared by** |
| | | **0.20** | **Labour** | **Statistics South Africa or an approved industry labour index** |
| | | **0. 45** | **Construction, civil and fencing material** | **Statistics South Africa, P0151.1 applicable CPAP work-group indices** |

| | | | | |
|---|---|---|---|---|
| | | **0. 20** | **Electrical, security and plant equipment** | **Statistics South Africa, P0151.1 applicable electrical, mechanical, plant and equipment indices** |
| | | **0.15** | **non-adjustable** | **Not applicable** |
| | Total | **1.00** | | |
| | | **The contract will be fixed for one year, thereafter CPAP will be applicable using STATSSA indices for escalation.** | | |

| | | |
|---|---|---|
| **X2** | **Changes in the law** | **There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.** |
| **X7** | **Delay damages** | |
| X7.1 | Delay damages for Completion of the whole of the *works* are | **R10,000.00 per day up to a limit of 20% of the Contract Value.** |
| **X12** | **Partnering** | |
| X12.1(1) | The *Client* is (Name) | **[●]** |
| | Address | **[●]** |
| | Tel | **[●]** |
| | Fax | **[●]** |
| X12.2(1) | The *Client's* objective is. | **[●]** |
| X12.1(4) | The Partnering Information is in | **[●]** |

| | | | |
|---|---|---|---|
| **X16** | **Retention (not used with Option F)** | | |
| X16.1 | The *retention free amount* is<br><br>The *retention percentage* as per table below | | |

| **Milestone** | **Release** | **Cumulative** | **Balance** |
|---|---|---|---|
| Practical Completion, start of maintenance and support | 50% | 50% | 50% |
| 12 months after Practical Completion | 25% | 75% | 25% |
| 24 months after Practical Completion | 12.5% | 87.5% | 12.5% |
| 36 months / completion of maintenance and support | 12.5% | 100% | 0% |

| | | | |
|---|---|---|---|
| **X17** | **Low performance damages** | | |
| X17.1 | The amounts for low performance damages are: | **Amount**<br><br>**R 200,000.00 or cost of low performance damages stated** | **Performance level**<br><br>**Including and not limited to the following: Poor workmanship, inferior material quality or failure to follow accepted Method Statements and Quality Control Plans (QCP).** |
| **X18** | **Limitation of liability** | | |
| X18.1 | The *Contractor*'s liability to the *Employer* for indirect or consequential loss is limited to: | **R0.0 (zero Rand)** | |
| X18.2 | For any one event, the *Contractor*'s liability to the *Employer* for loss of or damage to the *Employer*'s property is limited to: | **the amount of the deductibles relevant to the event** | |
| X18.3 | The *Contractor*'s liability for Defects due to his design which are not listed on the Defects Certificate is limited to | **The greater of**<br>• **the total of the Prices at the Contract Date and**<br>• **the amounts excluded and unrecoverable from the *Employer*'s assets policy for correcting the Defect (other than the resulting physical damage which is not excluded) plus the applicable deductible as at contract date.** | |
| X18.4 | The *Contractor*'s total liability to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters, is limited to: | **the total of the Prices other than for the additional excluded matters.**<br><br>**The *Contractor's* total liability for the additional excluded matters is not limited.**<br><br>**The additional excluded matters are amounts for which the *Contractor* is liable under this contract for** | |

| | | |
|---|---|---|
| | | • **Defects due to his design which arise before the Defects Certificate is issued,**<br>• **Defects due to manufacture and fabrication outside the Site,**<br>• **loss of or damage to property (other than the *works*, Plant and Materials),**<br>• **death of or injury to a person and**<br>• **infringement of an intellectual property right.** |
| X18.5 | The *end of liability date* is | **(i) Seven 7 years after the *defects date* for latent Defects and**<br><br>**(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.**<br><br>**A latent Defect is a Defect which would not have been discovered on reasonable inspection by the *Employer* or the *Supervisor* before the *defects date*, without requiring any inspection not ordinarily carried out by the *Employer* or the *Supervisor* during that period.**<br>**If the *Employer* or the *Supervisor* do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the *Employer* or the *Supervisor* to have discovered the Defect.** |
| **Z** | **The *Additional conditions of contract* are** | **Z1 to Z15 always apply.** |

## Z1 Cession delegation and assignment

Z1.1 The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer.*

Z1.2 Notwithstanding the above, the *Employer* may on written notice to the *Contractor* cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.

## Z2 Joint ventures

Z2.1 If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the *Employer* for the performance of this contract.

Z2.2 Unless already notified to the *Employer*, the persons or organisations notify the *Project Manager* within two weeks of the Contract Date of the key person who has the authority to bind the *Contractor* on their behalf.

Z2.3 The *Contractor* does not alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.

**Z3 Change of Broad Based Black Economic Empowerment (B-BBEE) status**

Z3.1 Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor*'s B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.

Z3.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Project Manager* within thirty days of the notification or as otherwise instructed by the *Project Manager*.

Z3.3 Where, as a result, the *Contractor's* B-BBEE status has decreased since the Contract Date the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor*'s obligation to Provide the Works.

Z3.4 Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination. If the *Employer* terminates in terms of this clause, the procedures on termination are P1, P2 and P3 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

**Z4 Confidentiality**

Z4.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to Others. This undertaking does not, however, apply to information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Contractor* disclose information to Others in terms of clause 25.1, the *Contractor* ensures that the provisions of this clause are complied with by the recipient.

Z4.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Project Manager*.

Z4.3 In the event that the *Contractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Contractor*, to the extent permitted by law prior to disclosure, notifies the *Employer* so that an appropriate protection order and/or any other action can be taken if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the *Contractor* may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed.

Z4.4 The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Project Manager*. All rights in and to all such images vests exclusively in the *Employer*.

Z4.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

**Z5 Waiver and estoppel: Add to core clause 12.3:**

Z5.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *Project Manager*, the *Supervisor*, or the *Adjudicator* does not constitute a waiver of rights, and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.

**Z6 Health, safety and the environment: Add to core clause 27.4**

Z6.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *works*. Without limitation the *Contractor*:

- accepts that the *Employer* may appoint him as the "Principal Contractor" (as defined and provided for under the Construction Regulations 2014 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Site;
- warrants that the total of the Prices as at the Contract Date includes a sufficient amount for proper compliance with the Construction Regulations, all applicable health & safety laws and regulations and the health and safety rules, guidelines and procedures provided for in this contract and generally for the proper maintenance of health & safety in and about the execution of *works*; and
- undertakes, in and about the execution of the *works*, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

Z6.2 The *Contractor*, in and about the execution of the *works*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

**Z7 Provision of a Tax Invoice and interest. Add to core clause 51**

Z7.1 Within one week of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice in accordance with the *Employer*'s procedures stated in the Works Information, showing the amount due for payment equal to that stated in the payment certificate.

Z7.2 If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.

Z7.3 The *Contractor* (if registered in South Africa in terms of the companies Act) is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer*'s VAT number 4740101508 on each invoice he submits for payment.

**Z8 Notifying compensation events**

Z8.1 Delete from the last sentence in core clause 61.3, "unless the *Project Manager* should have notified the event to the *Contractor* but did not".

**Z9 *Employer's* limitation of liability**

Z9.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)

Z9.2 The *Contractor*'s entitlement under the indemnity in 83.1 is provided for in 60.1(14) and the *Employer*'s liability under the indemnity is limited.

**Z10 Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":**

Z10.1 or had a business rescue order granted against it.

## Z11 Addition to secondary Option X7 Delay damages (if applicable in this contract)

Z11.1 If the amount due for the *Contractor*'s payment of delay damages reaches the limits stated in this Contract Data for Option X7 or Options X5 and X7 used together, the *Employer* may terminate the *Contractor*'s obligation to Provide the Works using the same procedures and payment on termination as those applied for reasons R1 to R15 or R18 stated in the Termination Table.

## Z12 Ethics

For the purposes of this Z-clause, the following definitions apply:

**Affected Party** means, as the context requires, any party, irrespective of whether it is the *Contractor* or a third party, such party's employees, agents, or Subcontractors or Subcontractor's employees, or any one or more of all of these parties' relatives or friends,

**Coercive Action** means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,

**Collusive Action** means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,

**Committing Party** means, as the context requires, the *Contractor*, or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractor or the Subcontractor's employees,

**Corrupt Action** means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,

**Fraudulent Action** means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,

**Obstructive Action** means a Committing Party unlawfully or illegally destroying, falsifying, altering or concealing information or making false statements to materially impede an investigation into allegations of Prohibited Action, and

**Prohibited Action** means any one or more of a Coercive Action, Collusive Action Corrupt Action, Fraudulent Action or Obstructive Action.

Z12.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.

Z12.2 The *Employer* may terminate the *Contractor*'s obligation to Provide the Services if a Committing Party has taken such Prohibited Action and the *Contractor* did not take timely and appropriate action to prevent or remedy the situation, without limiting any other rights or remedies the *Employer* has. It is not required that the Committing Party had to have been found guilty, in court or in any other similar process, of such Prohibited Action before the *Employer* can terminate the *Contractor*'s obligation to Provide the Services for this reason.

Z12.3 If the *Employer* terminates the *Contractor*'s obligation to Provide the Services for this reason, the amounts due on termination are those intended in core clauses 92.1 and 92.2.

Z12.4 A Committing Party co-operates fully with any investigation pursuant to alleged Prohibited Action. Where the *Employer* does not have a contractual bond with the Committing Party, the *Contractor* ensures that the Committing Party co-operates fully with an investigation.

**Z13 Insurance**

**Z 13.1 Replace core clause 84 with the following:**

**Insurance cover 84**

**84.1** When requested by a Party, the other Party provides certificates from his insurer or broker stating that the insurances required by this contract are in force.

**84.2** The *Contractor* provides the insurances stated in the Insurance Table A.

**84.3** The insurances provide cover for events which are at the *Contractor*'s risk from the *starting date* until the earlier of Completion and the date of the termination certificate.

**INSURANCE TABLE A**

| Insurance against | Minimum amount of cover or minim limit of indemnity |
|---|---|
| Loss of or damage to the *work*s, Plant and Materials | The replacement cost where not covered by the *Employer*'s insuranc<br><br>The *Employer*'s policy deductible, as Contract Date, where covered by the *Employer*'s insurance |
| Loss of or damage to Equipment | The replacement cost |
| Liability for loss of or damage to property (except the *work*s, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract | Loss of or damage to property<br>*Employer*'s property<br>The replacement cost where not covered by the *Employer*'s insuranc<br><br>The *Employer*'s policy deductible, as Contract Date, where covered by the *Employer*'s insurance<br><br>Other property<br>The replacement cost<br><br>Bodily injury to or death of a person<br>The amount required by applicable l |
| Liability for death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract | The amount required by the applicat law |

**Z 13.2 Replace core clause 87 with the following:**
The *Employer* provides the insurances stated in the Insurance Table B.

**INSURANCE TABLE B**

| Insurance against or name of policy | Minimum amount of cover or minimum l of indemnity |
|---|---|
| Assets All Risk | Per the insurance policy document |
| Contract Works insurance | Per the insurance policy document |
| Environmental Liability | Per the insurance policy document |
| General and Public Liability | Per the insurance policy document |
| Transportation (Marine) | Per the insurance policy document |
| Motor Fleet and Mobile Plant | Per the insurance policy document |
| Terrorism | Per the insurance policy document |
| Cyber Liability | Per the insurance policy document |
| Nuclear Material Damage and Business Interruption | Per the insurance policy document |
| Nuclear Material Damage Terrorism | Per the insurance policy document |

## Z14 Nuclear Liability

Z14.1 The *Employer* is the operator of the Koeberg Nuclear Power Station (KNPS), a nuclear installation, as designated by the National Nuclear Regulator of the Republic of South Africa, and is the holder of a nuclear licence in respect of the KNPS.

Z14.2 The *Employer* is solely responsible for and indemnifies the *Contractor* or any other person against any and all liabilities which the *Contractor* or any person may incur arising out of or resulting from nuclear damage, as defined in Act 47 of 1999, save to the extent that any liabilities are incurred due to the unlawful intent of the *Contractor* or any other person or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z14.3 Subject to clause Z14.4 below, the *Employer* waives all rights of recourse, arising from the aforesaid, save to the extent that any claims arise or liability is incurred due or attributable to the unlawful intent of the *Contractor* or any other person, or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z14.4 The *Employer* does not waive its rights provided for in section 30 (7) of Act 47 of 1999, or any replacement section dealing with the same subject matter.

Z14.5 The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.

## Z15 Asbestos

For the purposes of this Z-clause, the following definitions apply:

**AAIA** means approved asbestos inspection authority.

**ACM** means asbestos containing materials.

| | |
|---|---|
| **AL** | means action level, i.e. a level of 50% of the OEL, i.e. 0.1 regulated asbestos fibres per ml of air measured over a 4 hour period. The value at which proactive actions is required in order to control asbestos exposure to prevent exceeding the OEL. |
| **Ambient Air** | means breathable air in area of work with specific reference to breathing zone, which is defined to be a virtual area within a radius of approximately 30cm from the nose inlet. |
| **Compliance Monitoring** | means compliance sampling used to assess whether or not the personal exposure of workers to regulated asbestos fibres is in compliance with the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles. |
| **OEL** | means occupational exposure limit. |
| **Parallel Measurements** | means measurements performed in parallel, yet separately, to existing measurements to verify validity of results. |
| **Safe Levels** | means airborne asbestos exposure levels conforming to the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles. |
| **Standard** | means the *Employer*'s Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles. |
| **SANAS** | means the South African National Accreditation System. |
| **TWA** | means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the baseline of a 4-hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA. |

Z15.1 The *Employer* ensures that the Ambient Air in the area where the *Contractor* will Provide the Services conforms to the acceptable prescribed South African standard for asbestos, as per the regulations published in GNR 155 of 10 February 2002, under the Occupational Health and Safety Act, 1993 (Act 85 of 1993) ("Asbestos Regulations"). The OEL for asbestos is 0.2 regulated asbestos fibres per millilitre of air as a 4-hour TWA, averaged over any continuous period of four hours, and the short term exposure limit of 0.6 regulated asbestos fibres per millilitre of air as a 10-minute TWA, averaged over any 10 minutes, measured in accordance with HSG248 and monitored according to HSG173 and OESSM.

Z15.2 Upon written request by the *Contractor*, the *Employer* certifies that these conditions prevail. All measurements and reporting are effected by an independent, competent, and certified occupational hygiene inspection body, i.e. a SANAS accredited and Department of Employment and Labour approved AAIA. The *Contractor* may perform Parallel Measurements and related control measures at the *Contractor*'s expense. For the purposes of compliance the results generated from Parallel Measurements are evaluated only against South African statutory limits as detailed in clause Z15.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.

Z15.3 The *Employer* manages asbestos and ACM according to the Standard.

Z15.4 In the event that any asbestos is identified while Providing the Services, a risk assessment is conducted and if so required, with reference to possible exposure to an airborne concentration of above the AL for asbestos, immediate control measures are implemented and relevant air monitoring conducted in order to declare the area safe.

Z15.5 The *Contractor*'s personnel are entitled to stop working and leave the contaminated area forthwith until such time that the area of concern is declared safe by either Compliance

Monitoring or an AAIA approved control measure intervention, for example, per the emergency asbestos work plan, if applicable.

Z15.6 The *Contractor* continues to Provide the Services, without additional control measures presented, on presentation of Safe Levels. The contractually agreed dates to Provide the Services, including the Completion Date, are adjusted accordingly. The contractually agreed dates are extended by the notification periods required by regulations 3 and 21 of the Asbestos Regulations, 2001.

Z15.7 Any removal and disposal of asbestos, asbestos containing materials and waste, is done by a registered asbestos contractor, instructed by the *Employer* at the *Employer*'s expense, and conducted in line with South African legislation.

# Annexure A: One-in-ten-year-return *weather data* obtained from SA Weather Bureau for [weather station]

If any one of these *weather measurements* recorded within a calendar month, before the Completion Date for the whole of the *works* and at the place stated in this Contract Data is shown to be more adverse than the amount stated below then the *Contractor* may notify a compensation event.

| | *Weather measurement* | | | | |
|---|---|---|---|---|---|
| Month | Cumulative rainfall (mm) | Number of days with rain more than 10mm | Number of days with min air temp < 0 deg.C | Number of days with snow lying at 08:00 CAT | [Other measurements if applicable] |
| January | **[●]** | **[●]** | **[●]** | **[●]** | |
| February | **[●]** | **[●]** | **[●]** | **[●]** | |
| March | **[●]** | **[●]** | **[●]** | **[●]** | |
| April | **[●]** | **[●]** | **[●]** | **[●]** | |
| May | **[●]** | **[●]** | **[●]** | **[●]** | |
| June | **[●]** | **[●]** | **[●]** | **[●]** | |
| July | **[●]** | **[●]** | **[●]** | **[●]** | |
| August | **[●]** | **[●]** | **[●]** | **[●]** | |
| September | **[●]** | **[●]** | **[●]** | **[●]** | |
| October | **[●]** | **[●]** | **[●]** | **[●]** | |
| November | **[●]** | **[●]** | **[●]** | **[●]** | |
| December | **[●]** | **[●]** | **[●]** | **[●]** | |

Only the difference between the more adverse recorded weather and the equivalent measurement given above is taken into account in assessing a compensation event.

# C1.2 Contract Data

## Part two - Data provided by the *Contractor*

**[Instructions to the contract compiler: (delete this notes before issue to tenderers with an enquiry)** Whenever a cell is shaded in the left hand column it denotes this data is optional. If not required select and delete the whole row, otherwise insert the required Data.]

**Notes to a tendering contractor:**

1. Please read both the NEC3 Engineering and Construction Contract (April 2013) and the relevant parts of its Guidance Notes (ECC3-GN)[2] in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 (April 2013) Guidance Notes.
2. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data
3. Where a form field like this [ is required here] appears, data is required to be inserted relevant to the option selected. Click on the form field ***once*** and type in the data. Otherwise complete by hand and in ink.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

| Clause | Statement | Data |
|---|---|---|
| 10.1 | The *Contractor* is (Name):<br>Address<br>Tel No.<br>Fax No. | |
| 11.2(8) | The *direct fee percentage* is<br>The *subcontracted fee percentage* is | |
| 11.2(18) | The *working areas* are the Site and | **Offsite engineering & workshops including those of subcontractors and suppliers.** |
| 24.1 | The *Contractor's* key persons are:<br>1 Name:<br>Job:<br>Responsibilities:<br>Qualifications:<br>Experience:<br>2 Name:<br>Job<br>Responsibilities: | |

[2] Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009 or see www.ecs.co.za

| | | | | |
|---|---|---|---|---|
| | Qualifications:<br>Experience: | **CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .** | | |
| 11.2(3) | The *completion date* for the whole of the *works* is | TBC | | |
| 11.2(14) | The following matters will be included in the Risk Register | • The contractor will need to be aware that the site will be operational during construction and should provide the necessary security measures to ensure that security is not compromised.<br>• Further risks to be identified at the initial project meeting and on an ongoing basis.<br>• The contractor will need to be aware of the Eskom security requirements to adhere to and standards to comply with.<br>• Conditional assessment to be conducted and accepted by Eskom representatives, prior to start on site. This includes designs.<br>• Reputable OEM used with accredited installers, where required. | | |
| 11.2(19) | The Works Information for the *Contractor*'s design is in: | | | |
| 31.1 | The programme identified in the Contract Data is | | | |
| **B** | **Priced contract with bill of quantities** | | | |
| 11.2(21)<br>11.2(31) | The *bill of quantities* is in<br>The tendered total of the Prices is | **(in figures)**<br>**(in words), excluding VAT** | | |
| | **Data for Schedules of Cost Components** | *Note "SCC" means Schedule of Cost Components starting on page 60, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC3 (April 2013).* | | |
| **B** | **Priced contract with bill of quantities** | **Data for the Shorter Schedule of Cost Components** | | |
| 41 in SSCC | The percentage for people overheads is: | **%** | | |
| 21 in SSCC | The published list of Equipment is the last edition of the list published by<br>The percentage for adjustment for Equipment in the published list is | **Minus %** | | |
| 22 in SSCC | The rates of other Equipment are: | **Equipment** | **Size or capacity** | **Rate** |

| | | | |
|---|---|---|---|
| 61 in SSCC | The hourly rates for Defined Cost of design outside the Working Areas are<br>**Note: Hourly rates are estimated 'cost to company of the employee' and not selling rates.**<br>**Please insert another schedule if foreign resources may also be used** | **Category of employee** | **Hourly rate** |
| 62 in SSCC | The percentage for design overheads is | **%** | |
| 63 in SSCC | The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are: | | |

# C1.3 Forms of Securities

## Pro forma Retention Money Guarantee (may be used when Option X16 applies)

***(to be reproduced exactly as shown below on the letterhead of the Bank providing the Guarantee)***

Eskom Holdings SOC Limited
Megawatt Park
Maxwell Drive
Sandton
Johannesburg **Date:**

**Dear Sirs**

**Reference No.** [●] ***[Drafting Note: Bank reference number to be inserted]***

Retention Money Guarantee**:** ***[Drafting Note: Name of Contractor to be inserted]***

**Project [ ] : Contract Reference:** ***[Drafting Note: Contractor contract reference number to be inserted]***

1. In this Guarantee the following words and expressions shall have the following meanings:-

1.1 "Bank" - means [●], [●] Branch, (Registration No. [●]); [Drafting Note: Name of Bank to be inserted]

1.2 "Bank's Address" - means [●]; [Drafting Note: Bank's physical address to be inserted]

1.3 "Contract" – means the written agreement relating to the Project, entered into between Eskom and the Contractor, on or about the [●] day of [●] 200[●] (Contract Reference No. ……. as amended, varied, restated, novated or substituted from time to time; [Drafting Note: Signature Date and Contract reference number to be inserted]

1.4 "Contractor" – means [●] a company registered in accordance with the laws of [●] under Registration Number [●]. [Drafting Note: Name and details of Contractor to be inserted]

1.5 "Eskom" - means Eskom Holdings SOC Limited, a company registered in accordance with the laws of the Republic of South Africa under Registration Number 2002/015527/30

1.6 "Expiry Date" - means the date on which the Defects Certificate is issued in terms of the Contract.

1.7 "Guaranteed Sum" - means the sum of R [●] ([●] Rand); [Drafting Note: Insert amount of Retention Money Guarantee.].

1.8 "Project" - means the……..

2. At the instance of the Contractor, we the undersigned _____ and _____, in our respective capacities as _____ and _____ of the Bank, and duly authorized thereto, confirm that we hold the Guaranteed Sum at the disposal of Eskom, as security for the proper performance by the Contractor of all of its obligations in terms of and arising from the Contract and hereby undertake to pay to Eskom, on written demand from Eskom received prior to the Expiry Date, any sum or sums not exceeding in total the Guaranteed Sum.
3. A demand for payment under this guarantee shall be made in writing at the Bank's address and shall:

3.1 be signed on behalf of Eskom by a director of Eskom or his authorised delegate.

3.2 state the amount claimed ("the Demand Amount');

3.3 state that the Contractor has failed to carry out his obligation(s) to rectify certain defect(s) for which he is responsible under the Contract (and the nature of such defect(s)) alternatively that the Demand Amount is payable to Eskom in the circumstances contemplated in the Contract.

4. Notwithstanding the reference herein to the Contract the liability of the Bank in terms hereof is as principal and not as surety and the Bank's obligation/s to make payment:

4.1 is and shall be absolute provided demand is made in terms of this bond in all circumstances; and

4.2 is not, and shall not be construed to be, accessory or collateral on any basis whatsoever.

5. The Bank's obligations in terms of this Guarantee:

5.1 shall be restricted to the payment of money only and shall be limited to the maximum of the Guaranteed Sum; and

5.2 shall not be discharged and compliance with any demand for payment received by the Bank in terms hereof shall not be delayed by the fact that a dispute may exist between Eskom and the Contractor.

6. Eskom shall be entitled to arrange its affairs with the Contractor in any manner which it sees fit, without advising us and without affecting our liability under this Guarantee. This includes, without limitation, any extensions, indulgences, release or compromise granted to the Contractor or any variation under or to the contract

7. Should Eskom cede its rights against the Contractor to a third party where such cession is permitted under the Contract, then Eskom shall be entitled to cede to such third party the rights of Eskom under this Guarantee on written notification to the Bank of such cession.

8. This Guarantee:

8.1 shall expire on the Expiry Date until which time it is irrevocable;

8.2 is, save as provided for in 7 above, personal to Eskom and is neither negotiable nor transferable;

8.3 shall be returned to the Bank upon the earlier of payment of the full Guaranteed Sum or expiry hereof;

8.4 shall be regarded as a liquid document for the purpose of obtaining a court order; and

8.5 shall be governed by and construed in accordance with the law of the Republic of South Africa and shall be subject to the jurisdiction of the Courts of the Republic of South Africa.

8.6 Any claim which arises or demand for payment received after expiry date will be invalid and unenforceable.

9. The Bank chooses domicilium citandi et executandi for all purposes in connection with this Guarantee at the Bank's Address.
Signed at _____ Date _____ Bank's seal or stamp

For and behalf of the Bank

Bank Signatory: _____ Bank Signatory: _____

Witness: _____ Witness: _____

# Pro forma ASGI-SA Guarantee

*(to be reproduced exactly as shown below on the letterhead of the Bank providing the Guarantee)*

Eskom Holdings Limited
Megawatt Park
Maxwell Drive
Sandton
Johannesburg

**Date:**

Dear Sirs

Reference No. [●] *[Drafting Note: Bank reference number to be inserted]*

Pro-Forma ASGI-SA Guarantee: *[Drafting Note: Name of Contractor to be inserted]*

**Project [ ] Contract Reference: [●] *[Drafting Note: Contractor contract reference number to be inserted]***

1. In this Guarantee the following words and expressions shall have the following meanings:-

1.1 "Bank" - means [●], [●] Branch, (Registration No. [●]); [Drafting Note: Name of Bank to be inserted]

1.2 "Bank's Address" - means [●]; [Drafting Note: Bank's physical address to be inserted]

1.3 "Contract" – means the written agreement relating to the Project, entered into between the *Employer* and the *Contractor*, on or about the [●] day of [●] 200[●] (Contract Reference No. **[●]** as amended, varied, restated, novated or substituted from time to time; [Drafting Note: Signature Date and Contract reference number to be inserted]

1.4 "*Contractor*" – means [●] a company registered in accordance with the laws of [●] under Registration Number [●]. [Drafting Note: Name and details of Contractor to be inserted]

1.5 "*Contractor's* ASGI-SA Obligations" – means the *Contractor's* ASGI-SA Obligations under and as defined in the Contract.

1.6 "*Employer*" - means Eskom Holdings Limited, a company registered in accordance with the laws of the Republic of South Africa under Registration Number 2002/015527/06.

1.7 "Expiry Date" - means the [●] day of [●] 200[●]; [Drafting Note: anticipated date of issue of ASGI-SA Performance Certificate to be inserted.]

1.8 "Guaranteed Sum" - means the sum of R [●] ([●] Rand);

1.9 "Project" – means the ……

2. At the instance of the *Contractor*, we the undersigned _____ and _____, in our respective capacities as _____ and _____ of the Bank, and duly authorized thereto, confirm that we hold the Guaranteed Sum at the disposal of the *Employer*, as security for the proper performance by the *Contractor* of the *Contractor's* ASGI-SA Obligations and hereby undertake to pay to the *Employer*, on written demand from the *Employer* received prior to the Expiry Date, any sum or sums not exceeding in total the Guaranteed Sum.

3. A demand for payment under this guarantee shall be made in writing at the Bank's address and shall:

3.1 state the amount claimed ("the Demand Amount');

3.2 state that the Demand Amount is payable to the *Employer* in the circumstances contemplated in the Contract.

4. Notwithstanding the reference herein to the Contract the liability of the Bank in terms hereof is as principal and not as surety and the Bank's obligation/s to make payment:

4.1 is and shall be absolute provided demand is made in terms of this bond in all circumstances; and

4.2 is not, and shall not be construed to be, accessory or collateral on any basis whatsoever.

5. The Bank's obligations in terms of this Guarantee:

5.1 shall be restricted to the payment of money only and shall be limited to the maximum of the Guaranteed Sum; and

5.2 shall not be discharged and compliance with any demand for payment received by the Bank in terms hereof shall not be delayed, by the fact that a dispute may exist between the *Employer* and the *Contractor*.

6. The *Employer* shall be entitled to arrange its affairs with the *Contractor* in any manner which it sees fit, without advising us and without affecting our liability under this Guarantee. This includes, without limitation, any extensions, indulgences, release or compromise granted to the *Contractor* or any variation under or to the Contract.

7. Should the *Employer* cede its rights against the *Contractor* to a third party where such cession is permitted under the Contract, then the *Employer* shall be entitled to cede to such third party the rights of the *Employer* under this Guarantee on written notification to the Bank of such cession.

8. This Guarantee:

8.1 shall expire on the Expiry Date until which time it is irrevocable;

8.2 is, save as provided for in **Error! Reference source not found.** above, personal to the *Employer* and is neither negotiable nor transferable;

8.3 shall be returned to the Bank upon the earlier of payment of the full Guaranteed Sum or expiry hereof;

8.4 shall be regarded as a liquid document for the purpose of obtaining a court order; and

8.5 shall be governed by and construed in accordance with the law of the Republic of South Africa and shall be subject to the jurisdiction of the courts of the Republic of South Africa.

8.6 Any claim which arises or demand for payment received after expiry date will be invalid and unenforceable.

9. The Bank chooses domicilium citandi et executandi for all purposes in connection with this Guarantee at the Bank's Address.

Signed at _____ Date _____

For and behalf of the Bank

Bank Signatory: _____ Bank Signatory: _____

Witness: _____ Witness: _____

Bank's seal or stamp

# PART 2: PRICING DATA
## ECC3 Option B

| Document reference | Title | No of pages |
|---|---|---|
| C2.1 | Pricing assumptions: Option B | |
| C2.2 | The *bill of quantities* | |

# C2.1 Pricing assumptions: Option B

## 1. How work is priced and assessed for payment

Clause 11 in NEC3 Engineering and Construction Contract (ECC3) Option B states:

| | | |
|---|---|---|
| **Identified and defined terms** | 11<br>11.2 | (21) The Bill of Quantities is the *bill of quantities* as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.<br><br>(28) The Price for Work Done to Date is the total of<br><br>• the quantity of the work which the *Contractor* has completed for each item in the Bill of Quantities multiplied by the rate and<br>• a proportion of each lump sum which is the proportion of the work covered by the item which the *Contractor* has completed.<br><br>Completed work is work without Defects which would either delay or be covered by immediately following work.<br><br>(31) The Prices are the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities. |

This confirms that Option B is a re-measurement contract and the bill comprises only items measured using quantities and rates or stated as lump sums. Value related items are not used. Time related items are items measured using rates where the rate is a unit of time.

## 2. Function of the Bill of Quantities

Clause 55.1 in Option B states, “Information in the Bill of Quantities is not Works Information or Site Information”. This confirms that specifications and descriptions of the work or any constraints on how it is to be done are not included in the Bill, but in the Works Information. This is further confirmed by Clause 20.1 which states, “The *Contractor* Provides the Works in accordance with the Works Information”. Hence the *Contractor* does **not** Provide the Works in accordance with the Bill of Quantities. The Bill of Quantities is only a pricing document.

## 3. Guidance before pricing and measuring

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract Guidance Notes before preparing the *bill of quantities* or before entering rates and lump sums into the *bill*.

There is no general provision in Option B for payment for materials on Site before incorporation into the *works*. If secondary Option X14 Advanced payment has not been used then the tendering contractor may obtain the same effect by inserting appropriate items in the method related charges where the *method of measurement* allows, or alternatively making allowance in the rates of the *bill of quantities* for the financing of Plant and Materials until they are incorporated in the *works.*

When compensation events arise, the default position is that the Bill of Quantities is not used to calculate the cost effect of the event. Defined Cost and the resulting Fee is used and Defined Cost includes all components of cost which the *Contractor* is likely to incur, including so called P & G items. Rates and lump sums from the Bill of Quantities, or from any other source, may be used instead of Defined Cost and the Fee only if the *Contractor* and *Project Manager* agree. If they are unable to agree, then Defined Cost plus

Fee is used.

# 4. Measurement and payment

## 4.1. Symbols

The units of measurement described in the Bill of Quantities are metric units abbreviated as follows:

| Abbreviation | Unit |
|---|---|
| % | percent |
| H | hour |
| Ha | hectare |
| Kg | kilogram |
| Kl | kilolitre |
| Km | kilometre |
| km-pass | kilometre-pass |
| kPa | kilopascal |
| kW | kilowatt |
| L | litre |
| M | metre |
| Mm | millimetre |
| $m^2$ | square metre |
| $m^2$-pass | square metre pass |
| $m^3$ | cubic metre |
| $m^3$-km | cubic metre-kilometre |
| MN | meganewton |
| MN.m | meganewton-metre |
| MPa | megapascal |
| No. | number |
| Sum | Lump sum |
| T | tonne (1000kg) |

## 4.2. General assumptions

4.2.1. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.

4.2.2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit and everything necessary as incurred or required by the *Contractor* in carrying out or providing that item.

4.2.3. An item against which no Price is entered will be treated as covered by other Prices or rates in the *bill of quantities*.

4.2.4. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment by the *Project Manager* at each assessment date will be used for determining payments due.

4.2.5. The short descriptions of the items of payment given in the *bill of quantities* are only for the purposes of identifying the items. Detail regarding the extent of the work entailed under each item is provided in the Works Information.

## 4.3. Departures from the *method of measurement*

## 4.4. Amplification of or assumptions about measurement items

The following is provided to assist in the interpretation of descriptions given in the *method of measurement*. In the event of any ambiguity or inconsistency between the statements in the *method of measurement* and this section, the interpretation given in this section shall be used.

# C2.2 the *bill of quantities*

Use this page as a summary page or as a cover page to the *bill of quantities* and also complete BOQ in Excel document, uploaded.

| Bill no. | Description | Amount (R) |
|---|---|---|
| 1 | PRELIMINARIES AND GENERAL | |
| 2 | CONTRACTOR'S DESIGN, INVESTIGATIONS, TRAINING AND HANDOVER | |
| 3 | OUTER BARRIER – EXISTING PERIMETER | |
| 4 | CLOSURE OF THE EXISTING BUS GATE | |
| 5 | NON-LETHAL ENERGISED PERIMETER DETECTION SYSTEM (ELECTRIC FENCE) | |
| 6 | PERIMETER AND GATE LIGHTING | |
| 7 | CCTV, INTRUDER DETECTION AND NETWORK | |
| 8 | GATES AND ACCESS CONTROL | |
| 9 | PATROL ROAD, STORMWATER AND VEGETATION CONTROL | |
| 10 | MV AND LV ELECTRICAL INFRASTRUCTURE | |
| 11 | OPERATIONAL MAINTENANCE, WARRANTY AND SUPPORT AFTER COMPLETION (36 MONTHS) | |
| | **Sub-total A: Construction, commissioning and handover (Bills 1 to 10)** | |
| | **Sub-total B: Operational maintenance, 36 months (Bill 11)** | |
| | **TOTAL TENDER PRICE (excluding VAT) - carried to Cover** | |
| 15% | VAT at the rate in column A (input) | |
| | **TOTAL TENDER PRICE (including VAT)** | |

CONTRACT NUMBER _____

# PART 3: SCOPE OF WORK

| Document reference | Title | No of pages |
|---|---|---|
| | This cover page | 1 |
| C3.1 | *Employer*'s Works Information | |
| C3.2 | *Contractor*'s Works Information | |
| | Total number of pages | |

# C3.1: EMPLOYER'S WORKS INFORMATION

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# 1 Description of the *works*

## 1.1 Executive overview

This Project upgrades the perimeter security of the Eskom Megawatt Park campus. Which entails the following:

- Replacement of the Outer Barrier.
- Installation New None Lethal Energized Electric Fence.
- Installation of New Lighting Design.
- Installation of New Camera System.
- Upgrading of the Main and Western Gates.
- Upgrading of the Emergency (Bus) Gate.
- Refurbishment of the Patrol Roads.

The outline of the scope is further detailed within the Employers requirements.

## 1.2 *Employer*'s objectives and purpose of the *works*

The *works* is intended to provide a complete security solution for the perimeter of the Eskom Megawatt Park Campus

## 1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

| **Abbreviation** | **Meaning given to the abbreviation** |
|---|---|
| AFC | Approved for construction |
| ERE | Eskom Real Estate |
| MWP | Megawatt Park |
| OBL | Outside battery limits |

## 1.4 Existing System

MWP consists of three entrances/exit gates: Main, western and the emergency gate. The perimeter fence is approximately 4.2km long with approximately 162 light poles. The perimeter fence consists of an outer steel and face brick palisade barrier, climb detection system and outer non-lethal electric fence. Internal to the perimeter fence is a patrol road.

# 2 Management and start up.

## 2.1 Management meetings

Regular meetings of a general nature may be convened and chaired by the *Project Manager* as follows:

| Title and purpose | Approximate time & interval | Location | Attendance by: |
|---|---|---|---|
| Risk register | Weekly | Eskom Megawatt Park | *Employer*, *Contractor*, *Supervisor*, and Designing team |
| Overall contract progress and feedback | Weekly | Eskom Megawatt Park | *Employer*, *Contractor*, *Supervisor*, and Designing team |
| Compensation events | When required | Eskom Megawatt Park | *Employer*, *Contractor*, *Supervisor*, and Designing team |
| Look ahead schedule etc | Fortnightly | Eskom Megawatt Park | *Employer*, *Contractor*, *Supervisor*, and Designing team |

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *works*. Records of these meetings shall be submitted to the *Project Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

## 2.2 Documentation control

All documents supplied by the *Contractor* are subject to Eskom's acceptance. The language of all documentation is English.

The *Contractor* includes the *Employer's* drawing number in the drawing title block. This requirement only applies to design drawings developed by the *Contractor* and *Subcontractors*.

Drawing numbers are assigned by the *Employer* as drawings are developed.

The *Contractor* complies a Master Document List (MDL) which contains a list of all documents issued for review, document number, document title, transmittal number, date of submission, overall document review status. The MDL is a live document, the contractor issues an updated MDL within the progress report to the *Project Manager*

## 2.3 Health and safety risk management

The *Contractor* shall comply with the health and safety requirements contained in Annexure for health and safety to this Works Information.

## 2.4 Environmental constraints and management

The *Contractor* shall comply with the environmental criteria and constraints stated.

## 2.5 Quality assurance requirements

The *Contractor* complies to the following documents when working at/rendering a service to Eskom but not limited to the following:

i. 240-12248652 - List of Tender Returnable/Quality Requirement Document – Category 3

ii. 240-68099512 - FORM A: Tender & Contract Quality Requirements for QM 58 and Quality Requirements For ISO 9001 Standard

iii. 240-105658000 (QM 58)- Supplier Quality Management: Specification

iv. 240-109253698- Contract Quality Plan (CQP)

v. 240-109253302- Quality Control Plan (QCP)/ Inspection and Test Plan (ITP)

After the acceptance of the construction drawings the *contractor* submits the associated construction Method Statements and relevant QCP/ITP for acceptance and determination of intervention points prior to construction.

Failure to comply with an accepted Method Statement/QCP or ITP may result the issuing of a NCR, rejection of the works as well as the withholding of payment until the appropriate remedial actions have occurred.

1. The *Contractor* demonstrates, provide and maintains a Quality Management System that is ISO 9001:2015 certified or compliant thereto. Compliance with the provisions of this clause in no way relieves the *Contractor* of the final responsibility to furnish an acceptable product and/or services.

2. The *Contractor* agrees to control and professionally preserve and store appropriate documents, records, and recordings for a period of at least 3 years after termination of the agreement to guarantee the traceability of the services rendered and inspection thereof.

3. The *Contractor* agrees to regularly update and implement all the latest technology available as well as the necessary improvements for the installation, production and organisation deemed necessary to meet the requirements of the agreement and to enhance all system capabilities and effectiveness to deliver high quality, cost-effective services.

4. The delivered product and / or services shall be uniform in Quality and condition, sound and free from defects or external copyright or intellectual property rights, consistent with good industry practices and adhere to requested Eskom requirements, without deviation.

5. Eskom shall have the right to conduct surveys and perform surveillance of the *Contractor's* and/or *Sub-Contractor* facilities to evaluate their capability to comply with the requirements necessary to conform to contractual requirements.

6. Eskom reserves the right to inspect, at reasonable times, any or all the *work* included in the Works Information at the *Contractor's* or *Sub-Contractor's* premises or elsewhere. Verification by Eskom shall not absolve the *Contractor* of the responsibility to provide acceptable product and / or services, nor shall it preclude subsequent rejection by Eskom.

7. The services must comply with the agreed specifications and the applicable directives and technical standards set out in the contract and annexures. Defects notified by Eskom shall be remedied by the Contractor upon demand by Eskom without undue delay and at no extra cost. The Contractor shall continuously monitor and identify non-conformances, both internal and external, as signals of opportunities for improvement making process and other relevant changes to prevent recurrence.

8. The *Contractor* shall further identify potential problems before they occur by identifying deviations in patterns or trends in product, service or process performance.

9. Nothing contained in the contract and/or scope of work and /or works information shall relieve in any way the Contractor from the obligation of quality control thereof.

10. The *Contractor* guarantees that the quantity, quality and outward appearance of the delivered Product / services comply with the requirements of the contract and/or relevant specifications.

11. The *Contractor* shall, on request, prove its ability to relate to the proposed scope of work which establishes the way the Contractor intends to perform the Contract.

12. The *Contractor* shall, on request, prove its organisational, logistics and support resources to ensure the requirements of the contract can and will be achieved.

13. Eskom reserves the right to assess and measure, during the existence of the agreement, the qualifications, capability and competence of the key staff (assigned personnel) in relation to the scope of work and to interview any / all Contractors to confirm the Quality evaluation.

14. The professional personnel who will be conducting the service will be available on a continuous basis until the conclusion of the project.

15. The *Contractor* shall demonstrate experience in comparable projects or specific aspects of the project and / or performance in similar projects, on request.

16. The Quality of the service / product and the contents thereof will always be in accordance with professional standards.

17. For the duration of the Contract, the professional staff rendering the service / product, must be and remain a member of his/her Professional Society (where available/applicable)

18. The *Contractor* must, at all relevant times, scrutinise and be aware of Eskom's requirements with specific focus on, inter alia, its philosophy, principles , strategies , practises , mission , vision , models, policies and practises.

19. It is the *Contractor's* obligation to ensure that their operations and the products and services it provides to Eskom comply with any applicable statutes and or regulations. Any non-compliance by the Contractor and the resultant corrective actions shall be the responsibility of the Contractor.

20. The *Contractor* shall ensure that he complies with the works information and that appropriate quality requirements (as in the main contract) are included in subcontracts placed by Contractors to ensure subcontractor's compliance with the works Information.

21. The *Contractor* shall execute the Works in accordance with Eskom's Quality requirements set out in QM 58 document: Supplier Contract Quality Requirements Specification.

## 2.6 Programming constraints

A programme showing the key activities is to be submitted with the tender documents or once appointed within two weeks. The *Contractor* submits a single integrated programme that incorporates all the work to be performed including that of his Sub*contractor*s.

The interfaces between Sub*contractor*s as well as the interfaces between Sub*contractor*s and the *Contractor* are clearly identified.

Project key dates are incorporated into the programme.

All critical path items are indicated and outlined on the programme.

The order and timing of operations which the Contractor plans to provide the works. Strict adherence to the programme will be monitored and updated on fortnightly basis to achieve the completion dates and submitted to Eskom Project Co-ordinator. Non-conformance to the stated programme will be liable for delay damages. Any deviations on time and cost are subject to Eskom approval.

The *Contractor* provides the Project Programme in Microsoft Projects Format to the level 3 detail. The programme is to be updated weekly and submitted to the *Project Manager* for review.

## 2.7 *Contractor*'s management, supervision and key people

The *Contractor* provides the *Employer* with a detailed organogram of all staff and management on the contract, showing their lines of authority and communication, within two weeks of contract award. This is revised monthly and reflects any changes to the staff and management structure. The *Employer* reserves the right to audit and verify the structure. The *Contractor* has a full-time Safety and Health Officers onsite.

## 2.8 Invoicing and payment

Within one week of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the *Project Manager's* payment certificate.

The *Contractor* shall address the tax invoice to Eskom Holdings SOC Ltd and include on each invoice the following information:

- Name and address of the *Contractor* and the *Project Manager;*
- The contract number and title;
- *Contractor*'s VAT registration number;
- The *Employer*'s VAT registration number 4740101508;
- Description of service provided for each item invoiced based on the Price List;
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;
- (add other as required)

Add procedures for invoice submission and payment (e. g. electronic payment instructions)

## 2.9 Insurance provided by the *Employer*

*Contractor* familiarises themselves with the Eskom Insurance Format A as provided in the Contract Data and make provision for all items that they are liable for.

## 2.10 Contract change management

The *Employer* instructs changes to the scope at any time, each instruction sets out the change and the date on which it becomes effective; and is issued to the *Contractor* in writing to be valid.

## 2.11 Provision of bonds and guarantees

The form in which a bond or guarantee required by the *conditions of contract* (if any) is to be provided by the *Contractor* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

The *Employer* may withhold payment of amounts due to the *Contractor* until the bond or guarantee required in terms of this contract has been received and accepted by the person notified to the *Contractor* by the *Project Manager* to receive and accept such bond or guarantee. Such withholding of payment due to the *Contractor* does not affect the *Employer*'s right to termination stated in this contract.

## 2.12 Records of Defined Cost, payments & assessments of compensation events to be kept by the *Contractor*

Not Applicable

## 2.13 Training workshops and technology transfer

*Contractor* shall provide training to Eskom's technical team on how the installed equipment and systems must be operated. This training must be recorded.

# 3 Engineering and the *Contractor*'s design

The *Contractor* provides preliminary designs by registered engineers to the *Project Manager* for acceptance. These would have to be reviewed with possible amendments having to be made to comply with Eskom requirements. Adequate time is allowed for this. After acceptance of preliminary designs, the *Contractor* provides detailed designs.

## 3.1 *Employer*'s design requirements

The *works* entails the upgrading of the perimeter security for the Eskom Megawatt Park campus. Which entails the following including the scope detailed within the following section (*Contractor's* design):

- Replace the Outer Barrier:
    - The replacement of the outer barrier where a vehicle collision had occurred.
    - The construction of a new outer barrier to close off the existing bus gate and ensure the uniform continuation of the composite high security system.
    - Assessment of the Existing outer barrier to identify potential security risks.
    - The Contractor removes all existing steel palisade panels and installs a new high security system, the details or which are included within the Civil Design Scope 3.2.1.
    - Prevents vegetation growth between outer barrier and electric fence.
    - Ensure the outer barrier is a uniform minimum 3m height from NGL on the outside

- Installation of the New Non-Lethal Energized Electric Fence:
    - The installation of a new perimeter fence system and associated infrastructure (includes and not limited to, new structural supports, new electrical supply, energisers, and new zones), in accordance with the Eskom Security and electrical requirements (240-78980848).
    - At the Main and Western gates, the Electric Fence begins and terminates at relevant gates (from the perimeter line of the spike and boom) ensuring a complete electrical barrier throughout MWP.
    - The electric fence controller unit will via the energizer alarm output trigger the security lights covering that zone.
    - The zones shall be designed such that the failure of an energiser shall not result in any single zone being unprotected.
    - Each zone shall be no more than 100m measured along the fence line.
    - The Electric Fence has a speaker system with the functionality that during an intruder detection at a specific zone, either an alarm is sounded, or communication is broadcast from the security control room to the impacted zone.
    - Assess the integrity of the Earthing and provide the certificate of competency in accordance with

      240-56356396.
    - Installation of access points (gates) at every zone within the electric fence to allow the maintenance of the outer barrier, when closed the gate needs to act as part of the electric fence.
    - The design of the new electric fence makes consideration of false alarms triggered from vegetation overgrowth as well as cutting of cables during grass cutting.

- Installation of a new Electrical Ring Supply along the fence for all the electrical requirements for the perimeter security (Fence, cameras, lights, and motors)
- The decommission and removal of the existing system including the climb detection.
- Replace three mini substations feeding the Fence with 11/0.4kv 500kVA prefabricated mini substations.

- Provision for Future expansion (additional Inner Barrier):
  - The *Contractor* allows for the future expansion of the perimeter fence, should the campus be classified as a National Key Point and thus requiring a three-tier fence system.

- Installation of New Lighting Design:
  - The *Contractor* installs Energy Efficient Perimeter lighting, in accordance with the Eskom Security Lighting (240-139282493) and Electrical Standard.
  - Lights to be zoned as per the new electric fence and camera zones.
  - The installed lighting system has the capability of either being constantly on or lighting up specific zones in the event of intruders and to assist security.
  - The Lighting design at the entrances accommodates vehicle searches by security personnel.
  - Ensure the perimeter lighting poles are spaced to meet the required lux distribution and positioned to allow for the future construction of the third tier.

- Installation of New Cameras:
  - The *Contractor* designs the Perimeter camera system in line with 240-91190304, the cameras are mounted on the light masts at a minimum spacing of 60m apart. The camera arrangement ensures clear identification.
  - The *Contractor* installs cameras at all three gates (Main, Western and Emergency (Bus)) and along the perimeter that are linked to the security monitoring system.
  - The cameras have the functionality of intruder detection to alert security of a possible events in a particular zone as well as illuminate that area.
  - The Cameras are designed to be installed on the perimeter lighting poles. Based on the capability of the proposed cameras, the spacing between cameras is determined by the *Contractor's* design.

- Security System
  - The *Contractor* installs a ring communication network, focusing specifically on the performance, security, and conformance to basic internet protocol connectivity, around the perimeter.
  - The ring network is then daisy chained through a redundant dual network system linked to the MWP Security control room situated in the basement of the building.
  - All security solutions and equipment are designed to interface with the existing MWP security monitoring systems
  - All statutory signage, network equipment, power supplies, surge protection and peripherals form part of the *Contractor's* scope for design, supply, and installation.

- The *Contractor* installs a back-up solution in a form of portable battery units to ensure the perimeter camera identification and detection systems remain functional in the event of a power outage with adequate capacity to supply until the changeover to the site generators supply is established.

- Upgrading of the Main and Western Gates:
  - The *Contractor* removes and installs new spike and boom systems with battery backup during the changeover to generator power. The equipment installed has a daily cycle limited suitable to the security operations and traffic flows of the megawatt campus (approximately 4500 cars per day).
  - The interlocking boom gates with spikes are designed to prevent unauthorised persons or vehicles from tailgating.
  - All Entrance lanes consist of a single spike and boom combination, with the spikes positioned to limit bi-directional intrusion. The spikes are flush mounted.
  - All Exit lanes consist of an interlocking spike and boom system (Sally Port) with the spikes positioned to limit bi-directional intrusion. The spikes are flush mounted.
  - At the truck lanes a single spike and boom system is installed that is compatible with heavy vehicle loads as well as has the capability of being disabled by security.
  - The Lighting and camera design accommodates vehicle searches by security personnel within the lanes.
  - At the western gate, the *Contractor* repairs the existing sliding gates and tracks and installs new motors that are compatible to the gates of this size and weight.

- Creation of the New Emergency (Bus) Gate:
  - The Contractor installs new 2 x 2.5m (length) swing gates that are in line with the outer barrier and has a minimum height of 3m.
  - The *Contractor* installs a sliding gate that is in line with the electric fence and continues the electric barrier across the emergency gate. The Gate has an electrically isolated handle to allow for manual operation
  - The swing gates installed are motorize ready.
  - The Lighting and camera design accommodates normal surveillance at the gate.
  - The electrical infrastructure (lighting, sockets within the guardhouse and electric motor) at the gate is upgraded to meet the electrical requirements at and around the emergency gate.

- Refurbishment of the Patrol Roads
  - The *Contractor* creates a suitable patrol road which is next to the electric fence (and the future inner third tier)
  - The patrol road is a “dirt road” in accordance with the existing patrol road.
  - The *Contractor* creates culvert crossings at the points where the existing stormwater crosses the boundary wall.
  - The *Contractor* creates a stormwater crossing at the emergency gate to allow for the easy of security vehicles to cross over the road while monitoring the site boundary.

- Refurbishment and relocation of electrical infrastructure:
    - Replace the existing Parking mini-substation with 500kVA mini-substation and install the new mini-substation 1km towards the West Gate ,as indicated on drawing number 0.50/45006 sheet 1 rev 0.
    - Replace and relocated the Bus Depot mini substation with 500kVA mini substation.
    - Replace the Sports-Field mini substation with 500kVA mini substation.
    - Creation of Electric ring supply for the perimeter fence infrastructure
    - Creation of electrical supply to the emergency gate
    - Replacement of the East and West Horticulture Minisubs
    - Provision of electrical supply to the emergency gate for lighting, power sockets within the security guard house, motors for sliding gate and boom gate, and security cameras. The electrical supply to emergency gate is from Kiosk number 2 which shall be upgraded. Alternatively new electrical supply shall be sourced from the parking mini sub via new electrical kiosk which shall be installed in the vicinity of emergency gate

## 3.2 Parts of the *works* which the *Contractor* is to design

The *Contractors works* includes the Scope listed within the Employer's design and what is listed within this section.

### 3.2.1 Civil Design Scope

The *Contractor*'s Engineer develops an inception report which includes and not limited to a list of the required site investigations (geotechnical investigation and land survey), proposed layouts and proposed concepts. Once this is accepted the Contractor may begin with the development of the detailed design and construction drawings.

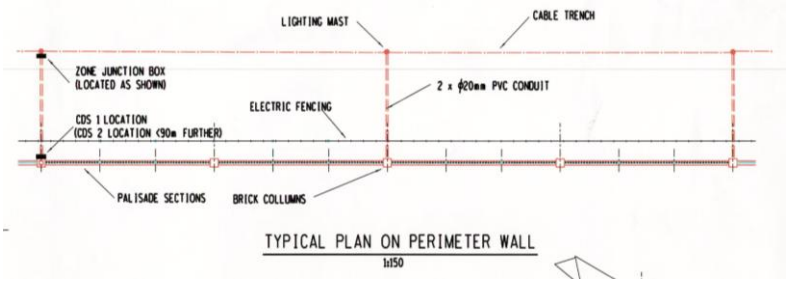
The Civil *works* consists of:

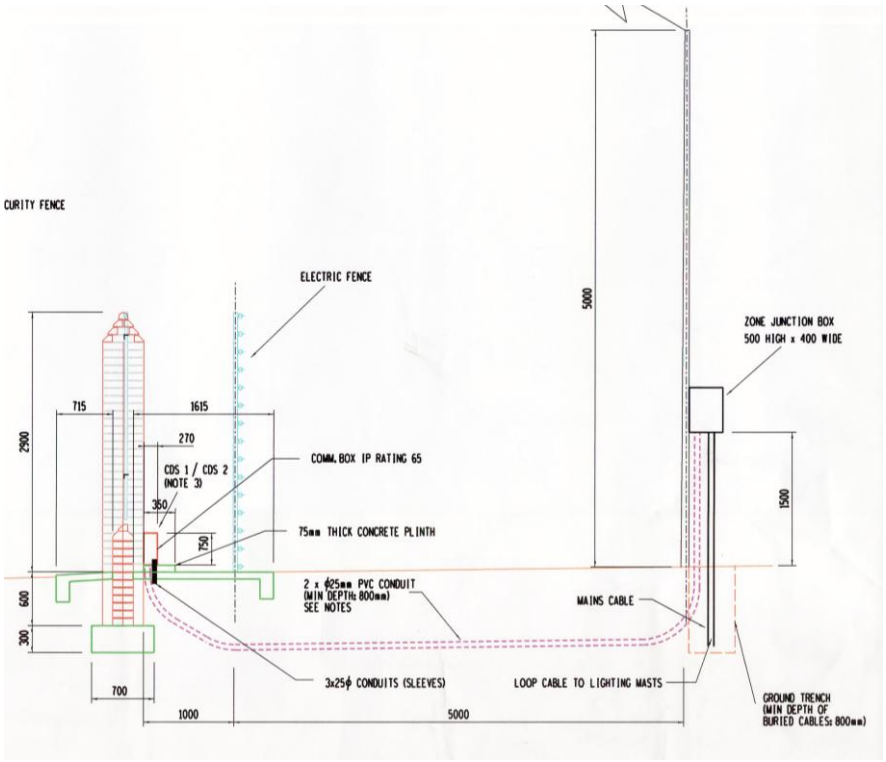
#### 3.2.1.1 Outer Barrier

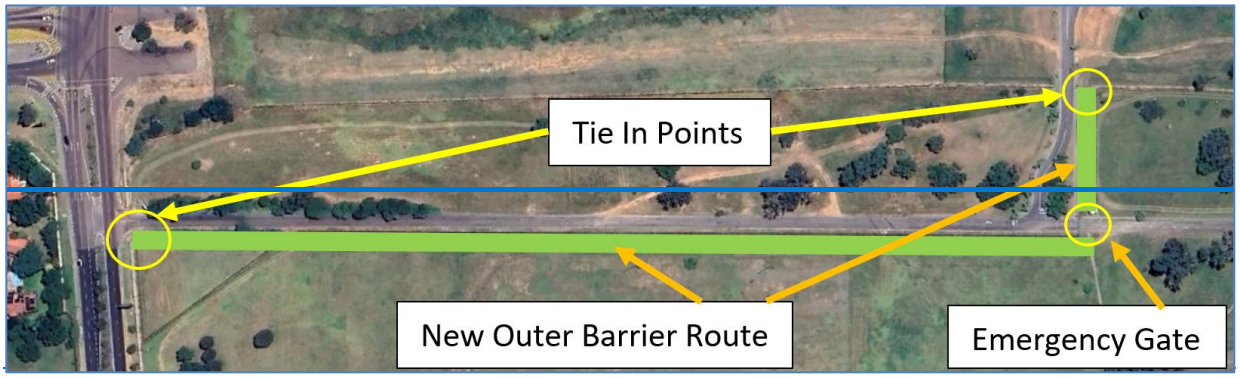
The existing outer barrier consists of:

- face brick/ steel palisade wall
- height of minimum 2.4m above NGL (2.9m for the brick piers/columns) and including strip footing minimum 0.9m below NGL (anti-tunnelling)
- 75mm thick apron slab extending 715mm outwards and 1615mm inwards with ground beams (Anti-tunnelling and stormwater and vegetation control), as indicated in the following figure.

Drawing 0.50/45006 Sheet 1 Indicates a cross section of the wall. Image below is an extract of the drawing.






The *works* consists of constructing a new composite outer barrier closing the bus road. As shown in the image below.




The *Contractor* designs and implements the stormwater management required from closure of the gate.

The *Contractor* ensures the new wall is tied into the existing wall and associated systems (anti-tunnelling, stormwater, and vegetation control), ensuring a uniform security barrier.

The *Contractor* conducts a land survey to ensure the proposed wall route is no impacting existing waterways, conducts Site clearance, stabilising and grading to ensure a uniform transition for the wall.

Where applicable the contractor repair, designs and constructs erosion control measure as shown in image below



The *Contractor* designs to withstand heavy rainfall events as well as possible soil erosion effects.

The concrete strength for the wall foundations is 25MPa.

The *Contractor* repairs the panels of the outer barrier that were damaged by the vehicle collision.

The *Contractor* shall repair and reinstate all blocked or damaged weep holes to ensure proper drainage and prevent excessive hydrostatic pressure buildup behind the wall, thereby reducing the risk of wall failure or toppling during periods of heavy rainfall.

The *Contractor* removes all the steel palisade panels along the outer perimeter and replaces it with a high security barrier. The *Contractor* maintains the security integrity of the MWP perimeter whilst conducting the *works.*

The panels are to be installed within the face brick piers/columns. The new panel ensure an outer barrier height of minimum 3m above ground.

The *Contractor* uses the existing steel columns and installs additional structural steel columns to support the panels were needed. The repair and corrosion protection of the existing columns consists of but not limited to:

- mechanically removing all previous paint and corrosion.
- applying an appropriate high-quality polymer based waterborne rust converter;
- applying a waterborne, anti-corrosive primer for mild and galvanised steel;
- apply an appropriate topcoat with a colour to match the new panels;
- all paints are submitted to the *Project Manager* prior to application and applied according to the manufacture's specifications.

The high security barrier has the following features as a minimum:

- High Transparency
- Flush panel post finish
- Concealed internal Fixtures, anti-tamper bolts
- Difficult to cut, locking recess, anti-scale inserts
- High durability all weather coating (Black)
- Topping that will prevent climbing as well as be aesthetically appealing
- Minimum 25-year maintenance free life span
- Category 3 fencing system, suitable for National Key Points perimeter specifications

#### 3.2.1.2 Supports for the Electric Fence and Camera/Lighting Poles

The Supports for the electric fence are approximately 1m from the face of the inner brick column face and embedded into the ground, prior to the pouring of the inner apron slab. The *Contractor* sizes the supports in accordance with SANS. The supports are to be corrosion protected.

The *Contractor* installs corrosion protected poles for the installation of the cameras and light fixtures at the "new outer barrier route". The poles are to be installed as per the existing design (5m inwards from the electric fence), the poles are to be spaced at 20m apart. The concrete strength for the pole foundations is 25MPa.

#### 3.2.1.3 Perimeter road

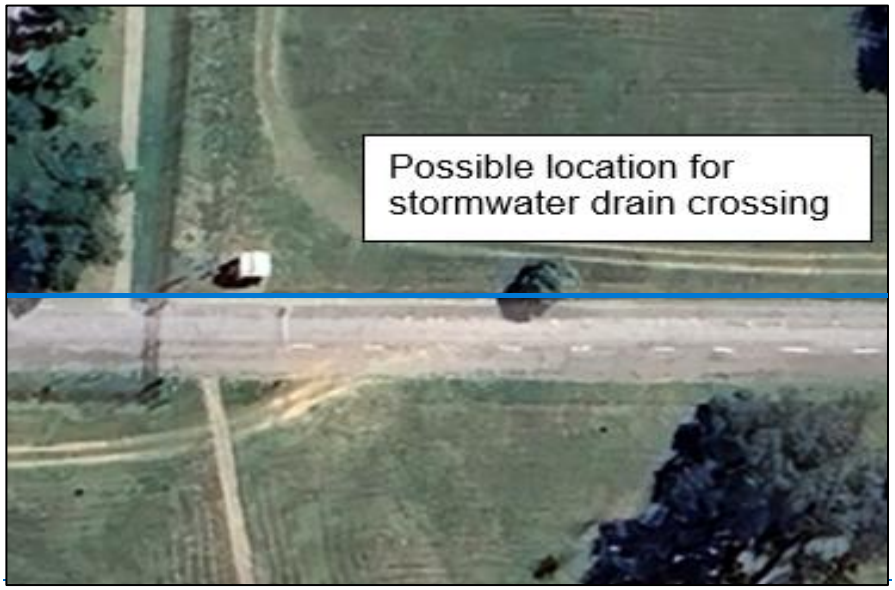
The Contractor ensures a security perimeter Patrol road, to allow the security staff to monitor the fence.

The figure below indicated the stormwater crossings along the boundary.




The *Contractor* designs a pipe chamber that connects the 2 discharge pipes and directs the stormwater off site.

At both stormwater pipe crossings, the *Contractor* designs and constructs culverts to allow the continuation of the patrol road near to the fence. The Culvert is sized and designed as a single lane crossing for the security patrol vehicle.




The *Contractor* provides a crossing over the stormwater channel at the emergency gate so that the patrol road remains near the fence line.

#### 3.2.1.4 Emergency Gate (New Bus Gate)

The swing and sliding gates that are installed at this gate are corrosion protected with a duplex system, with the colour to match the outer fencing.

The Gates are constructed of S355JR grade steel with runner and wheels that allow for easy operation (Minimum wheel size of 100mm).

Sweepers are included on the sliding gates.

The *Contractor* modifies the vehicle lanes to prevent tailgating. SANS 2220 and ISO/IEC 27001:2022 Annex A.7.2 – Physical Entry Controls: Secure areas shall be protected by appropriate entry controls and access points to prevent unauthorized access, including measures to deter and detect tailgating.

#### 3.2.1.5 Main Entrance

The *Contractor* modifies the heavy vehicle lane and installs a speed bump to prevent unauthorized access from persons crawling under the gate.

The Contractor modifies the vehicle lanes to prevent tailgating. SANS 2220 and ISO/IEC 27001:2022 Annex A.7.2 – Physical Entry Controls: Secure areas shall be protected by appropriate entry controls and access points to prevent unauthorized access, including measures to deter and detect tailgating.

#### 3.2.1.6 Western Entrance

The *Contractor* repairs the existing sliding gates by means of replacing the track with a smoother heavy-duty profile, replacing the gate wheels with bigger heavy-duty wheels (minimum 100mm) and installing new motors that are compatible to the gates of this size and weight.

The Contractor modifies the vehicle lanes to prevent tailgating. SANS 2220 and ISO/IEC 27001:2022 Annex A.7.2 – Physical Entry Controls: Secure areas shall be protected by appropriate entry controls and access points to prevent unauthorized access, including measures to deter and detect tailgating.

The sliding gates is corrosion protected and painted to match existing by:

- mechanically removing all previous paint and corrosion.
- applying an appropriate high-quality polymer based waterborne rust converter;
- applying a waterborne, anti-corrosive primer for mild and galvanised steel;
- apply an appropriate topcoat with a colour to match existing;
- all paints are submitted to the Project Manager prior to application and applied according to the manufacture's specifications.

#### 3.2.1.7 Structural Supports for Electrical Equipment

Where supports are required for new electrical equipment, the contractor uses 35Mpa reinforced Concrete and designs in accordance with 240-56364545 Structural Design and Engineering Standard (Rev 4)

### 3.2.2 Electrical Design Scope

The Electrical design complies with SANS 10142, Eskom Specification for NLEPDS for Protection of Eskom Installations & its Subsidiaries (240-78980848), 240-91190304 Specification for CCTV Surveillance with Intruder Detection and SANS standards. All fencing wire shall comply with SANS 675 and are to be wired to the sides of posts to prevent the wires from being displaced or becoming loose.

The *Contractor* of the whole Electrical scope of works is Electrical and is registered with Private Security Industry Regulator Authority (PSIRA). Valid proof of registration to be submitted. In case the *Contractor* is not in possession of the Private Security Industry Regulator Authority (PSIRA), sub-contracting of the security services by the *Contractor* is allowed.

The *Contractor* is registered with the Department of Labour as an Electrical Contractor.

The *Contractor* provides valid ECSA Certificate and CVs for a Professionally Registered Electrical Engineer or Technologist who will be responsible for the Electrical Designs or Site Supervisor with Electrical Trade Test Certificate including 1 x Electrical Artisan with at least NQF level 4 Qualification. All electrical resources shall have minimum of 10 years relevant work experience.

#### 3.2.2.1 Electric Fence

The Electric Fence Installer is an accredited Electric Fence System Installer (EFSI)

- Detection system

The *Contractor* to design and allow for the perimeter detection system shall be divided into 20 alarm zones.

- Energizers

The *Contractor's* design of the energizers and protection zones to ensure full perimeter coverage during individual energizers failures. Provide 10 energisers for 20 alarm zones.

The *Contractor's* to design the energiser system to multiple single-zone energizers can be wired as a group. Energizers to synchronize pulses and become a multi zone group.

Energisers must comply with safety criteria as stipulated in IEC 60335-2-76:2006.

- Posts

The posts shall be designed in compliance with 240-76368574 High Security Mesh Fencing. And Earthing connection points to be available on all posts.

Assess the existing lighting poles for reuse and provide a detailed assessment report for *Employer* review. The Contractor to plan for supply and installation of new lighting poles as the worst-case scenario.

Assess the existing power cables for lighting for reuse and provide a detailed assessment report for review by the Employer. Contractor shall provide provision for installation of new cables.

Install new insulator holders, fireproof insulators and 50mm stays.

All posts and stays are hot dip galvanized in accordance with ISO 1461-1999 after manufacture and bedded in concrete footings size 600 x 600 x 600mm deep, at a maximum of 100m centres.

- Earthing and Lighting protection

The fence shall be protected to safeguard the electronic equipment from lightning damage. Earthing and Lightning Protection For the earthing and lightning protection works, the *Contractor* is required construct new earthing as per 240-78980848 Specification for NLEPDS for Protection of Eskom Installations and Its Subsidiaries. Provide all equipment and components required. Certificate of Compliance issued by a Registered Person certifying that the fence meets the requirements of SANS 10222-3:2016. 3. SANS 10142

**3.2.2.2 Perimeter Supply**

The Electrical *Contractor* is to design the systems within these scopes to interface with the following:

1. Perimeter protection, detection and lighting interfaces to the CCTV systems and control

2. Alarm interfacing to CCTV and Perimeter protection system.

3. Any integration connection terminations required between the energised fence and electronic access control.

- Power Supply

1. With reference to drawing number 0.50/2001, existing Vistors Parking mini substation has been decommissioned, isolated from the 11kV ring and scrapped. The Contractor shall be responsible for procuring new 500kVA mini substation to replace the decommissioned Visitors Parking mini substation in accordance with SANS 10142 and issue electrical CoC once the new mini substation has been connected on the 11kV ring and commissioned. Replace the 11kV cable with new 3 core armoured type of XLPE type (estimated length to the new proposed location is 1000m X 6, 150 mm2). Contractor shall reroute and join with PVC/PVC/SWA, armoured cable if necessary all the temporary LV cables which are currently feeding from block A and block B main LV Boards on the north west and south west respectively for the following loads (Vodacom Tower, Guardhouse, and street lights. . The new mini substation to be installed 1km towards West Gate near the Helipad Kiosk. The Contractor to design the new mini substation with 40A circuit breaker to feed DB/P.G4 and 100A circuit breaker, 50A feeding kiosk no 7, 20A circuit breaker, 200A to feed Kiosk no 6. The utility and cable location scans need to be conducted before the installation.

2. Replace Bus Depot and Sports Field mini substations including their sub-distribution boards, with new 500kVA, test for re-use the 11kV power cabling, replace all LV cabling with PVC/PVC/SWA, armoured type supplying the loads. The utility and cable location scans need to be conducted before the installation.

3. The *Contractor* provides the type testing certificates of mini substations in compliance with SANS testing standards.

4. The Bus Depot is equipped with Traffic light 50A circuit breaker and Incomer isolator

5. Sports Field is equipped with main isolator 60A, 20A X 3 circuit breakers feeding the sports field loads. The Contractor to design the new mini substation equipped with new circuit breakers, isolator with new compliant circuit breakers in accordance with SANS10142 and issue CoC.

6. Bus gate Kiosk is equipped with 40 A Main Circuit breaker, 3 X 10A Circuit breakers, 15 A Circuit breaker, 20A Circuit breaker, 63A Load Isolator. Bus guard house is equipped with sub-distribution box feeding 2 Fluorescent Light fittings and two plugs. Replace all breakers with compliant breakers as per SANS 10142 and issue a CoC. Replace the two fluorescent lights with energy efficient LED lights. The utility and cable location scans need to be conducted before the installation.

7. Replace the Helipad Kiosk with new in compliance with SANS 10124 and issuing of the CoC. The existing Helipad is fed from the Visitors parking mini substation. The Kiosk is equipped with 15 X 15A circuit breakers, 63A Earth leakage circuit breaker, and 60A main circuit breaker. The utility and cable location scans need to be conducted before the installation.

8. Parking Mini substation cabling to be replaced in accordance with SANS 10142 and issue CoC. Replace the 11kV cable with new 3 core armoured type of XLPE type (estimated length to the new allocated place is 1000m X 6, 150 mm2). Replace LV cabling with PVC/PVC/SWA X 6, armoured type supplying the loads. The loads are Vodacom Tower, Retail parking, Helipad, Charlie 9. The utility and cable location scans need to be conducted before the installation.

9. The existing 11kV ring power cabling: 3 X 150 mm2 3 core Cu Fepex ring feed for Bus Depot, Sports Field mini substation. Replace the 11kV cabling with armoured type of XLPE type and replace all LV cabling with PVC/PVC/SWA, armoured type supplying the loads.

10. The existing low voltage power cable: 2.5mm2 Cu PVC/PVC/SWA and cable length to nearest junction boxes is 1000m. Replace the 11kV cabling with armoured type of XLPE type and replace all LV cabling with PVC/PVC/SWA, armoured type supplying the loads.

- **Power cabling**

The *Electrical Contractor* supply, installation, testing, commissioning, and handover of the following:

- Cable designs as per *Contractors* designs. The *Contractor* to conduct load calculations before installation and submit to *Employer* for acceptance. This helps in preventing oversizing/under sizing of the cables. Assess the existing lighting poles and cable for reuse.

- All underground cables to be installed with cable sleeves.

- Underground cabling and copper earth conductors with plastic cable warnings and necessary accessories for termination purposes.

- Cable Route Markers.

The *Contractor* provides the routes for power cabling, provide 16A X 3 circuit breakers, 6mm2 X 4.2km (4.2km long to supply approximately 162 light poles), compiles the cable schedules and cable block diagrams, supplies, and installs the cables, sleeves, labels them, test the cables, completes the quality documentation and issues to the Project Manager for acceptance.

The *Contractor* conducts cable tests as per 240-56227443 - Requirements for Control and Power Cables for Power Stations Standard, section 3.8.

The *Contractor* provides a pricing in the provided BoQ that caters for the full costs, no additional cost shall be claimed after the detail design is completed.

The *Contractor* provides the *Project Manager* with the additional power requirements within 30 days after award of the contract. The *Contractor* provides an industrial grade 8-port POE/POE+ switch with 2 fibre ports at each of the equipment kiosks along the inner fence. The switch shall be supplied complete with the recommended power supply and all cabling.

Where armoured cables are buried, a 40mm layer of lightly rammed soft screening earth or sand shall be placed on the bottom of the trench and the cables shall be covered with a min of 80mm of lightly rammed soft screened earth or sand. *Drawing number: 0.50/45006 sheet 1&2.*

The trench shall then be backfield with the excavated earth. Where required, plastic marker tape shall be laid in the trenches to warn against digging up of the buried pipes.

Climb Detection System 1 Contents: Power supply battery back-up, Fibre-RS485 converter and lighting controller module located fixed to wall pillars @ less than 180m centres.

Climb Detection System 2 Contents: Power Supply Battery Back-up, Fiber-RS485 Converter Located fixed to wall pillars @ less than 180m centres.

At road crossings, 3X100ø Sleeve pipe required. (South Gate & West Gates)

Sports Field Substation (SFS) power cable (approximately 200m) to the nearest junction box (C3Z1). *Drawing number: 0.50/45006 sheet 1&2*. Replace the power cable supplying fence junction box with new PVC/PVC/SWA 3core power cable.

Bus Depot Substation (BDS) power cable (approximately 200m) to the nearest junction box (C2Z3). *Drawing number: 0.50/45006 sheet 1&2.* Replace the power cable supplying fence junction box with new PVC/PVC/SWA 3core power cable.

Parking Lot Substation (PS) power cable (approximately 500m) to the nearest junction box (C1Z1). *Drawing number: 0.50/45006 sheet 1&2.* Replace the power cable supplying fence junction box with new PVC/PVC/SWA 3core power cable.

- **Motors**

The *Contractor* to size the electric motor/s for the sliding gates (as per existing Gates designs), power cables and a dedicated power Kiosk fed from the mini substation.

The *Contractor* to assess the West gate and size the electric motor/s of the West gate base on the existing gate.

The sliding gate shall be operated by means of an electrically controlled industrial type gate motor/s.

The *Contractor* to connect and terminate the power cables to the Kiosk located 100m from the Emergency Bus Gate.

All Earthing connection points to form part of the pillar. Motorized gates are to be earthed in the open and closed position.

#### 3.2.2.3 Commissioning and Testing

- The *Contractor* shall thoroughly test the system to ensure that it meets the SANS 10222-3 code of practice and is operating correctly to the manufacturer's specifications.
- The type tests certificates to be supplied by the *Contractor* prior to design freeze phrase.
- The motor to comply with 240-57617975 New Low Voltage Motors Procurement Standard.
- The *Contractor* shall issue an Electric Fence System Certificate of Compliance, issued by an accredited person for the installation of the energised fence.
- Measurements shall be undertaken by the *Contractor* and supplied in the final handover document.
- These measurements shall include the following:
    - Pulse rate,

- Pulse width (500-ohm load),
- Voltage (no load, return point to ground, per zone),
- Energy (500-ohm load, return point, per zone),

The *Contractor* shall design, supply, install, test, commission, and handover the following works:

- Low Voltage reticulation ring is made up of Main Kiosks as per Contractor's design reviewed and accepted by the Employer.
- The electrical kiosks shall be IP65 rated and be constructed in compliance to SANS 10142-1 and 240-56227516: LV Switchgear and Control Gear Assemblies and Associated Equipment for Voltage up to and including 1000V AC and 1500V DC Standard.
- Wiring, Trunking and Labels shall comply with requirements specified in Eskom Specification for NLEPDS for Protection of Eskom Installations & its Subsidiaries (240-78980848).
- All wiring shall be carried out in general-purpose 600/1000 V SANS approved multi-strand PVC wire.
- The design of Junction Boxes shall comply to clause 5.1.1 of SANS 10142-1, which states that:
  - It shall not be possible to touch any live part within arm's reach with the standard finger test. During normal operation, or when a cover is removed unless the cover is removed with the use of a tool or a key.
- **Kiosks and junction boxes**

The *Contractor* is to design the following items for the power supply ring to the different junction boxes as per *Contractor* design:

- Kiosks for housing the electrical protection components and POE's as per *Contractor's* design in accordance with Eskom Specification for NLEPDS for Protection of Eskom Installations & its Subsidiaries (240-78980848)
- Energizers X 10 for 20 Zones Perimeter fence.

#### 3.2.2.4 Method Statements

The *Contractor* shall provide detailed method statements on how he intends to carry out the works; this shall apply to all, and any part of the works as provided in the conditions of contract. Method Statements shall be provided for:

- All activities associated with the erection of all fence types, and access control features.
- All activities associated with the installation and commissioning energised fence and perimeter detection systems.
- All activities associated with the installation and commissioning of lighting.

#### 3.2.2.5 Designs

- Non-Lethal Energised Perimeter Detection Functional Design Specification/ System Design Report:
- The tenderer is required to produce and submit a Functional Specification and a System Design Report, as part of his tender submission.

- The Functional Specification details Eskom's functional requirements in the context of the product that is offered by the Tenderer.

- The System Design Report documents the design that has been developed to meet the requirements as specified in the Functional Specification and the scope of work document.

Functional Design Specification and System Design Report shall cover the functional and interconnection details of system components below in line with the standard for NLEPDS system and the scope of work document.

- Electric fence conductors

- Power supply

- Configuration PC / Controller

- User interface / Display unit

- Synchronising equipment/mechanism

- Relay cards

- Communication infrastructure

- Energizer(s)

- Integration designs

#### 3.2.2.6 Interface

The *Contractor* is to design the systems within these scopes to interface with the following:

- Perimeter protection, detection and lighting interfaces to the CCTV systems and the security Control.

- Alarm interfacing to CCTV, security Control and Perimeter protection system.

- Any integration connection terminations required between the energised fence and electronic access control.

#### 3.2.2.7 Drawings and Documentation

The *Contractor* to provide “As built” drawings and components specification/ data sheets. The *Contractor* is required to include Factory Acceptance Test results in all relevant design handover packs.

Before a Certificate of Completion will be issued, all as-built data and drawings (e.g. final surface levels etc.) must be provided to the Project Manager on completion of the Permanent Works. The data shall be provided both in electronic and hard copies format and shall be delivered for acceptance before a Certificate of Completion is issued. Any information in the possession of the *Contractor* which is required under this contract shall be supplied timeously to the Supervisor on a regular basis.

After *Employer’s* acceptance of the design documents, the *Contractor* shall procure equipment, material and performs production, assembly, installation and commissioning.

#### 3.2.2.8 Tests

The *Contractor* shall arrange and conduct the Factory Acceptance Tests (FATs) for the *Employer* to witness and evaluate. The *Contractor* installs systems and equipment on site, in accordance with *Employer’s* master programme to which the *Contractor* align his own program and schedule.

The *Contractor* performs Site Integration Test.

The *Contractor* completes hand over certification with the Employer.

The *Contractor* is required to include all technical information in all relevant design handover packs. In addition, the *Contractor* is to include all construction and erection documents of all relevant design handover packs.

The *Contractor* shall complete Quality Control Plans (QCPs) and Inspections and Test Plans (ITPs) (at a check sheet level) before contract award. These shall be reviewed, and *Employer* comments addressed (by the *Contractor*) and signed off by the *Employer* within 30 days after contract award.

## 3.2.3 Lighting Design Scope

The lighting design and products complies with 240-139282493 and SANS 10389-2.

The Contractor submits the lighting design documentation including supporting relux files and product IES/LTD files are submitted to the *Project Manager* for review and acceptance.

The lighting products comply with the Schedules within Annexture A & B of 240-139282493. Prior to installation, the *Contractor* demonstrates the lighting equipment meets the project requirements and properties used within the lighting design.

All lighting equipment samples, designs and product information are submitted to the Eskom Lighting lab for acceptance prior to implementation.

#### 3.2.3.1 Perimeter Lights

The Area lighting and perimeter lighting is designed to a risk class of High.

- Average illuminance – 10 lux
- Minimum illuminance – 4 lux
- Uniformity (Minimum to average) – 0.2 lux

#### 3.2.3.2 Check Point Lights

- Average illuminance – 5 lux
- Minimum illuminance – 4 lux
- Uniformity (Minimum to average) – 0.2 lux

#### 3.2.3.3 Commissioning

The *Contractor* demonstrates the installed lighting system is as per the accepted design and within the required parameters, which includes and not limited to onsite measurement with a calibrated Lux meter, witnessed by the *Project Manager*.

## 3.2.4 Security Design Scope

The final security solution installed is compatible with the current and future refurbishment of the existing security system.

The *Contractor* conducts a visual assessment of the site perimeter to determine possible security risks.

The *Contractor* installs a barrier above the pedestrian turnstiles, to prevent unauthorised entry via climbing over the turnstiles.

The current perimeter is separated into 8 zones, the *Contractor* splits each existing zone into new zones, creating a new arrangement of 20 zones. This new zone configuration is linked to the associated perimeter security systems (Electric fence, Cameras, and lights). The perimeter security system is set so that the security control room alarm and lighting for a specific zone is triggered by either the camera's intruder detection or the electric fence.

The *Contractor* installs access gates within the electric fence to allow for maintenance activities.

The perimeter fence currently arranged with one energiser supplying two zones of the existing 8 zone arrangement. The *Contractor* reconfigures the electric fence infrastructure such that multiple energizers are installed and provide a form of detection in accordance with the newly formed 20 zone arrangement.

The security design is in accordance with:

- 240-139282493 - Security Lighting for Eskom Applications

- 240-170000096 - Physical Security Integration Standard
- 240-76368574 - High Security Mesh Fencing
- 240-78980848 - Standard for Non-Lethal Energized Perimeter Detection System (NLEPDS) Electrical Components
- 240-91190304 - Specification for CCTV Surveillance with Intruder Detection

## 3.3 Procedure for submission and acceptance of *Contractor*'s design

All Documents are submitted to the *Project Manager* for review prior to implementation. All review documentation is submitted with transmittals. Any review information submitted without transmittals are considered rejected automatically.

At the end of each contracted design phase (e.g., Concept, Basic, detailed design phase), the *Contractor* provides an integrated design report which is reviewed at a Multi-Disciplinary Design Review (MDR) which will allow the project to move into the next design phase or allow for design freeze.

Implementation of the designs may not begin prior to design freeze.

## 3.4 Other requirements of the *Contractor*'s design

All the design solutions are developed by the relevant Professional Engineers registered with South African Engineering Council of South Africa (ECSA) at all design stages, the associated Professional Engineer will form part of the *Contractor's* supervision team and inspect and sign off the various quality documents.

## 3.5 Use of *Contractor*'s design

N/A

## 3.6 Design of Equipment

N/A

## 3.7 Equipment required to be included in the *works*

None

## 3.8 As-built drawings, operating manuals and maintenance schedules

At Take-over, the *Contractor* provides two full sets of as-built documentation as hard copies and electronic PDF and native CAD formats (. DGN or .DWG which must be compatible with Bentley MicroStation) to the *Employer*.

The Operating and Maintenance Manual must describe how the plant is to be operated and by whom, as well as the desired level of training and orientation required for the building occupants. The operation and maintenance manuals are to consist of the following as a minimum:

a. List of Contents (Index)
b. Introduction
c. General description of the functions of each of the systems including detailed description of each element of each system, how it functions, how it operates and how to maintain it and what attic stock or tools to carry.
d. Full as-built drawings and detailed drawings, brochures and catalogues for each system and each element of each system.
e. The format of the O & M documentations is to be A4 and be a specially bound document with hard cover and with metal ring binding. (All drawings and details are to be reduced to A3 format and folded into A4 format.)
f. The names, addresses and telephone/fax numbers/email addresses of all responsible persons and manufacturers/suppliers are to be listed in the O& M manual.
g. A full list with reference numbers is to be included to enable the O&M staff to order materials and spares.

h. Colour diagrams are be provided to illustrate the operation and function of each system with reference to the relevant as-built drawings or brochures of Plant and Materials. These diagrammatic drawings must also indicate the locations of valves with their numbers.
i. outlines all the required maintenance activities for the complete works as well as the frequency of such activities and by whom
j. The Contractor shall develop and submit a Maintenance Strategy covering all plant, equipment, systems, and infrastructure installed under this Contract. The Maintenance Strategy shall include, as a minimum:

- Asset register with Kraftwerk-Kennzeichensystem (KKS code) and Equipment criticality assessment.
- Preventative, predictive, and corrective maintenance requirements for all items.
- Recommended maintenance frequencies and task schedules for all items.
- Maintenance procedures and work instructions.
- Inspection and condition monitoring requirements.
- Spare parts and consumables strategy.
- Maintenance resource and competency requirements.
- Statutory inspection and regulatory compliance requirements.
- Failure reporting, root cause analysis, and continuous improvement processes.
- Key performance indicators (KPIs) for maintenance performance monitoring.
- Long-term asset preservation and lifecycle replacement recommendations.
-

The *Maintenance Strategy* shall form part of the Operation and Maintenance (O&M) Manual submitted at handover.

# 4 Procurement

The Contractor provides the following procurement services in performing the *works*:

- Preparation of Employer approved supplier and Sub-Contractor's lists for equipment and contracts to be submitted to the Employer for review and approval.

- Follows the most cost and time saving procurement strategies.

- Contract management services for the selection, appointment and management of Sub-Contractors, where required to execute the scope.

- Obtains delivery dates from Sub-Contractors and suppliers in order to realize the Completion Date;

- Receiving of invoices, verification thereof in terms of purchase orders and contract provisions, certification of invoices as being correct and payable and supply of correct invoices to the Employer

- Management of and negotiating of all suppliers and Sub-Contractors compensation events and recommendations to the Employer as to the validity, amount and payment of such events.

- Determination of penalties payable by suppliers and Sub-Contractors and recommendation to the Employer as to the enforcement of such penalties prior to any communication to suppliers and Contractors.

- Ensuring that all suppliers and Sub-Contractors, from whom the Contractor procures equipment and materials do not retain, encumber or reserve title to such items.

## 4.1 People

### 4.1.1 Minimum requirements of people employed on the Site

- All Contractors personnel are subjected to access control conditions as per Eskom requirements.
- All workers employed on site comply with Eskom's health and safety standards. Workers are not allowed to be transported on the back of vans or bakkies.
- Workers are restricted to the area of activity near the construction.
- The Contractor recruits within the immediate District Municipality for general labour/ skills to execute the project.

### 4.1.2 BBBEE and preferencing scheme

*Contractors* has a minimum BBBEE Level 6 rating after contract award.

### 4.1.3 Accelerated Shared Growth Initiative – South Africa (ASGI-SA)

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the Accelerated and Shared Growth Initiative - South Africa in accordance with and as provided for in the *Contractor*'s ASGI-SA Compliance Schedule stated below.

*[Insert the agreed ASGI-SA Compliance Schedule here]*

The *Contractor* shall keep accurate records and provide the *Project Manager* with reports on the *Contractor*'s actual delivery against the above stated ASGI-SA criteria. [Elaborate on access to and format of records and frequency of submission etc.]

The *Contractor*'s failure to comply with his ASGI-SA obligations constitutes substantial failure on the part of the *Contractor* to comply with his obligations under this contract.

## 4.2 Subcontracting

### 4.2.1 Preferred subcontractors

The *Contractor* notifies the *Project Manager* in the event of using any Sub-contractor and provides the *Project Manager* with a list of all sub-contractors on the project. Subcontractors cannot subcontract work to another subcontractor. The choice of the proposed sub-contractor is subject to the *Project Manager's* approval before using the services of such subcontractor. The Subcontractor must be familiar with the required work and should submit CV's of past experience and have the necessary statutory accreditations.

The *Contractor* provides the *Project Manager* with the Health and Safety plans of all the sub-contractors on the project, before commencing the project.

### 4.2.2 Subcontract documentation, and assessment of subcontract tenders

The *Contractor* uses the NEC subcontractor agreements. All subcontractor quotations for which provisional sums or budgets have been allowed, is first approved by the *Employer* or his representative with documentary proof. This is done well in advance of the planned scheduling of the work.

### 4.2.3 Limitations on subcontracting

As per Eskom requirements, subcontracting will be limited to 30% as far as possible. The *Employer* is notified where subcontracting exceeds the 30% threshold prior to commencement of the specific subcontracting works.

### 4.2.4 Attendance on subcontractors

The *Contractor* attends to the activities of all subcontractors including direct subcontractors.

## 4.3 Plant and Materials

### 4.3.1 Quality

The *Contractor* will not use Plant or Materials which are generally recognised as being unsuitable or otherwise to be avoided for the purpose for which they are intended.

Only components of high reliability will be utilised, with a proven operating history, to enable the Plant to achieve required reliability and availability. Plant and Material design, engineering and manufacture will accord with the best modern practice applicable to high-grade products of the type to be furnished, so as to ensure the efficiency and reliability of the Works and the strength and suitability of the various parts for the Works.

Plant and Materials withstands ambient conditions and the variations of temperature arising under working conditions without distortion, deterioration or undue strains in any part.

All parts are made accurately, and where practicable, to standard gauges so as to facilitate replacement and repairs. Like parts are interchangeable.

No repair of defective Plant and/or Materials will be permitted without the Project Manager's Acceptance and any such repair, if Accepted, will be carried out to the satisfaction of the Employer.

The Project Manager is free to specify hold and witness points during the installation and on site testing stages of the project. The Contractor issues preliminary notification of such hold and witness points by fifteen working days advance notice to the *Project Manager*, and confirms such hold and witness points at least seven working days prior to the activity.

Typical hold points are listed below:

a. Design Review

b. Factory Acceptance Test

c. Delivery to Site

d. Erection

e. Site Acceptance Test

f. All manuals and drawings (in the specified format)

g. Commissioning

In addition to maintaining appropriate inspection and test records to substantiate conformance to requirements, the following records are safely stored for a minimum period of seven years following the final Completion of the Works:

a. Construction, layout and component Acceptances

b. Type and routine test certificates

c. Construction drawings and Acceptances

After this period, the Contractor offers these records to the Employer (in writing) and obtains a disposal instruction.

Documentation regarding quality procedures is submitted within thirty days of Contract Award. The Employer will review and comment on the acceptability of these documents in a time frame as per the requirements of the contract for contractual correspondence. If controlled copies of these documents have been submitted to the Employer, then the controlled copy numbers may be quoted in the submission.

The Contractor adheres to:

Vendor Document Submittal Schedule (the schedule to be issued to the Contractor by the Employer)

#### 4.3.2 Plant & Materials provided "free issue" by the *Employer*

The *Contractor* shall note that the *Employer* may issue material for the sole use in this contract.

#### 4.3.3 *Contractor*'s procurement of Plant and Materials

The *Contractor* is responsible for ensuring that all products are preserved in their appropriate manner as described in their specifications or in Eskom preservation, shipping and transportation procedures as applicable. The *Contractor* shall submit the preservation, shipping and transportation procedures to the *Employer* for review and acceptance. The Employer may choose to witness the packaging, loading and offloading of the products depending on their criticality, this will be indicated in the intervention points on the QCP / ITP document. The Contractor shall ensure that all storage requirements for products are properly implemented to preserve the products against adverse conditions, deterioration, damages, etc. Storage and preservation procedures for the different products must be submitted to the Employer for review and acceptance. The Employer may request to inspect the stored products at any given point during the storage period of the product. Requirements for preservation, shipping and transportation are addressed in 240-105658000

#### 4.3.4 Spares and consumables

The *Contractor* is required to provide the following spares as a minimum:

- Electrical Equipment:
  - One set of full light fitting with globes for all types of lights installed.
  - One energiser with Power Over Ethernet (POE) switch
- Control & Instrumentation Equipment:
  - One set of interface cables and licence dongles for the PLC interface.
  - Spare PSU if applicable.
  - One of each type of signal conditioning modules if applicable.
  - One of each type of interposing relay if applicable;
  - Spare globes/LED for panel indications

## 4.4 Tests and inspections before delivery

The *Employer* carries out quality inspections at his own discretion. The Employer will inspect and approve stages of manufacture of all Plant and Materials necessary to ensure the correct quality of Plant and Materials as prescribed in the accepted project quality plan.

All inspections and testing are to be performed in accordance with the Quality Control Procedure (QCP) developed by the Contractor after Acceptance by the Employer.

The *Contractor* must provide facilities for inspection of all items of Plant and Materials at the place of the manufacture and this requirement must extend to all sub-contractors and suppliers if applicable. All material labour or assistance, tools, gauges, articles or apparatus that the Employer may require for the purpose of testing, gauging and inspection, must be provided by the Contractor. The Contractor must provide all such facilities for testing and the contract price must include for this.

The *Employer* reserves the right to reject items that do not conform to the Employer's requirements. When the plant has passed the prerequisite tests the Employer will furnish to the Contractor a certificate or endorse the *Contractor's* test certificate to that effect. Examination by the Employer does not relieve the Contractor from the responsibility of carrying out all tests which may be necessary to ensure the required standard of manufacture or from any obligations in terms of the contract.

The achievement of adequate standards during the tests at the place of manufacture, if performed, is only the first requirement. The final criterion will be performance onsite, and any of the requirement which proves defective due to bad workmanship or material must be replaced forthwith by the Contractor at his own cost on the instruction of the Employer.

The following tests are conducted by the Contractor and are to be witnessed by the Employer at the manufacturer's works or Contractor's premises as a minimum requirement:

a. Visual inspection of the Plant and Materials

b. Review of the certification requirements

c. Inspection of paint work and corrosion protection.

d. Verification that all components are delivered to the Contractor's premises.

e. Verification that all power plugs is correct.

f. Verification that components installed is correct.

g. Verification that all labels are correct.

h. Phase rotation

## 4.5 Marking Plant and Materials outside the Working Areas

All Material paid for by the *Employer* is clearly labelled as being the *Employer's* property.

## 4.6 *Contractor*'s Equipment (including temporary works).

N/A

## 4.7 Cataloguing requirements by the *Contractor*

Procurement Instruction Number 1 of 2018 – Incorporating Cataloguing into the Procurement Environment, Unique Identifier 240-1289988974 to be provided on request

# 5 Construction

The *Contractor* is required to:

a) Submit a comprehensive method statement of the entire *works* to the *Project Manager* for acceptance prior to the start of the *works*

b) Submit a project specific safety file to the *Employer* for comments / acceptance.

c) Prepare earthworks for craneage access and working rigging areas if required.

d) Manage his activities on Site to ensure that no interference takes place between his work and that of others.

e) Complete "Contract Activities Daily Reports" in accordance to accepted construction schedule.

f) Liaise with the *Project Manager* regarding utilities and telephone facilities required for his Site establishment.

g) Liaise with the *Project Manager* regarding the location of waste disposal sites and rubbish dumps,

h) Maintain and promotes labour harmony on the Site and in the working environment.

i) Immediately report any potential labour disharmony to the *Project Manager*.

j) Not recruit or employ any personnel from the *Employer* and Others, without prior acceptance of the *Project Manager*.

k) The *Contractor* submits a fully detailed Quality Control Plan (QCP) for acceptance within one week of the Contract Date.

l) The *Contractor* submits a schedule of unpriced orders to be placed and this is updated regularly.

m) The *Contractor* is responsible for defining the level of QA/QC (intervention Points) or inspection to be imposed on his *Subcontractors* and suppliers of material in the Quality Control Plans (QCPs). This level is based on the criticality of plant and materials, and is submitted to the *Employer* for acceptance.

n) Product data sheets and product samples are submitted for review and acceptance by the *Project Manager* after contract award and prior to the commencement of work.

o) All quality control documentation is submitted to the *Project Manager* within 7 days of Contract Date through a formal process to be communicated and confirmed by the *Project Manager*.

## 5.1 Construction and Erection

a) The *Contractor* is responsible for the design, erection, maintenance, and removal of all temporary or falsework required for the execution of the works.

b) The *Contractor* takes all necessary precautions to ensure that none of the existing structures and services that are not in the scope of works is damaged during any demolition required. If structures and services which are not in the scope of work is damaged, the *Contractor* is liable to repair or replace the damaged items at their own cost.

c) All construction works complies with SANS 1200 standardised specification for civil engineering construction.

## 5.2 Handover

The *Contractor* is responsible for the provision of a final data book. The document contains all the relevant documentation, designs, drawings including as-built drawings, materials certificates, and product specifications on all products used, tests and results etc. which were applicable during the contract. The *Contractor* ensures that all relevant documentation is traceable and cross referenced where applicable.

## 5.3 Data Book

a) Apart from any statutory data packages required, the *Contractor* also compiles a data package of the relevant drawings, test certificates etc. which he submits to the *Project Manager* for acceptance. These include, but are not limited to:

- Document List
- Instruction for Work/Purchase Order
- Approved ITP’s, QCP’s
- Method statements and specification adhered to
- Rigging studies (if applicable)
- Risk assessments
- Approved Drawings
- Fabrication Drawings
- Material Certificates
- Approved NDT procedure
- NDT Reports / Results
- Certificate of Manufacture
- Inspection Reports
- Corrosion Protection Consumables Certificates

- Calibration Certificates
- Notifications
- Modifications
- Concessions
- TQ's, ER's and communication with Employer
- Non-conformance reports
- Internal Release Notes
- Transport notifications
- Additional
- Calculations for any temporary works that may be required for the safe execution of the works.
- Concrete cube test results and reports
- Welding procedure specifications
- Welder qualifications
- Non-destructive weld test results
- Weld test certificates
- Steel grade certificates
- Concrete test results
- As-built data and drawings of the completed *works* upon handover. As-built drawings are submitted in PDF and native CAD formats (.DGN)
- Structural Certificate signed by the Professional Civil Engineer confirming that *works* have been constructed in accordance with the design.

The contents are presented in a hard cover file or files.

The data packages are prepared on a daily basis for all completed work.

Two hard copies and one soft copy of the Data Book are handed to the *Employer* for acceptance.

Data Books are submitted for review and acceptance before completion of the *works* to the *Employer.*

## 5.4 Temporary works, Site services & construction constraints

### 5.4.1 *Employer*'s Site entry and security control, permits, and Site regulations

The site is located in a part of an existing campus, with existing buildings all around, most buildings are currently occupied.

1. The *Contractor* attends the **Compulsory site meeting** prearranged by the *Employer* prior to submitting tender.
2. The *Contractor* ensures that he familiarizes himself with site conditions.
3. *Contractor's* access is limited to the areas as indicated in the scope and *Contractor's* staff is prohibited from roaming in the rest of the facility.
4. Eskom Holdings indemnifies themselves from any negligent events by the *Contractor* relating to the scope of the works within the contract period
5. The *Contractor*, his staff and the Sub-contractors maintain identification at all times e.g. Uniforms etc.
6. The *Contractor* is deemed to execute Safety Procedures to ensure the safety of his staff, Sub-contractors, Eskom staff during the Contract Period.
7. Use of power and loud tools to be controlled and/or managed with Eskom office management team.
8. The safety of the *Contractors Employees*, Subcontractors and building's tenants takes preference over the scope of the works of this project.

9. All site instructions to be approved and authorised in writing by the *Project Manager.* If this directive is not adhered to it could result in non-payment.

### 5.4.2 Restrictions to access on Site, roads, walkways and barricades

**Access to the site**

1. The *Employer* provides the *Contractor* with an Access Certificate to formally provide access to the site.
2. The *Contractor* ensures that he is familiar with the conditions of access to the buildings, which includes constraints to limited parking and no goods lift is available in some of the blocks.
3. The *Contractor* adheres to all the requirements, which include, but not restricted to:
    a. Identity cards with photographs
    b. Cooperation in order to help Eskom provide the customer with a project schedule reflecting the period during which the construction and commissioning activities will take place.
4. The Contractor will be responsible for external disputes that may occur regarding the *works*.
5. The Contractor is, when necessary or needed, required to make all the necessary arrangements with the Local Authorities via the Building Manager and or Eskom Representative.

### 5.4.3 People restrictions on Site; hours of work, conduct and records

Working after normal working hours and on weekends requires special permission. The Contractor shall give the *Employer a*dequate notice if this is planned.

### 5.4.4 Health and safety facilities on Site

Refer to SHE specifications issued.

### 5.4.5 Environmental controls, fauna & flora, dealing with objects of historical interest

The *Contractor* shall ensure that all fauna and flora is preserved and protected during his activity on site. All such fauna and flora will be reinstated after completion of the work.

### 5.4.6 Title to materials from demolition and excavation

Not applicable

### 5.4.7 Cooperating with and obtaining acceptance of Others

Two weeks look-ahead schedule to be developed and submitted to *Project Manager* on a fortnight basis for timeous arrangements for access into occupied buildings with the occupants concerned.

### 5.4.8 Publicity and progress photographs

The *Contractor* requests approval from *Project Manager* for any photography and progress photographs prior to undertaking and publishing.

### 5.4.9 *Contractor*'s Equipment

The C*ontractor* keeps an inventory of equipment brought to site. This is verified and acknowledged by Eskom security to allow removal of such equipment when required by the contractor.

**Security of materials on sites:**

- The *Contractor* provides own security on site and is held liable for excess of insurance in case of theft or loss.

**Material and Bill of Quantities**

- Storage and security of material is the responsibility of the *Contractor* until the Final Completion Certificate is certified. The *Contractor* is responsible for all costs involved to expedite lost, damaged or stolen material.

### 5.4.10 Equipment provided by the *Employer*

The *Contractor* provides all equipment and tools required to complete the *works*.

### 5.4.11 Site services and facilities

The *Employer* will provide power and water,

The *Contractor* shall make provision of waste disposal, and submit proof in a form of Waste Disposal Certificates to the Employer for approval

The *Contractor* shall provide everything else necessary for providing the Works.

### 5.4.12 Facilities provided by the *Contractor*

A clearly demarcated site establishment area will be provided by the *Contractor* for the following:

- Suitable facilities for *Contractor* to store all material and equipment
- Suitable facilities for his employees for changing
- Facilities for the consumption of food
- Site offices
- Toilet/Ablution facilities
- Other temporary facilities required by the *Contractor*

### 5.4.13 Existing premises, inspection of adjoining properties and checking work of Others

*Contractor* is to investigate existence of any services before commencement of work. Care is to be taken when *Contractor* is doing demolitions so as not to damage the work of others.

### 5.4.14 Survey control and setting out of the *works*

It is the *Contractors* responsibility to ensure accuracy when performing setting out of the *works*,

### 5.4.15 Excavations and associated water control

Where excavation is required, the *Contractor* takes the necessary precautions not to damage any existing services.

### 5.4.16 Underground services, other existing services, cable and pipe trenches and covers

There is limited information regarding existing underground services

Should the need arise for the contractor to work on underground services, the *Contractor* is required to conduct Scanning to determine the existing/underground services and provides this information as As-Build drawings to the *Employer*.

### 5.4.17 Control of noise, dust, water and waste

The *Contractor* takes all precautions necessary to prevent any noise and dust whilst carrying out the *work*.

#### 5.4.18 Sequences of construction or installation

Not Applicable

#### 5.4.19 Giving notice of work to be covered up

Prior to covering up of *works*, the *Contractor* notifies the *Project Manager*. All project communication shall be in writing.

#### 5.4.20 Hook ups to existing works

*Contractor* stipulates methodology for hooking-up when working in heights and provides notification to the SHE Officer in advance and obtain permission to proceed. The *Contractor* cannot not hook up for lifting, supporting or for any other reason to any position or existing works in the plant without a written approval by the *Project Manager*.

## 5.5 Completion, testing, commissioning and correction of Defects

#### 5.5.1 Work to be done by the Completion Date

On or before the Completion Date the *Contractor* shall have done everything required to Provide the Works except for the work listed below which may be done after the Completion Date but in any case before the dates stated. The *Project Manager* cannot certify Completion until all the work except that listed below has been done and is also free of Defects which would have, in his opinion, prevented the *Employer* from using the *works* and Others from doing their work.

| | **Item of work** | **To be completed by** |
|---|---|---|
| | As built drawings of - Not applicable | Within days after Completion |
| | Performance testing of the *works* in use as specified in paragraph of this Works Information. | See performance testing requirements. |
| | | |

#### 5.5.2 Use of the *works* before Completion has been certified

Not Applicable

#### 5.5.3 Materials facilities and samples for tests and inspections

The *Contractor* provides all Materials, facilities and/or samples required for tests and inspections.

The *Employer* reserves the right to call for samples of the Equipment offered to inspect the workmanship as the work proceeds and to either accept or reject the Equipment or workmanship.

The *Employer's* Acceptance of the workmanship or Equipment must in no way reduce the *Contractor's* liability to provide complete buildings.

The purpose of these inspections is to reduce the risk of non-compliant Equipment and *Materials* being transported to site. The presence of the *Employer* at the inspections does not reduce the *Contractor's* responsibility to comply with the contract.

The *Contractor* is to make arrangements that these inspections are carried out within the boundaries of South Africa. Should any tests or inspections be required outside of the Gauteng Area, the *Contractor* is to allow in his Tender price for all costs (travel, accommodation, subsistence, etc) for two persons to attend such tests or

inspections. Accommodation and subsistence arrangements are to be submitted to the *Employer* for *Acceptance* in writing.

### 5.5.4 Commissioning

- When the perimeter fence is ready for service; commissioning shall take place to check whether the correct quantities of equipment have been delivered and the installation is in accordance with the specifications. Commissioning shall be performed in co-operation with the *Contractor* and representatives of the *Employer* and *Supervisor*.
- Practical Completion certificates will only be issued once the whole of the perimeter protection system installation satisfies the operational performance requirements of the contract and the Supervisor is satisfied that all perimeter protection systems are capable of operating effectively.
- Performance and acceptance testing to determine whether the perimeter protection systems achieves the required level of performance will only be undertaken after all routine testing, adjusting, commissioning, approvals and building work associated with the contract are complete and the work have been fully tested and commissioned by the *Contractor*.
- Details of the testing required for each system and equipment shall be included in the *Contractor's* quality plan.
- The *Contractor* shall supply all labour, materials and equipment required to fully commission and test the installation.
- All costs associated in demonstrating that the perimeter protection system performs as required by the contract, shall be borne by the *Contractor*. Equipment which fails to operate correctly or is found to be installed incorrectly shall be repaired or replaced by the Contractor. Where any test is unsuccessful the defective equipment shall be repaired appropriately and subjected to retesting.
- The *Contractor* shall fully test and commission the perimeter security system to ensure that correct operation of all systems prior to final performance and acceptance testing with the Supervisor. Tests shall include activation of electrified fence alarms for each zone to prove the efficiency of all aspects of the system to the satisfaction of the Employer.
- The *Contractor* shall do his own complete commissioning tests before the actual first take-over tests are done. This is to satisfy himself that everything is working and is in accordance with the specification.

### 5.5.5 Start-up procedures required to put the *works* into operation

No alterations or adjustments will be made to the *Works* after functional checks are done without the *Employer's* written permission.

At this stage the following must have been achieved:

a. Installation and pre-commissioning completed.
b. Testing report and the associated certificates received.
c. Signed erection and safety clearance certificates received.
d. Final Draft of the Technical, Operating, Maintenance manuals delivered.
e. All Quality Control Plan (QCP) documentation received.

### 5.5.6 Take over procedures

The *Employer* takes over completion of the *Works* on *Completion Dates* of the Accepted Program.

### 5.5.7 Access given by the *Employer* for correction of Defects

The *Project Manager* arranges the date and access to site for the *Contractor* to correct defects. The *Contractor* updates the site safety file and the records contained inside as per construction regulations. The *Contractor* will be responsible for ensuring that the area is barricaded before correcting any defects.

### 5.5.8 Performance tests after Completion

In accordance with clause X17, performance test will be conducted on completion.

### 5.5.9 Training and technology transfer

The Contractor is required to train the staff at the sites dependent on the tasks. Training will include, but is not limited to the following:

- Energized Fencing Systems
- Perimeter Protection System and Alarms
- Operation and Maintenance of the facility

The *Employer* will allocate operators and maintenance staff to participate in the manufacture, erection and commissioning of the plant as provided in this contract. It shall be the responsibility of the *Contractor* to train these personnel during the execution of the *Contract* so as to develop the standard of competence required for their subsequent employment on the operation and maintenance of equipment included in the works. In particular the *Contractor* shall provide training to the *Employer's* staff, covering the following with regard to the *Contractor's* Plant:

- to operate,
- to maintain,
- to perform disassembly and assembly,
- to test,
- to recommission,
- to be fully aware of the location of all equipment within the system's entire area of responsibility.

The *Contractor* shall accordingly take into the works an agreed number of members of the *Employer's* staff for an agreed period. The *Contractor* shall give the staff workshop hands-on training as fitter-erectors on the plant and shall give instruction in the assembly, adjustment and works testing of main items of plant.

Subsequently the *Contractor* will have the assistance of *Employer's* staff in commissioning of the plant and shall give appropriate instruction during these periods. Whilst the personnel allocated by the Employer can be expected to contribute in some measure to the erection work, the Contractor shall, in the Tender and when determining the programme, take into account that these personnel are involved only for training purposes.

The *Contractor* shall include attendance of the *Employer's* staff during testing and witnessing and for key works inspections.

The Contractor shall provide detailed proposals setting out the key aspects of training which will be provided for the *Employer's* personnel, both in the manufacturers' works and on the Site, including the proposed training programmes.

### 5.5.10 Operational maintenance, warranty and support after completion

Following the successful completion of commissioning, testing, acceptance, and Taking Over of the Works, the Contractor shall provide operational maintenance, warranty and support services for a period of thirty six (36) months or as specified in the Contract Data.

During this period, the *Contractor* shall:

- Perform all preventative maintenance activities in accordance with the approved *Maintenance Strategy*, Maintenance Plan, manufacturer's recommendations, statutory requirements, and applicable Eskom standards.
- Provide corrective maintenance and fault rectification for all defects attributable to design, workmanship, materials, software, equipment, or installation deficiencies at no additional cost to the *Employer*.

- Maintain the installed plant and equipment in a safe, reliable, and fully operational condition throughout the maintenance period.
- Undertake scheduled inspections and condition assessments at intervals specified in the approved Maintenance Plan and submit inspection reports to the *Employer*.
- Record all maintenance activities, inspections, breakdowns, repairs, replacements, and modifications in a maintenance register and provide copies to the *Employer*.
- Maintain all warranties and guarantees associated with the *Works* and ensure that warranty claims are managed and resolved timeously.
- Provide suitable technical support and emergency call-out services for critical system failures occurring during the maintenance period.
- Update the Asset Register, KKS coding, maintenance records, and as-built documentation where changes are made during the maintenance period.
- Monitor system performance against the specified design criteria and implement corrective measures where performance deviations occur.

# 6 Plant and Materials standards and workmanship

### Civil Structural Drawings

The drawings include final general arrangements. Drawings include sections and details to fully identify design concepts, design loadings and any other special features.

Drawings are fully dimensioned and the dimension figures on the drawing are deemed to be correct, even if the drawings are not to scale. No dimensions are obtained from a drawing by scaling.

All drawings show full endorsement by a Professional Civil Engineer (including Pr. Eng Number and signature evident on all civil and structural drawings).

## 6.1 Investigation, survey and Site clearance

N/A

## 6.2 Building works

N/A

## 6.3 Civil engineering and structural works

All Civil works are to be in compliance with the relevant SANS standards

## 6.4 Electrical & mechanical engineering works

All Electrical and Mechanical Engineering Works are be in compliance with the relevant SANS standards

## 6.5 Process control and IT works

N/A

## 6.6 Other [as required]

N/A

# 7 List of documents

## 7.1 Documents issued by the *Employer*

This is the list of documents issued by the *Employer* at or before the Contract Date and which apply to this contract.

Note: Some documents may contain both Works Information and Site Information.

| Document number | Revision | Title |
|---|---|---|
| 0.50/2001 | 0 | MWP MV Reticulation SLD |
| 0.50/45006 Sheet 1 | 0 | MWP Perimeter wall and Security Fence Plan, Sections & Details and Lighting Layout and Site Plan |
| 0.50/45006 Sheet 1 | 0-1 | Redline drawing showing the new locations for the mini subs |
| 240-139282493 | 1 | Security Lighting for Eskom Applications |
| 240-170000096 | 1 | Physical Security Integration Standard |
| 240-76368574 | 1 | High Security Mesh Fencing |
| 240-78980848 | 4 | Standard for Non-Lethal Energized Perimeter Detection System (NLEPDS) Electrical Components |
| 240-91190304 | 2 | Specification for CCTV Surveillance with Intruder Detection |
| Appendix A | 0 | Cable Schedule |
| N/A | 0 | Screen shot for 11kV Mini Subs Ring Feed |

# C3.2 *CONTRACTOR*'S WORKS INFORMATION

This section of the Works Information will always be contract specific depending on the nature of the *works*.
It is most likely to be required for design and construct contracts where the tendering contractor will have proposed specifications and schedules for items of Plant and Materials and workmanship, which once accepted by the *Employer* prior to award of contract now become obligations of the *Contractor* per core clause 20.1.

Typical sub headings could be

a) *Contractor*'s design
b) Plant and Materials specifications and schedules
c) Other

This section could also be compiled as a separate file.

# PART 4: SITE INFORMATION

| Document reference | Title | No of pages |
|---|---|---|
| | This cover page | 1 |
| C4 | Site Information | |
| | Total number of pages | |

# PART 4: SITE INFORMATION

Eskom Megawatt Park is a formal corporate headquarters complex in Sunninghill, Sandton, under the City of Johannesburg Metropolitan Municipality (Region E), part of Gauteng Provincial Government oversight.

- Site: Eskom Megawatt Park is Eskom's national headquarters, located in Maxwell Drive, Sunninghill, Sandton, Gauteng, South Africa.
- Institution Type: Corporate headquarters and operations centre for Eskom Holdings SOC Ltd.
- Ownership: Eskom Holdings SOC Ltd (state-owned enterprise).

**Regional Authority:**

- District Municipality: City of Johannesburg Metropolitan Municipality (DC42 equivalent, Gauteng metro).
- Local Municipality: Sandton/Sunninghill falls under Region E of the City of Johannesburg.
- Provincial Oversight: Gauteng Provincial Government (CoGTA framework applies).
- National Oversight: Eskom Holdings SOC Ltd (state-owned utility, headquartered here).

**Infrastructure:**

- Utilities: Fully serviced by Johannesburg municipal water, electricity, and sanitation.
- Roads & Transport: Accessible via N1 Western Bypass, Maxwell Drive, Rivonia Road. Gautrain Sandton Station nearby (links to Pretoria, Midrand, Johannesburg).
- Air Access: Close to O.R. Tambo International Airport (~30 km southeast).
- Rail Access: Gautrain rapid rail system connects Sandton to Midrand, Pretoria, and Johannesburg.

**Environmental Context:**

- Water & Pollution: Lies within the Jukskei River catchment, part of the Crocodile River system. Urban runoff and commercial activity contribute to localized pollution.
- Latitude & Longitude: Approx. –26.0315° S, 28.0603° E.
- GPS Listing: Maxwell Drive, Sunninghill, Sandton, Johannesburg, South Africa.

**Contact & Institutional Details:**

- Address: Maxwell Drive, Sunninghill, Sandton, Johannesburg, South Africa.
- Phone: +27 (0)11 800 8111
- Website: www.eskom.co.za
- Facilities: Office towers, boardrooms, national operations centre, corporate services.

Summary: Eskom Megawatt Park is the strategic headquarters of Eskom, located in Sandton/Sunninghill, Gauteng. It differs from the Eskom Academy of Learning in Midrand, which is focused on training and workforce development. Megawatt Park houses Eskom's executive leadership and national operations, while the Academy serves as the educational hub.

## 5. General description

Megawatt Park (MWP) is the corporate Head Office of Eskom and currently accommodates approximately 3500 Eskom employees. It is situated in the upmarket suburb of Sandton in Johannesburg and was originally built in 1975. Blocks C&D and the Link were added in 1983. The sporting facilities were also built in 1975. Megawatt Park is currently undergoing a major upgrade to fit into Eskom's future strategy of the site. The intention is to ensure compliance to National Standards and to meet all statutory requirements, particularly the SANS 10400.
The Eskom MWP building is made up of Block A, B, C and Link section and it caters for diverse business operations specializing in among others, Data Centers, Canteen, Restaurant, Conference Centers, Swimming Pool, Gymnasium, Tennis Courts, Football Sports Fields, Information and Communication Technology, Security Systems, and Business Office Environment. There are also banking Automated Teller Machines (ATM's), Medical Facilities, Library. The basement houses large Electrical and Mechanical plant, which distributes and provides the electrical power supply for Small Power Lighting, Lifts, Heating Ventilation and Air-condition services for above mentioned diverse business operations. MWP Facilities Maintenance (FM) team is responsible for the maintenance of the entire MWP infrastructure. The MWP electrical loads are supplied by power supply which is distributed via a network of the 11kV/400V Electrical Reticulation system comprising of 11kV Main Switchgear, various 400V Switchgear substations, 400V mini-substations, Kiosks, Distribution Boards and Sub-Distribution Boards.

## 6. Existing buildings, structures, and plant & machinery on the Site

MWP consists of three entrances/exit gates: Main, western and the emergency gate. The perimeter fence is approximately 4.2km long with approximately 162 light poles. The perimeter fence consists of an outer steel and face brick palisade barrier, middle climb detection system and outer non-lethal electric fence. Internal to the perimeter fence is a patrol road.

## 7. Subsoil information

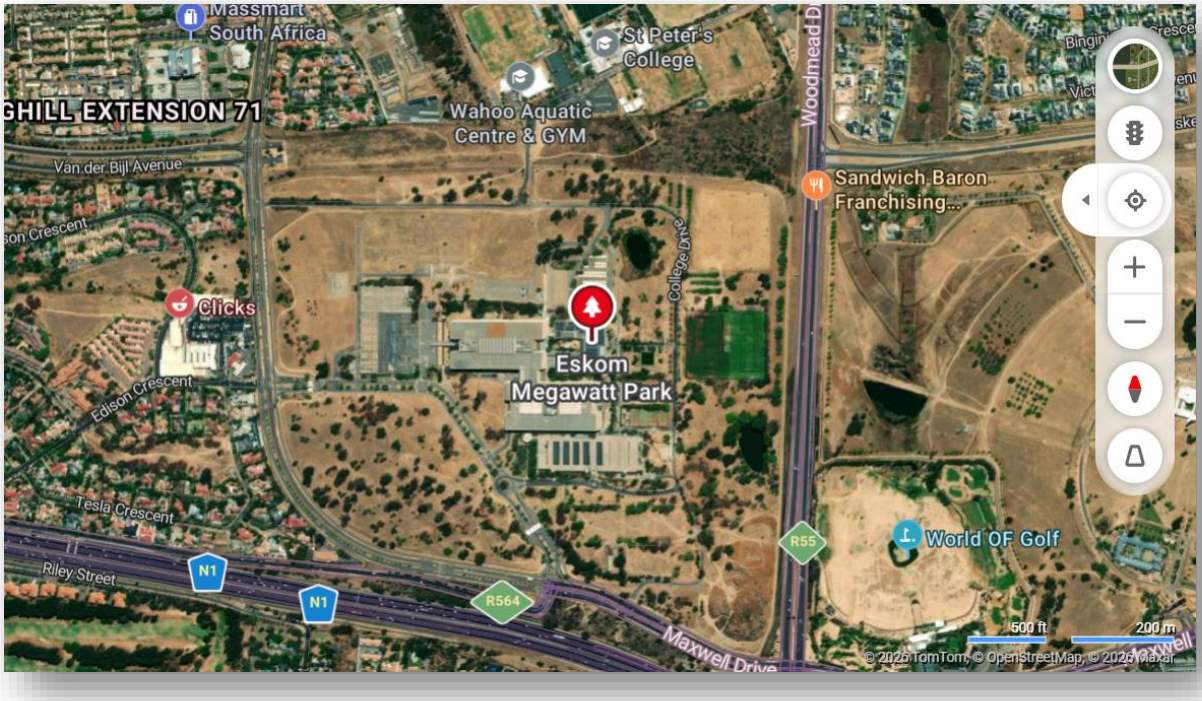
No Available information

## 8. Hidden services

As Built information is unavailable therefore the contractor will need to conduct tests for hidden services to prevent clashes.

## 9. Other reports and publicly available information

N/A


Massmart
South Africa
St Peter's
College
GHILL EXTENSION 71
Wahoo Aquatic
Centre & GYM
Van der Bijl Avenue
Sandwich Baron
Franchising...
Clicks
Eskom
Megawatt Park
College Drive
Edison Crescent
Tesla Crescent
Riley Street
N1
N1
R564
R55
World OF Golf
Maxwell Drive
500 ft
200 m
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