Eskom
National Transmission
Company South Africa ™

NEC3 Engineering & Construction Contract

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

and **(Reg No.)**

for

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CONTRACT No.

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:

LESEDING 400/132KV 500MVA TRFR 3 CIVIL WORKS

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.

Option B	The offered total of the Prices exclusive of VAT is	
	Value Added Tax @ 15% is	
	The offered total of the amount due inclusive of VAT is[1]	
	(in words inclusive of VAT)	

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: .....

Name & signature of witness .....

Date .....

Tenderer's CIDB registration number .....

[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 *NTCSA SOC Ltd, No 1 Maxwell Drive, Megawatt Park, Sunninghill, Sandton, Johannesburg*

.....

Name & signature of witness ..... Date .....

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

No.	Subject	Details
1	None	N/A

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		*NTCSA SOC Ltd, No 1 Maxwell Drive, Megawatt Park, Sunninghill, Sandton, Johannesburg*
Name & signature of witness		
Date		

C1.2 ECC3 Contract Data

Part one - Data provided by the *Employer*

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
		X13: Performance bond
		X16: Retention
		Z: *Additional conditions of contract*
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The *Employer* is (Name):	**NTCSA SOC Ltd (reg no: 2021/539129/30), 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)	**TBC**
	Address	Megawatt Park, Maxwell Drive, Sandton, Johannesburg
	Tel	**TBC**
	e-mail	**TBC**
10.1	The *Supervisor* is: (Name)	**TBC**
	Address	Megawatt Park, Maxwell Drive, Sandton, Johannesburg
	Tel No.	**TBC**
	e-mail	**TBC**

11.2(13)	The *works* are	**LESEDING 400/132KV 500MVA TRFR 3 CIVIL WORKS as per relevant drawings**

11.2(14)	The following matters will be included in the Risk Register	**Community interference for job opportunities and other reasons** **Outage constraints** **Theft of material**
11.2(15)	The *boundaries of the site* are	**Leseding SS**
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	**2 weeks**
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	**19 April 2028**

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

	***Condition* to be met**	***key date***
1	**Access Road**	**27 Oct 2026**
2	**132kV Terrace Earthworks**	**30 Jan 2027**
3	**Supply Of Materials**	**30 Aug 2027**
4	**132kV Concrete Works**	**03 Nov 2027**
5	**132kV Steel Works**	**30 Nov 2027**
6	**400kV Transformer Bay**	**3 Nov 2027**
7	**Storage Building**	**24 Mar 2027**
8	**Control Room**	**11 May 2027**
9	**Access Control Building**	**19 Aug 2027**
10	**Security Fence**	**22 Oct 2027**
11	**Concrete Wall**	**03 Nov 2027**

30.1 The *access dates* are:

	Part of the Site	**Date**
1	**Leseding SS**	**To be agreed upon at contract award**

31.1	The *Contractor* is to submit a first programme for acceptance within	**2 weeks of the Contract Date.**
31.2	The *starting date* is	**11 Sept 2026**

32.2	The *Contractor* submits revised programmes at intervals no longer than	**4 weeks.**
35.1	The *Employer* is not willing to take over the *works* before the Completion Date.	

4 Testing and Defects

42.2	The *defects date* is	**52 weeks after Completion of the whole of the *works*.**
43.2	The *defect correction period* is	**2 weeks**

5 Payment

50.1	The *assessment interval* is	**between the 25th day of each successive month.**
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** **(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:	**Weather Bureau Satellite Station at Rustenburg**
	The *weather measurements* to be recorded for each calendar month are,	**the cumulative rainfall (15 mm)** **the number of days with rainfall more than 10 mm** **the number of days with minimum air temperature less than 0 degrees Celsius** **include 10m/s wind effect** **the number of days with snow lying at 09:00 hours**

		South African Time
		and these measurements:
	The *weather measurements* are supplied by	**South African Weather Bureau**
	The *weather data* are the records of past *weather measurements* for each calendar	
	month which were recorded at:	**Weather Bureau Satellite Station in Rustenburg**
	and which are available from:	**the South African Weather Bureau and included in Annexure A to this Contract Data provided by the *Employer***
7	**Title**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.**
8	**Risks and insurance**	
80.1	These are additional *Employer*'s risks	**None**
9	**Termination**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.**
10	**Data for main Option clause**	
B	**Priced contract with bill of quantities**	
60.6	The *method of measurement* is	**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	**TBC**
	Tel No.	**TBC**
	e-mail	**TBC**
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	**Johannesburg, South Africa**
	The person or organisation who will choose an arbitrator - if the Parties cannot agree a choice or - 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	**One (1) month prior to tender closing date CPA will become effective on the contract anniversary date**

X1.1(c) The proportions used to calculate the Price Adjustment Factor are:

Proportion	**CONSTRUCTION** **Linked to index for**	**Index prepared by**
0.05	**Cement**	**SEIFSA – Table M-6**
0.30	**Actual Labour Cost**	**SEIFSA – Table C-3 (a)**
0.10	**Road Freight Costs**	**SEIFSA – Table L-2 (b)**
0.40	**Consumer Price Index (CPI)**	**SEIFSA – Table D-4**
0.15	**Fixed Portion**	
Total 1.00		

SUPPLY OF	**GALVANIZED**	**STEEL**
Proportion	**Linked to index for**	**Index prepared by**

0.05	**Zinc Metal Prices**	**SEIFSA – Table F**
0.40	**Merchant Steel Price Index – Plates HR Grade S355JR**	**SEIFSA – Table E - EX**
0.30	**Actual Labour Cost**	**SEIFSA – Table C3(a)**
0.10	**Consumer Price Index (CPI)**	**SEIFSA – Table D-4**
0.15	**Fixed Portion**	
Total 1.00		
SUPPLY AND CABLES AND	**DELIVERY OF CLAMPS**	**CONDUCTOR,**
Proportion	**Linked to index for**	**Index prepared by**
0.35	**99.7 EC Grade Rod**	**SEIFSA – Table R**
0.07	**Road Freight Costs**	**SEIFSA – Table L-2(B)**
0.15	**High Strain Steel – Hot Rolled**	**SEIFSA – Table E-A**
0.18	**Actual Labour Cost**	**SEIFSA – Table C-3(a)**
0.10	**Electrical Engineering**	**SEIFSA Table G-1**
0.15	**Fixed Portion**	
Total 1.00		
SUPPLY AND BUSBARS	**DELIVERY OF**	**TUBULAR**
Proportion	**Linked to index for**	**Index prepared by**

0.05	**Zinc Metal Prices**	**SEIFSA – Table F**
0.30	**Merchant Steel Price Index – Round Bar**	**SEIFSA – Table E - EX**
0.10	**Electrical Cable Manufacturing Materials**	**SEIFSA – Table N**
0.10	**Conductor Steel Core**	**SEIFSA – Table E - 4**
0.20	**Actual Labour Cost**	**SEIFSA Table C-3(a)**
0.10	**Consumer Price Index**	**SEIFSA Table D - 4**
0.15	**Fixed Portion**	
Total 1.00		

X2	**Changes in the law**	**Of South Africa**
X7	**Delay damages**	
X7.1	Delay damages for Completion of the whole of the *works* are	**0.1% per day up to a limit of 10% of contract value**
X13	**Performance bond**	
X13.1	The amount of the performance bond is	5%
X16	**Retention**	
X16.1	The *retention free amount* is	**R0**
	The *retention percentage* is	**10%**
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** • **the total of the Prices at the Contract Date and** • **the amounts excluded and unrecoverable from**

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.** **The *Contractor's* total liability for the additional excluded matters is not limited.** **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,** • **Defects due to manufacture and fabrication outside the Site,** • **loss of or damage to property (other than the *works*, Plant and Materials),** • **death of or injury to a person and** • **infringement of an intellectual property right.**
X18.5	The *end of liability date* is	**(i) seven years after the *defects date* for latent Defects and** **(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.** **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.** **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 4710303126 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 *works*, Plant and Materials	The replacement cost where not covered by the *Employer*'s insuranc 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 *works*, 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	<u>Loss of or damage to property</u> <u>*Employer*'s property</u> The replacement cost where not covered by the *Employer*'s insuranc The *Employer*'s policy deductible, as Contract Date, where covered by the *Employer*'s insurance <u>Other property</u> The replacement cost <u>Bodily injury to or death of a person</u> 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 applica 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 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.

C1.2 Contract Data

Part two - Data provided by the *Contractor*

Clause	Statement	Data
10.1	The *Contractor* is (Name): Address Tel No. Fax No.	
11.2(8)	The *direct fee percentage* is The *subcontracted fee percentage* is	
11.2(18)	The *working areas* are the Site and	
24.1	The *Contractor's* key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job Responsibilities: Qualifications: 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	
11.2(14)	The following matters will be included in the Risk Register	
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)	The *bill of quantities* is in	

11.2(31)	The tendered total of the Prices is			
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 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 **Note: Hourly rates are estimated 'cost to company of the employee' and not selling rates.** **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

Proformas for Bonds & Guarantees

For use with the NEC3 Engineering & Construction Contract

The *conditions of contract* stated in the Contract Data Part 1 include the following Secondary Options:

Option X13: Performance Bond

Each of these secondary Options requires a bond or guarantee “in the form set out in the Works Information”. Pro forma documents for these bonds and guarantees are provided here for convenience but are to be treated as part of the Works Information.

The organisation providing the bond / guarantee does so by copying the pro forma document onto his letterhead without any change to the text or format and completing the required details. The completed document is then given to the *Employer* within the time stated in the contract.

Pro forma Performance Bond – Demand Guarantee (for use with Option X13)

(to be reproduced exactly as shown below on the letterhead of the Contractor's Parent Company)

NTCSA SOC Ltd
Megawatt Park
Maxwell Drive
Sandton
Johannesburg

Date:

Dear Sirs

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

Performance Bond – Demand 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 Ltd, 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);

1.8 "Project" - means [insert if applicable.].

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 Group Executive, Divisional Executive, Senior General Manager, General Manager or its delegate;

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

3.3 state 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 _____

For and behalf of the Bank

Bank Signatory: _____ Bank Signatory: _____

Witness: _____ Witness: _____
Bank's seal or stamp

PART 3: SCOPE OF WORK

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C3.1: EMPLOYER'S WORKS INFORMATION

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Description of the *works*

1.1 Executive overview

Leseding Substation is interconnected to Merensky Substation through the underlying 132 kV Distribution network and a 400 kV Transmission line. it was confirmed that Leseding Substation would exceed firm capacity by 2023, due to load growth in the area. The primary driver of this load growth is the increase in mining activities and potential smelting operations occurring in and around the Leseding and Merensky substations.

The scope includes civil works, hardware, structures, earth mat, oil traps, yard stone, trench covers, lighting etc. The designs make use of standardised substation components ranging from steel supports, equipment, through to complete bay layouts, unless otherwise indicated on design layouts.

DETAIL SCOPE OF WORK

The civil engineering scope of work for this project includes the following:

- Extend 132kV busbar.
- Extend 132kV yard terrace to tie in to existing.
- Construct plinth for the third 1 x 500MVA 400/132kV transformer.
- Add a bus section (with associated bus zone protection) on the 132kV busbar.
- Equip and commission all new infrastructures at Leseding Substation with all associated primary and secondary plant.
- Upgrade safety and security fences to latest standard (Entire Substation).
- Install a Guard House, as per latest standard.
- Cater for storage area
- Refurbish Control room damages due to unstable ground conditions
- Install another 132kV Bus Coupler, to prevent islanding of a portion of the 132kV Busbar, with the installation of the New 132kV Bus Section.

Access Road
The contractor shall refurbish the existing road before the delivery of the new transformer according to LES23P04-SE-D39.

Terrace
The terrace to be extended according to LES23P04-SE-D38

Transformer

- New 500 MVA transformer will require a new plinth as shown on LES23P04-SE-D41 SHT 1
- Transformer 1 fire wall to be installed as per LES23P04-SE-D41 SHT 2

Foundations

- New foundations required in the new and existing yards are captured on the following drawings:
  - LES23P04-SE-D8/D9 – Foundation, trench and earth-mat drawing
  - LES23P04-SE-D16 – Bay Layouts
- Micro-piles to be installed according to LES23P04-SE-D105

Steelworks

- New steelwork required in the new and existing yards are captured on the following drawings:
  - LES23P04-SE-D13 - Steelwork Marking Plan
  - LES23P04-SE-D16 – Bay Layouts
  - LES23P04-SE-D81 - Steelwork Proformas

Fence

- Three tier security fences to be installed as shown on LES23P04-SE-D14

- Perimeter security lighting to be installed as shown on LES23P04-SE-E43

Control Building
- Existing control building to be upgraded according to LES23P04-SE-E47

Access Control Building
- New access control building to be upgraded according to LES23P04-SE-E50

Drainage
- The terrace extension requires stormwater drainage to LES23P04-SE-D43

HVAC & Lighting
- New access control building to be upgraded according to LES23P04-SE-E43.

Flood light
- New floodlighting to be installed as shown on LES23P04-SE-E44.

Demolishing
- Demolish the existing concrete revetment wall, ensuring no damage to the existing HV yard during earthworks for the terrace extension.
- Demolish the geo-cell concrete cut-off drain to enable its relocation to a new position for the installation of the three-tier fence (refer to drawing Les23P04-SE-D43).
- Demolish a section of the safety fence within the 132kV yard and dispose of spoil material.
- Remove piggy-backed non-lethal equipment attached to the safety fence and dispose of spoil material.

Oil Dam
- Existing oil dam to be upgraded to the latest standard. Add in compartment wall, mesh and staircase. Refer to 0.54-3754-11 for details.

Yard Stones
- Yard stone to be installed as shown on LES23P04-SE-D45
- Yard stone to be topped up to at least 100mm across all HV yards, and with the latest specifications.

Waste Material
- Construction rubble must be disposed of, as per Eskom's environmental and waste disposal procedures.
- Scrap steel and other material that will not be re-used will remain the property of Eskom, unless otherwise authorized, and is to be scrapped in accordance with Eskom's asset disposal procedures
- Contractor to ensure that excavated contaminated material is disposed of at a registered landfill site.

1.1. *Employer*'s objectives and purpose of the *works*

The objective of this service acquisition is to find a competent service provider to executive the scope of work within time, cost and built-in quality of prescribed standard.

The purpose of the scope of work is to expand the substation to cater for current and future power utility demand from Leseding MTS.

1.2. Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
AFC	Approved for construction
OBL	Outside battery limits
PM	Project Manager
QS	Quantity Surveyor
EA	Engineering Assistant
HV	High voltage
kV	Kilo volt
ORHVS	Operating Regulations for High Voltage Systems
SHEQ	Safety, Health, Environmental and Quality
NTCSA	National Transmission Company of South Africa

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:
Site Inaugural meeting	2 weeks prior works commencement	Leseding Substation	*Employer*, *Contractor*, *Supervisor*, and core project team
Risk register and compensation events	Weekly on Wednesday when necessary, at Leseding Substation or MS Teams	Leseding Substation or MS Teams	*Employer*, *Contractor*, *Supervisor*, and core project team
Overall contract progress and feedback	Monthly on Wednesday at Leseding Substation or MS Teams	Leseding Substation or MS Teams	*Employer*, *Contractor*, *Supervisor*, and core project team
Adhoc Meetings	As and when required basis	Leseding Substation or MS Teams	Employer, Contractor, Supervisor, and core project team

The contractor shall avail safety file at the site inaugural meeting for auditing purposes.

Project progress meetings will be held on site as and when required in order to track work progress, safety, environmental and other issues. The contractor must avail himself to these meetings.

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

The documentation supplied by the Contractor shall include be in both hard copy and electronic form. A minimum of three hard copies will be provided. Each document shall include, at a minimum, the following information:

- Title
- Status
- Revision
- References
- Purpose
- Description

2.3. Health and safety risk management

In addition to the requirements of the laws governing health and safety, Eskom has additional requirements particular to the *works* and the Working Areas for this contract. Refer to the following documents as a minimum:

- The OHS Act 85/1993, its Regulations and incorporated SANS Codes
- Eskom SHEQ Policy:32-727
-
- Health and Safety Specification: 559-559476474
- Working at Heights Standard: 32-418
- Life Saving Rules: 240-62196227
- Eskom Vehicle Safety Specification:32-345
- Eskom Substance Abuse, 32-37
- Eskom Occupational Health & Safety Incident Management Procedure, 32-95
- Eskom Employees Right of refusal to Work in an Unsafe Situation Procedure 240-43848327.
- Operating Regulations for High Voltage Systems Procedure: 32-846

It is the Contractor's responsibility to also ensure that the safety file has been audited by the Client before establishing site.

The Contractor must be in possession of current First aid Level 3 certificate. The Contractor's Crane must have a valid and current crane test certificate and crane operator's certificate. All tools must have valid and current test certificates,

The Contractor will only leave site upon a written site instruction has been issued by an NTCSA site representative. Working hours will be from 07h30 to 16h30 during weekdays (as per outages), weekend work to be carried out only on request and approval by NTCSA North Grid management.

The Contractor is to have an Eskom certified and authorized person available in each area where work is being performed at all times in accordance with the Eskom ORHVS Procedure 32-846.

A detailed risk assessment with sufficient control measures must be done PRIOR commencement of any task on site by a competent risk assessor. The Contractor Supervisor shall ensure strict adherence to the Safe Work Procedures and the identified control measures. If needed the Contractor is to visit construction site at own cost before work commences to familiarise him/herself with the scope of work and develop a baseline risk assessment.

Before any excavation is commenced, it will be the responsibility of the Contractor to ascertain from Responsible Eskom site Representative the position of any existing services on site. Once these are indicated to the contractor they shall be deemed “known”. Should the contractor damage to the services at any point during construction the contractor will be liable for repairs at their own cost..

The Contractor’s attention is drawn to the fact that other contractors will be on site hence access and interfacing with them will be required. The Contractor shall allow safe access for other contractors and NTCSA personnel when required. Where multiple contractors are working close by, contractors will be required conduct a joint risk assessment and communicate shared risks to their respective contractors.

The Contractor shall establish a refuse control system. All waste is to be collected and disposed of as required by NTCSA and the local authority Environmental.

The Contractor shall make his own arrangements for the provision of accommodation for his employees.

2.4. Environmental constraints and management

The *Contractor* shall comply with the environmental criteria and constraints stated in 240-154832228: NTCSA Environmental Tender Evaluation Report

The Contractor is required to ensure that all goods, services or works supplied in terms of the tender/contract/order conform to:

- all applicable environment legislation,
- EPC32-727: Eskom SHEQ Policy,
- 240-133087117: Environmental Incident Management Procedure
- 240-9881649: transmission Waste Management Plan Update
- 240-180100134: Environmental Requirements for Contractors and /or Suppliers
- 240-110600836: Contractor Environmental Requirements Proforma

The Eskom Transmission Environmental Management Programme provides the aspects and impacts that will require management and must be followed strictly. For tendering purposes, contractor shall prepare the **following method statements** for all environmental concerns raised through the NTCSA Environmental Management Plan and in any other relevant forum such clarification meetings

- Water supply
- Waste management
- Storage of hazardous material
- Noise management
- Dust management
- Soil erosion
- Stormwater management
- Mixing of concrete
- Vehicle maintenance and refuelling (in case of an emergency)
- Vegetation clearance
- Accessibility of the site (access road)
- Equipment and construction material storage
- Topsoil management
- Rehabilitation

Any changes to the approved method statements / mitigation plan shall be reported and approved by NTCSA Environmental representative and Project Manager prior to the commencement of work and during construction. The main supplier must ensure that all sub-contractors’ environmental mitigation plan comply with legal and other requirements and includes all the environmental risks associated with the scope of work. The main (principal) contract shall define the specific system elements (risk) applicable to the subcontractor’s scope of work or supply.

No environmental records shall be destroyed or discarded by the supplier. NTCSA and the contractor shall agree that the supplier retains certain environmental records and provides Eskom with copies.

The Contractor is to send a flash report for any environmental incidents that have occurred on site as soon as possible or within 24 hours to the Environmental Advisor Contact person and PM, clearly stating any impact to the environment.

Waste generated for the Leseding refurbishment project must be disposed at a registered landfill site and contractor shall retain records of disposal. This includes waste generated during demolition of the existing type oil holding dam and existing septic tank.

Deviations from these requirements will be regarded as a non-conformance. Should there be a concern regarding environmental performance and non-conformance to environmental requirements, management engagements and interventions will be introduced to determine a means to addressing the shortfalls.
Once these interventions have been explored and exhausted, then the Eskom supplier disciplinary process must be followed.

NB: The Contractor is to compile a complete environmental file. The file needs to be audited and approved by the NTCSA Environmental Department, prior to commencement of work.

2.5. Quality assurance requirements

The following standards contain provisions that, through reference in this text, constitute provisions of this specification. At the time of publication, the revisions indicated were valid. All standards are subject to review, and parties entering into service agreements based on this specification are encouraged to investigate the possibility of applying the most recent revisions of the standards listed below. Information on currently valid national and international standards may be obtained from the Information Centre at Megawatt Park and Technology Standardisation Department.
In the event of conflict between documents invoked here and the contents of this specification, the contents of this specification shall be considered to have preference. Such conflict shall be pointed out to the Employer for confirmation.

- Eskom NWS 1674 - “Standard Specification for approval of drawings submitted by Contractors and Contractors.”
- Project Quality plan

The Employer requires that the Contractor operate a quality management system as stated in the Scope.
The Employer requires that the Contractor provide a quality policy statement and quality plan which complies with requirements stated in the Scope.

Nonconformity reports raised by Eskom and issued against the supplier shall be investigated by the supplier as a matter of urgency in order to determine the root cause, corrective action measures, as required, with implementation time frames. A formal response shall be submitted to Eskom for its review, evaluation, and acceptance, within a maximum of 14 calendar days from the date of issue of the nonconformity and should be aligned with the site requirements/procedure.

2.6. Programming constraints

A comprehensive and fully detailed programme is to be submitted within the time frames stated in the “Data by Employer” section and should be in MS Project format, indicating all milestones and critical dates. This programme must first be approved by the Project Manager and must be updated monthly or as requested by the Project Manager. Only MS Projects format will be allowed.

The following dates shall be clearly reflected on the programme:
Starting and completion dates for all activities as well as relevant key dates for hold or witness points. All relevant significant activities shall be shown in order to monitor the progress on site or in the workshop. The programme shall also reflect a 2-week period for inspection and correcting of Defects before the completion date.

The Contractor must allow a float of at least 15 additional days for rainfall exceeding the 15 mm trigger. This float will serve as project contingency to mitigate any delays caused by rain. No compensation events related to rain will be considered until the full 15-day rain float has been exhausted.

In accordance with clause 31.2, the Contractor is required to clearly show and demonstrate all floats in the programme. Under no circumstances may the Contractor conceal floats from the Employer, as these project floats are available for use by both parties to address any delays that may arise during the project.
Updated programmes must be available at all site meetings reflecting progress to date.

The Contractor shall include all stages including deliverables per stage in the programme. The programme shall be submitted to the Employer for acceptance in MS Projects format.

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

The Contractor is to submit an organogram showing all key people involved in the contract 7 days after contract award. All key personnel must be appointed in writing, must be current for the specific site and area of work and must be kept on file.

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 NTCSA 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 **4710303126**;
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)

The contractor must submit an FRI within 2 weeks of contract award.

Details on how to submit invoices and additional information:

- Ensure that the Eskom order number is clearly indicated on your invoice together with the line number on the order you are billing for.
- All Electronic invoices must be sent in PDF format only.
- Each PDF file should contain one invoice; or one debit note; or one credit note only as Eskom's SAP system does not support more than one PDF being linked into workflow at a time.
- Your E-mail may contain more than one PDF file (e.g. 2 invoices on 2 separate PDF files in one e-mail)
- Send all invoices in PDF to Accounts Payable Department: Invoiceseskomlocal@NTCSA.co.za and a copy to the Project Manager
- If there is Cost Price Adjustment (CPA) on your invoice we recommend that you issue a separate invoice for CPA so that if there are any issues on the CPA the rest of the invoice can be paid while resolving the CPA issues.
- Your company can request a park invoice report from the Finance Shared Services (FSS) contact center which can then be followed up and corrected. You are welcome to forward the details of invoices corrected to the FSS contact center.

The following wording needs to appear on the invoice: "Your invoice is encrypted in order to comply with SARS requirements that invoices and statements sent electronically are tamperproof."

- If there is Cost Price Adjustment (CPA) on your invoice we recommend that you issue a separate invoice for CPA so that if there are any issues on the CPA the rest of the invoice can be paid while resolving the CPA issues.
- Introduction of electronic invoicing does not guarantee payment but will ensure visibility of all invoices and ensure that no invoices get lost. If the goods receipt is not done the invoice will be parked and the system will automatically send an e-mail to the end user to do the goods receipt. This is also tracked by Eskom through the park invoice report.
- Your company can request a park invoice report from the Transmission Power Delivery Projects Finance Team which can then be followed up and corrected. You are welcome to forward the details of invoices corrected to the FSS contact center.

Once the invoice has been sent; all communication regarding the payments should be addressed with the Project Manager and Project Finance Team, Zama Ncamphalala (Project Accountant) +27 11 516 7746, Doreen Segopa (Project Accountant) +27 11 800 5641and Tumelo Aphane (Project Accountant) +27 11 800 5437.

No communication regarding payment should be sent by the Contractor/Supplier directly to Accounts Payable.

The Contractor attaches the detailed assessment of the amount due to each tax invoice showing the Price for Work Done to Date for each item in the Price List for work which he has completed.

A tax invoice shall be submitted on completion of the works in the format required. A breakdown of all work completed during the previous period shall be attached. Invoicing and relevant details will be discussed at site hand-over meeting. Payments will be processed once all completion certificates and invoices are submitted

2.9. Insurance provided by the *Employer*

Refer to data by *Employer* **Z13**

2.10. Contract change management

Changes to the contract will be notified and addressed as per the NEC3 – ECC3 and as per NTCSA's internal Governance Processes for approval. Modifications to work can only resume once NTCSA approval is obtained and as instructed by the NTCSA Representative (Project Manager).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, Proforma and Guarantees.

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.

2.11. Records of Defined Cost, payment & assessments of compensation events to be kept by the Contractor

Defined costs are actual costs incurred by the Contractor. These costs should not include profit or company overheads.

In an event of labour costs, the Contractor is required to provide pay slips of the employees used. The labour mark-up indicated in this contract will be added to these actual costs to form the final value of the compensation event.

In the event that the Contractor is required to supply anything other than people, the Contractor is required to provide a copy of his Contractors invoice. The profit and overhead mark-up indicated in this contract will be added to these actual costs to form the final value of the compensation event.

Copies of payslips and Contractors invoices are to accompany the requests for compensation events.

The Contractor shall under no circumstances refuse additional work on the basis of costs as defined above. Copies of all Compensation Events and supporting documentation shall be kept and provided to Eskom when required.

3. Engineering and the *Contractor*'s design

3.1. *Employer*'s design

Eskom has designed the new foundations, buildings, steel structures, earthworks, road, water and sewer network, drainage, terracing, fencing, etc as detailed on the relevant drawings listed in Section 7 of this document.

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

The Contractor is to design any temporary works required to construct the works if not provided in the designs.

In the case where NTCSA requires the contractor to design some parts of the works. It will be communicated and relevant procedures and process will be applicable.

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

In the case where NTCSA requires the contractor to design some parts of the works. It will be communicated and relevant procedures and process will be applicable.

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

In the case where NTCSA requires the contractor to design some parts of the works. It will be communicated and relevant procedures and process will be applicable.

3.5. Use of *Contractor*'s design

In the case where NTCSA requires the contractor to design some parts of the works. It will be communicated and relevant procedures and process will be applicable.

3.6. Design of Equipment

Not applicable

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

The Contractor to provide necessary equipment to execute the works on site.

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

The Contractor is to provide NTCSA with detailed “as built” records where deviations have been made from construction drawings within 14 days after Completion.

4. Procurement

4.1. People

4.1.1. Minimum requirements of people employed on the Site

The Contractor shall comply with the Employer’s site requirements in the use of labour for the works.

All people employed on site by the Contractor shall have Police clearance before work on site can commence. The Contractor’s employees shall be sober on site and may be subjected to random breathalyser tests.

Tenderers are required to submit proposals for the type and number of jobs that will be created and retained in South Africa as a direct result of being awarded a contract.

Type of Jobs to be Created	Number of Jobs to be retained

Local production and content

As per DTi guidelines {PPPFA act section 9, paragraph 9(1)} Steel forms part of the designated commodities with a threshold of 100%. As a result tenderers are required to fill in, sign and submit local content declaration forms to confirm their local spend on steel. Failure to do as stated above and to meet the threshold as set by DTi will disqualify a tenderer.

Material	Threshold %
Steel	100%
Concrete	100%
Cement	100%

4.1.2. BBBEE and preferencing scheme

The Contractor shall comply with the Employer’s Broad Based Black Economic Empowerment (B-BBEE) or preferencing scheme measures

Objective criteria for preferential procurement will apply as follows:

(a) a tenderer subcontracting a minimum of 30% to: EME/QSE that are B-BBEE level 1 to 2.

Eskom Target	Supplier Proposal

EME 1/2 and QSE 1/2 - 30%	**30% EME Level 1**

4.1.3. Supplier Development, Localisation and Industrialisation (SDL&I)

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the SDL&I in accordance with and as provided for in the *Contractor*'s SDL&I Compliance Schedule stated below:

	YES	NO
a) Is there CIDB compulsory training?	☑	☐
If *Yes,* what is the% of the Construction Skills Development Goal % (CSDG)	**0.25%**	

If the answer above is Yes, it will then be mandatory for the supplier to match Eskom's targets

Criteria	Eskom Target	Tenderer Commitment
Health and safety officer	1	1
Site supervisor	1	1
Office administrator	1	1
Steel fixer	2	2
Concrete Hands	2	2

NOTE: 5% fee directed towards enterprise development support, 0.2% of the total project value for Built program.

The *Contractor* shall keep accurate records and provide the *Project Manager* with reports on the *Contractor*'s actual delivery against the above stated SDL&I criteria. The Contractor shall keep accurate records and provide the Project Manager with reports on the Contractor's actual delivery against the above stated SDL&I criteria.

The *Contractor*'s failure to comply with his SDL&I obligations constitutes substantial failure on the part of the *Contractor* to comply with his obligations under this contract.
Skills development will not be a weighted criterion, but tenderers will be encouraged to propose training initiatives in terms of the skills required for this project. NTCSA will apply a penalty of 2.5% of the contract value for failure to meet SDL&I obligations after agreement is reached. For the duration of the contract, NTCSA will retain 2.5% of every invoice (excluding VAT) as security for the fulfilment of all SDL&I Obligations. The retained amounts shall only be released to the contractor upon fulfilment of all SDL&I obligations at the end of the contract. Alternatively, the contractor shall submit a bond equivalent to 2.5% of the contract value and shall only be released to the contractor upon fulfilment of all SDL&I obligations

4.2. Subcontracting

4.2.1. Preferred subcontractors

The Employer reserves the right to approve all subcontractors that the Contractor intends to enter into subcontracts with in order to make sure that the subcontractor complies with operational standards.

4.2.2. Subcontract documentation, and assessment of subcontract tenders

The NEC suit is compulsory for all subcontract documentation.

4.2.3. Limitations on subcontracting

The Contractor shall not subcontract more than twenty five percent (25%) of the whole of the contract.

4.2.4. Attendance on subcontractors

The *Contractor* is responsible for providing the Works as if no work is subcontracted.

4.3. Plant and Materials

4.3.1. Quality

The *Contractor* shall control his activities and processes in accordance with Eskom's Quality Requirements for Procurement of Assets, Goods & Services QM 58, as amended. Quality requirements are described in the Project Quality Plan document number TB-PQA&QC-TX, as amended.

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

Not applicable

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

The contractor is to procure any plant and material necessary to execute the works on site.

4.3.4. Spares and consumables

Not applicable

4.4. Tests and inspections before delivery

All structural steelwork as well as fencing and lighting poles is to be inspected by the *Contractor* before being delivered to site and should have a certificate from the Galvanizer stating the coating thickness. The requirements are also indicated on the Project Quality Plan document number TB-PQA&QC-TX-PQP-2009 and QM 58.

4.5. Marking Plant and Materials outside the Working Areas

Not applicable

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

The contractor is to ensure that they have the necessary equipment and temporary works required to execute the works on site.

5. Construction

5.1. Temporary works, Site services & construction constraints

5.1.1. *Employer*'s Site entry and security control, permits, and Site regulations

Entry to the site is governed by the Grid's Engineering Assistant and the Contractor shall adhere to all regulations given. All employees are to sign the Workers declaration on entering and leaving the working area. The Contractor is to have an NTCSA certified and authorized ORHVS person available on site at all times in accordance with ORHVS Procedure 32-846.

The authorized ORHVS person is to have a valid first aid level 2 certificate. The authorization procedure for a permit to work shall be done before the Contractor commences work on site. It is the Contractor's responsibility to ensure that the authorization procedure for a permit to work is obtained before access to the work can be given. The Contractor will be required to have an Eskom certified and authorized ORHVS person available in each area where work is being performed.

5.1.2. Restrictions to access on Site, roads, walkways and barricades

Access on site is restricted to the area in which the Contractor is working and which has been barricaded. Strictly no movement outside the barricaded working area unless escorted by authorized HV Plant personnel. Some of the work is to be performed in the live HV Yard and the contractor will take all necessary precautions and work in conjunction with NTCSA personnel.

5.1.3. People restrictions on Site; hours of work, conduct and records

The Contractor is to supply NTCSA with Police clearance for all the employees on site before Work commences. The normal working hours shall be from 07:30 am to 16:30 pm. Any work done outside this duration must be arranged through the senior HV Plant supervisor.
The maximum speed limit on site is 40 km/h.

5.1.4. Health and safety facilities on Site

There are no ablution facilities available on site. Contractor to provide their his own ablution and dining facilities in accordance with the TPD Health and Safety Specification. Refer to Clause 24 -***Contractor's Site Facilities*** in the Health and Safety Specification. No work on site will be allowed to commence before the ablution facilities are available on site.

5.1.5. Environmental controls, fauna & flora, dealing with objects of historical interest

The Contractor shall control his activities and processes in accordance with TDPMAN-ST-37: Environmental Requirements for Contractors and /or Suppliers. The Contractor shall establish a refuse control system. All waste is to be collected and disposed of as required by NTCSA and the Local Authority.

5.1.6. Title to materials from demolition and excavation

All the materials from excavation and demolition must be disposed of by the Contractor except where expressly stated by the PM or the relevant staff from the Grid. All rubble and other materials must be classified, weighed and transported to a registered dumping site.

5.1.7. Cooperating with and obtaining acceptance of Others

The Contractor's attention is drawn to the fact that other contractors will be on site and access and interfacing with them will be required. The Contractor shall allow safe access for other contractors and Eskom personnel when required.

The site is situated near communities. Therefore the contractor may be required to liaise with local authorities for community stability purposes in and minimizing interruption of executing the works..

5.1.8. Publicity and progress photographs

Warning signs and notices must be clearly displayed at all sites where work is taking place. It is the responsibility of the Contractor to ensure that all its workers and visitors adhere to all signs.
No photographs are to be taken without the permission of the E.A.

5.1.9. *Contractor*'s Equipment

All equipment must be registered in the equipment register and as per 32-136. The Contractor is responsible for insurance of his equipment. The Contractor is to take stock of his material and equipment on a regular basis and any shortage to be reported to the Project Manager immediately, stating if it is hired or owned.

5.1.10. Equipment provided by the *Employer*

Not applicable

5.1.11. Site services and facilities

All the water necessary for construction purposes must be provided for by the Contractor. It is the Contractor's responsibility to test any water before using it for construction purposes. The Contractor to submit a test Certificate for the water used on site. Electricity is available on site. The Contractor shall provide all connections, extensions and additional supply points necessary for the works. Any measures which the Contractor may require to maintain continuity and quality of supply shall be arranged by him at his own expense. The Contractor shall provide everything else necessary for providing the Works.

5.1.12. Facilities provided by the *Contractor*

The Contractor supplies all plant and materials required for providing the Works. There are no Office or Telephone facilities available on site. The Contractor is to provide his own facilities on site and ensure that these facilities are kept in a clean condition to Eskom's satisfaction

5.1.13. Existing premises, inspection of adjoining properties and checking work of Others

For work that is to be carried out next to an existing HV yard and the *Contractor* is to take note of the surrounding foundations, equipment and buildings.

5.1.14. Survey control and setting out of the *works*

The Contractor is responsible for setting out the works.

5.1.15. Excavations and associated water control

All necessary precautions shall be taken to ensure that deep excavations are safe and that the sides are stable, if not they shall be battered. All excavations are to be properly barricaded at all times.

5.1.16. Underground services, other existing services, cable and pipe trenches and covers

Before any excavation is commenced, it will be the responsibility of the Contractor to ascertain from the "Engineering Assistant" the position of any existing services on site. Once these are indicated to the Contractor they shall be deemed "known". Any costs incurred for repairs to any "known" services shall be for the Contractor's account.

5.1.17. Control of noise, dust, water and waste

The *Contractor* shall control his processes and procedures so as to minimise noise and dust. All waste is to be collected and disposed of as required by Eskom and the Local Authority.

5.1.18. Sequences of construction or installation

Some of the works will be impacted by outages. The contractor will discuss outages with the PM to schedule the works accordingly. Contractor to ensure security of the site and equipment when working on the terrace extensions.

5.1.19. Giving notice of work to be covered up

The Contractor is to give the Site Supervisor at least 3 days' notice before covering up the work

5.1.20. Hook ups to existing works

The earthing of the new foundations is to be connected to the existing yards earthing. The new oil dam drainage should be connected to the existing oil drainage for the transformers. The sewer piping to be connected to the new sewer connections. The modified security fence to be connected to the existing fence.

5.2. Completion, testing, commissioning and correction of Defects

5.2.1. 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	Within 14 days after Completion

5.2.2. Use of the *works* before Completion has been certified

To allow for the erection of electrical equipment some parts of the feeder bays may need to be made available to the equipment suppliers before the works are completed. This will be managed by the Site Supervisor to ensure harmony and coordination of all on-going works.

5.2.3. Materials facilities and samples for tests and inspections

From time-to-time random test cubes of the ready-mix concrete used will be requested, however, for any hand machine mixes test cubes will be mandatory.

5.2.4. Commissioning

Detailed commissioning procedure and compliance certificate shall be issued by the Contractor. Final certificate of compliance shall be issued by the contractor to the Employer after Completion.

5.2.5. Start-up procedures required to put the *works* into operation

Not applicable

5.2.6. Take over procedures

The *Contractor* is to arrange an inspection at least 1 week before completion to inspect and identify any defective work.

Upon completion of the works, a formal take over by the employer will take place after correction of identified defects.

5.2.7. Access given by the *Employer* for correction of Defects

The Project Manager arranges for the Employer to allow the Contractor access to and use of a part of the works which has been taken over if needed to correct a Defect. After the works have been put into operation, Entry to the site is governed by the Grid's Engineering Assistant and the Contractor shall adhere to all regulations given.

5.2.8. Performance tests after Completion

The procedure for performance test is specified under the project quality plan document.

5.2.9. Training and technology transfer

Not applicable.

5.2.10. Operational maintenance after Completion

Not applicable

6. Plant and Materials standards and workmanship

6.1. Investigation, survey and Site clearance

Not applicable

6.2. Building works

Not applicable

6.3. Civil engineering and structural works

Title	Date or revision	Tick if publicly available
Eskom Specification, Standards, Policies and Procedures		
The OHS Act 85/1993, its Regulations and incorporated SANS Codes	Latest Rev.	✓
Eskom SHEQ Policy:32-727	Latest Rev.	✓
Eskom's Covid 19 Health and Safety Policy Statement: 240-155373927	Latest Rev.	✓
Health and Safety Specification: TPD PDPMAN-SP 84	Latest Rev.	✓
Working at Heights Standard: 32-418	Latest Rev.	✓
Life Saving Rules: 240-62196227	Latest Rev.	✓
Eskom Vehicle Safety Specification:32-345	Latest Rev.	✓
TST41-120 Environmental Requirements for the Procurement of Assets, Goods and Services.	Latest Rev.	✓
TST0015 Training, assessment and authorization of persons for the operation & maintenance of the Power System Contractor Safety in a High Voltage Environment	Latest Rev.	✓
TPC41-283 Non Conformance Procedure	Latest Rev.	✓
Occupational Health and Safety Act No. 85 of 1993	Latest Rev.	✓
TST41-168 Quality Requirements for Procurement of Assets, Goods & Services.	Latest Rev.	✓
Eskom Particular Specifications		
EPS 1 Specification for Earthmat	Attached	
EPS 2 Specification for Stone Surfacing of Yard	Attached	
EPS 3 Variations and Additions to Standardised Specifications	Attached	
Standardised Specifications		
SABS 1200 Standardised Specification for Civil Engineering Construction		✓
SANS 2001 CC1:2007 Construction Works Part CC1: Concrete Works (structural)		✓
SANS 2001 CS1:2007 Construction Works Part CS1: Structural steelwork		✓
SANS 121 Hot Dip Galvanized Coatings on Fabricated Iron and Steel Articles -–Specifications and Test Methods		✓

1 ESKOM PARTICULAR SPECIFICATIONS

EPS.1 SPECIFICATION FOR EARTHMAT

1. SCOPE

This specification covers the requirements for the construction of the earth mat installation.

2. INTERPRETATIONS

The Earth mat shall be constructed in accordance with:

2.1 Supporting Specifications

a) The relevant drawings.

b) This specification.

3. MATERIALS

3.1 Copper Rod and Flat Strap

Annealed black copper rod and flat strap, as detailed in the Bills of Quantities and drawings shall be used. The Contractor shall purchase the required materials, transport it to the site and store it in clean, dry conditions.

4. CONTRACTOR'S EQUIPMENT

The Contractor shall ensure the provision of suitable construction equipment for the installation of the earth mat in compliance with the requirements of the specification.

5. CONSTRUCTION

5.1 Trenches

Trenches for earth mats shall be excavated as narrow as possible, but wide enough to permit laying of the earth mat and compaction of the full depth of backfill in compliance with the specification. Backfilling shall consist of suitable material free from roots, rubble or stones larger than 30mm.

5.2 Installation

Installation of the earth mat, jointing beneath the surface of the yard, earthing of steel structures, steel supports, buildings, security fencing and gates shall be done in a workmanlike manner by competent personnel, all according to the earthing standards as detailed on drawing no 0.54/393 (applicable sheets) and the project drawings.

5.3 As Built Drawings

On completion of the works the Contractor shall submit all information as may be required for the completion by the Project Manager of "as built" drawings of the earth mat installation, including the positions of all joints below ground level and details of all deviations from the routes shown on the drawings.

6. TOLERANCES

The exact position of the earth mat is not critical, but it shall be laid as close as possible to the routes shown in the drawings. The positions of the trenches shall be approved by the Supervisor before excavation commences.

7. TESTING

The Contractor will arrange for the earth mat to be tested electrically and to submit a report to Eskom for approval, and any part of the mat and connections found to be defective shall be repaired by the Contractor.

The tests shall consist of resistivity and continuity tests.

8. MEASUREMENT AND PAYMENT

The rates as scheduled in the Bill of Quantities shall cover the cost of all activities, transport, labour, materials and testing required for the provision of the relative item in accordance with the drawings and specification.

EPS.2 SPECIFICATION FOR STONE SURFACING OF YARD

1. SCOPE

This specification covers the requirements for the stone surfacing of the yard.

2. INTERPRETATIONS

2.1 Supporting Specifications

The stone surfacing shall be constructed in accordance with:

a) SABS 1083-1976. Table 7 single sized crushed stone for Roads.
See table on page 19

b) This specification

3. MATERIALS

3.1 Stone

Stone shall be clean, hard, durable and sound crushed stone of 26,5mm or 37,5 nominal size, approved by the Project Manager and details of the stone being offered shall be submitted timeously. Samples of the stone shall be submitted in good time to the Supervisor for approval and no stone, other than the samples, shall be delivered to the site before the Project Manager's written approval has been obtained.

3.2 Weedkiller

Weed killer shall be in accordance with the terms of clause 5.3.

4. CONTRACTOR'S EQUIPMENT

The Contractor shall ensure the provision of suitable construction equipment for the construction of the stone surfacing in compliance with the requirements of the specification.

5. CONSTRUCTION

5.1 Surface Preparation

After the completion of the earthworks and just before the application of the stone surfacing the Contractor shall clear the area of all vegetable growth and ensure that the underlying wearing course layer is compacted to 93% Mod AASHTO density.

5.2 Laying of Stone

The stone shall be spread over the compacted surface of the yard, levelled and lightly rolled to a finished thickness of 100 mm or as otherwise specified on the drawings.

5.3 Weed Killer

A granular or liquid weed killer suitable for the soil to be treated, the climate and the general site conditions shall be applied before or after the spreading of the stone surface. Choice and application of the weed killer to be used shall be carried out only by a pest control operator with a current registration certificate covering the field of weed control, issued in terms of Government Notice R1 449 dated 1 July 1983.

The application of weed killer shall be guaranteed by the Contractor to provide a 95% effective control of growth of all types of vegetation for a period of 2 years from the date of application. Any growth, in excess of 5% of the area treated, which occurs within the guarantee period shall be removed and re-treated at the Contractor's expense.

The Contractor shall exercise due care while applying the weed killer to ensure that vegetation, animals or persons on areas adjoining the site are not affected by movement of the weed killer through wind, rain or

transport by water. He shall be responsible for any claim which may be made by adjoining property owners for damages resulting from his activities.

6. TOLERANCES

The average finished thickness of the stone layer shall be at least 100 mm or as otherwise specified on the drawings and nowhere shall the finished thickness be less than 15 mm less than the specified average finished thickness.

7. TESTING

Not applicable.

8. MEASUREMENT AND PAYMENT

The rates as scheduled in the Bill of Quantities shall cover the cost of all activities, labour, materials and testing required for the provision of the relative item in accordance with the drawings and specification.

SABS 1083-1976

TABLE 7- SINGLE-SIZED CRUSHED STONE FOR ROADS

1	2	3	4	5	6	7	8	9	
Property		Requirements							
		Nominal size of stone, mm							
Grading, %(m/m) of material passing Sieves of nominal aperture size, mm		53,0	**37,5**	**26,5**	19,0	13,2	9,5	6,7	4,75
	75,0 100								
53.0 85-100 **100**									
	37,5 0-30 **8**	**-100**	**100**						
	26,5 0-5 **(**	**-30**	**85-100**	100					
	19,0 -	**0-5**	**0-30**	85-100	100				
	16,0	-	-	-	100				
	13,2		**0-5**	0-30	85-100	100			
	9,5			0-5	0-30	85-100	100		
	6,7			-	0-5	0-30	85-100	100	
	4,75				-	0-5	0-30	85-100	
	3,35					-	0-5	0-30	
	2,36						-	0-5	

EPS.3 Variations and Additions to Standard Specifications

SABS 1200 A (1986) GENERAL

VA-A 2 INTERPRETATIONS

VA-A 2.8 ITEMS IN SCHEDULE OF QUANTITIES

VA-A 2.8.1 Principle

Add "plus overheads" after "Contractors profit" in the second line.

VA-A 2.8.2 Preliminary and General Section

Delete "general" between "all" and "risks" in the fourth line, and "on which the tender is based" in the fifth line and replace with "which form the contract".

VA-A 3 MATERIALS

VA-A 3.1 QUALITY

Add:

The Contractor shall at his own expense supply and provide all the Constructional Plant, Temporary Works, materials for both temporary and permanent works, labour and supervision, transport to or from the site and in and about the Works and everything required for the construction, completion and maintenance of the Works. The Contractor shall ensure that all the afore going constituent parts of the Works are to the standard and quality elsewhere specified in these documents or where not specified to the highest quality available and shall also ensure they are suitable for purpose intended by the Employer.

The Contractor shall be responsible for the strength and quality of all materials used and workmanship employed and for the stability of the permanent works and the temporary works and the fact that the Employer has not objected during the construction period to any materials and/or workmanship employed by the Contractor and even though such materials and/or workmanship has been inspected by the Supervisor shall not relieve the Contractor of such responsibility.

VA-A 5 CONSTRUCTION

VA-A 5.1 SURVEY

Setting out of the Works

Add:

Survey reference marks and bench marks supplied by Eskom shall be to a datum defined in writing and or on the drawings.

VA-A 5.2 WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS

The requirements for watching, barricading, lighting, etc. shall be as follows:

Every excavation, which is accessible to the public, including other contractor's or Eskom personnel, or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered shall be:

(a) protected by a barrier or fence consisting of not less than two ropes or wires stretched at heights of 600 mm and 1 200 mm between poles or standards, of strength adequate to safely contain pedestrians and as close to the excavation as is practicable; and

(b) provided with red warning lights or any other clearly visible boundary indicators at night or when visibility conditions are poor.

VA-A 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

Add:

Adequate prior notice in writing by Eskom of the existence of any services shall be deemed sufficient to make such services "known" to the Contractor.

VA-A 5.6 POLLUTION

Add:

A refuse control and removal system shall be implemented by the Contractor. All construction waste shall be collected and removed from site. Refuse may only be disposed of in recognised registered disposal sites.

VA-A 5.7 SAFETY

Delete this clause.

VA-A 5.8 GROUND AND ACCESS TO WORKS

VA-A 5.9 SITE TO BE LEFT CLEAR

At all times prior to the completion of the Works and including the period of maintenance the Contractor shall be solely responsible for maintaining the site in a clean, tidy and safe condition to the satisfaction of the Supervisor and is deemed to have made due allowance in the contract prices therefore. Eskom shall be entitled to instruct the Contractor at any time to remove any excess materials, debris, rubbish and the like from the site and the Contractor shall forthwith comply with such instructions and at no extra cost to the Employer.

On completion of the Permanent Works the Contractor shall, at his own expense, remove all surplus excavated materials, debris, unused materials, temporary erections and plant save that required for maintenance work which shall be removed, as aforesaid, on completion of the whole of the Works. However no means, appliances, guards or other things provided in presence of the Machinery and Occupational Safety Act or for securing the safety of persons may be removed if such removal constitutes a change to the safety of persons.

VA-A 5.10 DIMENSIONS

Dimensions on the Drawings are to be considered correct even if not drawn to scale. No dimensions shall be obtained by scaling.

VA-A 7 TESTING

Add new clause:

VA-A 7.5 CONTROL TESTS

The Contractor shall carry out, at his own cost, such tests as he considers necessary to satisfy himself that his work is sound. He shall also carry out such tests as have been specified and are included in the rates and submit the results to Eskom.

Eskom may order such additional tests as it considers necessary to prove compliance with the Specification. The cost of such additional tests shall be borne:

(a) by the Employer if the result of the additional test indicates that the Works or the part of it that was subjected to the tests comply with the applicable requirements, and

(b) by the Contractor if the results indicate that the Works or the said part of it do not so comply.

VA-A 8 MEASUREMENT AND PAYMENT

VA-A 8.2 PAYMENT

VA-A 8.2.1 FIXED AND VALUE RELATED ITEMS

pro-rata payment in terms of each progress certificate

VA-A 8.2.2 Time-related Items

Payment for time-related items will be affected as follows only after payment for the relevant fixed charge item if any has been made.

Subject to the provisions of SABS 1200 A clauses 8.2.3 and 8.2.4, payment of incremental amounts (calculated by the division of the remainder of the tendered sum by the number of months required to complete the site activities for which the relevant sum was tendered) will be authorised in each of the subsequent progress certificates until the sum tendered has been paid, provided that the Employer shall be entitled to amend the amount to be paid in respect of time-related items in the event of:

(a) extension of time being granted in accordance with the contract.

(b) adjustment to the time-related items in accordance with the terms of contract.

(c) delays caused by the Contractor for which no extension of time will be granted under the contract.

ADD NEW CLAUSES:

VA-A 8.9 RATES INCLUSIVE OF CONTRACTOR'S OBLIGATIONS, LIABILITIES AND RESPONSIBILITIES

The rates and prices contained in the Preliminary and General Section of the Bills of Quantities shall, together with the remainder of the Bills of Quantities, be deemed inclusive of all the Contractor's obligations, liabilities and responsibilities whether or not they are expressly described therein.

EPS 4 Specification for Fencing

1. SCOPE

This specification covers the requirements for the construction of 2,4 m security, 1,8 m safety and 1,2 m high boundary fencing.

2. INTERPRETATIONS

2.1 SUPPORTING SPECIFICATIONS.

The fencing shall be constructed in accordance with:

a) SABS 1200 DA Earthworks (Small Works)

b) SABS 1200 G Concrete (Structural) and the relevant variations and additions to these.

c) This specification

3. MATERIALS

3.1 FENCES FOR INLAND AND COASTAL AREAS

For fences installed in inland areas with average or mild corrosion conditions, the materials shall be:

a) posts, stays and extension arms shall be of the dimensions shown on the drawings and as follows:

(i) Galvanised hot rolled mild steel sections for security and safety fences.

(ii) Galvanised mild steel tubular sections for boundary fences.

b) Standards and Droppers

2,5 kg/m Y section steel standards and 0,56 kg/m ridgeback T section steel droppers protective coated with tar or bitumen for boundary fences.

c) Wire
Wire for fencing shall comply with SABS 675, 1373 and CKS 592 as relevant and shall be:

Straining Wire 4,0 mm dia galvanised MS

Barbed Wire - 2,24 mm dia galvanised HT campeon class A barbed wire for boundary fence and security fence overhangs

Rectangular Mesh -3,15 mm dia galvanised HT mesh 50 x 50 openings for security fences with stainless steel jointing clips.

Diamond mesh 2,50 mm x 64 galvanised MS

Barbed tape coils 760 mm dia coils of 2,5 mm galvanised wire with long blade profile galvanised barbs at 37,5 mm spacing.

d) Gates

Galvanised steel tube frame

e) Metal Fittings

Bolts, nuts, washers, turnbuckles, hinges, and similar metal fittings shall be of galvanised MS complying where relevant with SABS 135 and 1149.

3.2 GALVANISING

Galvanising of steel members and metal fittings shall comply with SABS ISO 1461 for general applications.

Galvanising of mild steel and high tensile wire shall comply with SABS 675

Galvanising of barbs on barbed tape shall comply with SABS 675.

3.3 HOLES

Holes in the steel members for fences shall not be punched or flame cut but shall be drilled (and burs removed) before the member is galvanised.

3.4 CONCRETE

Concrete for post foundations shall be grade 15 MPa/26 mm and for kerbs, grade 20 MPa/19 mm.

4. CONTRACTORS EQUIPMENT

The Contractor shall ensure the provision of suitable construction equipment for the erection of the fencing, gates and concrete kerb in compliance with the requirements of this specification.

5. CONSTRUCTION

5.1 General

Construction of the fence, gates and concrete kerb shall comply with the requirements given on the drawings and with the requirements of this specification.

5.2 Clearing Fence Line

Where the fence line has not already been cleared, it shall be cleared over a width of at least 1 m on each side of the centre line of the fence and surfacing irregularities shall be graded so that the fence will follow the general contour of the ground. The bottom of the fence shall be located a uniform distance above the ground line in accordance with the requirements shown on the drawings. All material removed shall be disposed of as specified in clause VA-D 5.2.2.3.

5.3 Installing Posts and Standards

The lengths of all posts above ground shall be such that the correct clearance between the lowest wire and the ground can be maintained.

Straining posts shall be erected at all ends and corners or bends in the line of the fence and at all junctions with other fences, provided that straining posts shall not be spaced further apart than the minimum distances shown on the drawings.

Spacing of intermediate posts, standards and droppers shall not be more than is indicated on the drawings, provided that the spacing of standards and intermediate posts between any two straining posts shall be uniform.
All posts and stays shall be set in dug holes of the dimensions shown on the drawings and provided with concrete bases. Holes shall be dug to the full specified depth, even in rock where blasting may be necessary to obtain the required depth.

Corner, tee-off, gate and straining posts shall be braced by stays bolted to the posts.

All posts shall be accurately aligned and set plumb. After posts have been set in concrete the concrete shall be cured for at least 7 days before the fence wire is attached to the posts at the spacing shown on the drawings.

5.4 Installing Fencing and Straining Wire

All fencing wire shall be attached to the posts as detailed on the drawings. The wire shall be carefully stretched and hung without sag, and with true alignment, care being exercised not to stretch the wire so tightly that it will break or that posts will be pulled up or destroyed.

The maximum force in fencing wire after it has been stretched between straining posts shall be 0,9 kN.

Splices in the straining wire will be permitted if made using a splice tool. The wire ends shall be carried past the splice tool for at least 75 mm and wrapped snugly around the other wire for at least 6 complete turns, the two separate wire ends being turned in opposite directions. The unused wire ends shall be cut close to leave a neat splice.

5.5 Installing Welded Mesh Sheets

Welded mesh sheets shall be stretched against the fence posts and properly tied to the straining wire by means of 2,5 mm nominal diameter binding wire or stainless steel clips at 250 mm centres, or closer to remove excessive bulges in the mesh. The mesh shall be taken continuously past the face of all immediate posts, intermediate straining posts and corner posts. At the straining posts and corner posts the mesh is to be clamped on either side of the post using 20 mm wide galvanised flat bars, bolted together with galvanised bolts and nuts and fastened to the post by means of a hook bolt, as detailed on the drawings. Small bulges formed in the mesh between these clamps are acceptable. Mesh with has been distorted prior to erection
e.g. egg shaped instead of circular coils will not be accepted.

The bottom 400 m of the welded mesh shall be dipped in a bitumen solution, and when erected the bottom 300 mm (min. 250 mm) shall be buried in an excavated trench and backfilled with a granular material and neatly levelled off to the Supervisor's satisfaction. The joining of the welded mesh sheets shall be as shown on standard drawing number 0.54/5499 sht 5. The screw threads on the stand-outs of all bolts, hook bolts and eye bolts to be turned over after erection to prevent the possible removal of the nuts.

5.6 Installing Diamond mesh or Wire Netting

Diamond mesh shall be stretched against the fence and properly tied to the fencing wire as detailed on the drawings. The diamond mesh shall be secured by tying wire at every third aperture along the straining wires and at every aperture at end and gate posts.

5.7 Installing Barbed Wire (Only if specified)

Single strand barbed wire to be fitted to the top of the posts shall be installed along the upper face of the single overhang of fence. The barbed wire shall be stretched as described in clause 5,4 and fixed to the immediate posts using 2,5 mm diameter binding wire.

5.8 Concrete Kerb (Only if specified)

Where scheduled a concrete kerb of nominal dimensions 75 mm wide x 300 mm deep of Grade 20 MPa concrete (or precast concrete kerb fig 5 to SABS 927-1969) shall be constructed along the security fence line, as detailed on the drawings.

5.9 Installing Gates

Gates shall be installed at the places indicated on the drawings or as instructed by the supervisor. The gates shall be hung on gate fittings in accordance with the details shown on the drawings. Gates shall be so erected as to swing in a horizontal plane at right angles to the gate posts, clear of the ground in all positions. Gates shall not be further than 40 mm from the gate post when closed, or as otherwise shown on the drawings.

5.10 Transport and Storage

The transporting, off-loading and storage on site of all materials shall be carried out with care so that no damage to steel, mesh, paint or galvanising will occur. Any damage shall be made good in a manner approved the Supervisor.

5.11 Earthing

The fence shall be earthed across gate openings and removable panels by means of a 40 mm wide x 3 mm thick copper earthing strap, as shown on Drawing No. 0.54/398 or as otherwise detailed on the drawings.

6. TOLERANCES

The completed fence shall be plumb, taut, true to line and ground contour, with all posts and stays firmly set.

Permissible Deviations shall be as follows:

a) The height of the lower fencing wire above the ground at posts and standards shall not vary from that shown on the drawings by more than 25 mm. Other fencing wires shall not vary by more than 10 mm from their prescribed relative vertical positions.

b) The maximum acceptable out of alignment of fence posts in any direction shall be 25 mm. The maximum acceptable out of plumb of fence posts in any direction shall be 20 mm.

c) The maximum acceptable distortion of mesh already erected shall not exceed $\pm$ 25 mm on each 4 m length.

d) Gates shall swing in a horizontal plane at right angles to the gate posts clear of the ground in all positions with a maximum ground clearance of 80 mm. Double leaf gates shall not have a gap of more than 40 mm between the two leaves when closed and all gates shall be not further from the gate posts when closed than the dimensions shown of the drawings.

7. TESTING

Testing shall be as specified in SABS 1200 G clause 7 and variations and additions or as called for by the Supervisor.

8. MEASUREMENT AND PAYMENT

8.1 GENERAL

Fences will be measured by length over the lengths laid, excluding gates which are scheduled separately. Corner and strain posts (including stays) and intermediate posts will be measured separately by number including excavation in earth.
Soft or hard rock encountered in the excavations will be separately measured and paid for.

Payment will be made in accordance with clause 8.2.

8.2 SCHEDULED ITEMS

8.2.1 Fencing Unit: m or km

Fences will be classified by type or detailed description. The rate shall cover all the costs associated with the erection of the fence in compliance with the specification, including supply and erection of the fencing complete as described, provision of the mesh footing trench and filling, and complying with precautions and tolerances.

8.2.2 Gates Unit: m or km

Gates will be classified by type and size or detailed description.

The rate shall cover all costs associated with the supply and erection of the gate in compliance with the specification including posts, excavation of post holes in earth, disposal, filling with concrete, excavation in earth for the earth strap, backfilling and provision and installation of the earth strap, complying with precautions and tolerances.

8.2.3 Extra-over for excavation in:

a) Soft rock Unit: m3
b) Hard rock Unit: m3

The rate shall cover all the costs additional to the cost of excavating in earth disposing of surplus material and backfilling, where required.

8.2.4 Testing Concrete

Concrete compressive strength Unit: No

The rate shall cover the cost of making and testing groups of three test cubes in accordance with SABS Test Methods 861 and 862.

6.4. Electrical & mechanical engineering works

Not applicable

6.5. Process control and IT works

Not applicable

6.6. Other [as required]

Not applicable

7. List of drawings

7.1. Drawings issued by the *Employer*

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

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

DRAWING TITLE	DRAWING NUMBER
275kV Yard Steelwork Pre 1990 Foundations Concrete and Reinforcement Details	0.54/4473 Rev 7
Level 1 Installation 2,3m High Security Wall With Non-Lethal Overhang Plan, Elevation and Details	0.54/5846 Rev 2
Level 1 Installation 2,3m High Security Wall With Non-Lethal Overhang Gate Details	0.54/5846 Rev 1
Level 1 Installation 2,3m High Security Wall With Non-Lethal Gate Post and Overhang Details	0.54/5846 Rev 0
Level 1 Installation 2,3m High Security Wall With Non-Lethal Overhang Drainage Details	0.54/5846 Rev 0
Leseding Existing T-Junction Upgrade Layout and Details	LES23P04-SE-D35 Rev 0
Leseding Access Road Repair Details and Layout	LES23P04-SE-D39 Rev 0
Leseding 132kV Extension Terrace Layout	LES23P04-SE-E38 Rev 0
BUILDING	
Leseding Upgrade Fibre Comms Sleeves Layout	LES23P04-SE-E51 Rev 0
Leseding Control Building Roof Plan, Sections Details	LES23P04-SE-E47 Rev 0
Leseding Substation Control Building General Refurbishment Plans & Schedules	LES23P04-SE-E50 Rev 0
DRAINAGE	
Leseding Drainage Layout	LES23P04-SE-D40 Rev 0
FOUNDATION	
TRFR Tertiary Busbar Pad Foundation Type 1	0.54/316 Rev 7
Label 1 Frame and Post support Foundation	0.54/401
132kV Isolator Support Foundation Details	0.54/465 Rev 8
HV Yard Plug Box Foundation	0.54/710 Rev 7
N.E.C. OR AUX TRFR Support 1500 High Foundation Details	0.54/2089 Rev 6
Junction Box and Dist. Board Foundation Details	0.54/3568 Rev 6
275kV Yard Steelwork Standard Foundations. Concrete and Reinforcement Details for PAD Type Foundations	0.54/3989 Rev 5
400kV Yard Steelwork Standard Foundations Concrete and Reinforcement Details for Pad Type Foundations	0.54/3996 Rev 10
Foundation for Stainless Steel Fire Barrier	0.54/4169 Rev 6
132kV Yard Steelwork Standard Foundations Concrete and Reinforcement Details for Pad Type Foundations	0.54/4316 Rev 5
Medium Equipment Support Pad Type Foundation Detail	0.54/4358 Rev 4
Large Equipment Support Pad Type Foundation Detail	0.54/4368 Rev 3
24m Light Mast Layout and Detail Of Foundation	0.54/4659 Rev 9
Junction Box Foundation Detail 1995 Onwards	0.54/4713 Rev 4
Junction Box – 7100 Type 5 – Foundation Details	0.54/4713 Rev 0
400kV Busbar Support Foundation	0.54/4726 Rev 8
Leseding Micropile Layout & Details Foundation	LES23P04-SE-D105 Rev 0
OIL DAM	
Transformer Oil Holding Dam Compartment wall Detail for Type 12 Dam	0.54/6084 Rev 1
Substation Transformer Fire Protection Oil Holding Dam Joints Position and Details	0.54/5664 Rev 1
Transformer Oil Holding Dam Details	0.54/3754 Rev 9
SAFETY SECURITY FENCE	
Leseding Upgrade Security Fence Layout and Details	LES23P04-SE-D14 Rev 0
Security Fence Substation Access Gates Single 7m Gate with no Middle Post Layout, Sections and Details	0.54/10230 Rev 1
Security Fence 1,0m Security Gate Steelwork Arrangements and Details	0.54/10230 Rev 0
Security Fence 8,6m Non-Lethal Sliding Gate – Middle Steelwork details	0.54/10230 Rev 1
Security Fence 8,6m Non-Lethal Sliding Gate – Middle Steelwork details	0.54/10230 Sheet3Rev 1
Security Fence 8,6m Non-Lethal Sliding Gate – Middle Steelwork details	0.54/10230 Sheet2Rev 1
Security Fence three Types of security Sliding Gates General Arrangement	0.54/10230 Sheet1Rev1
400kV Isolator & Earth Switch Crossbeam 6500 Phase Spacing	0.54/10108 Sheet0Rev 1
High Security Mesh Fencing 2400 High – Outer Fence with Steel Posts elevation	0.54/8725 Sheet2Rev0
High Security Mesh Fencing 2400 High – Outer Fence with steel Posts Details	0.54/8725 Sheet1Rev2
Level 1 Installation 2,3m High Security Wall with Non-Lethal Overhang Drainage details	0.54/5846 Sheet4Rev0
Level 1 Installation 2,3m High Security Wall with Non-Lethal Overhang Gate Post and Overhang details	0.54/5846 Sheet3Rev0
Level 1 Installation 2,3m High Security Wall with Non-Lethal Overhang Gate details	0.54/5846 Sheet2Rev1

Level 1 Installation 2,3m High Security Wall with Non-Lethal Overhang Plan elevation and details	0.54/5846 Sheet1Rev2
Level 3 Installation 2,4m High Security Fence with Overhang Brackets Layout and details	0.54/5633 Sht7/7Rev4
Level 3 Installation 2,4m High Security Fence with Overhang Access Gate, Post, Wiring Protection detail	0.54/5633 Sht6/7Rev0
Level 3 Installation 2,4m High Security Fence with Overhang Weldmesh Termination and Fixing detail	0.54/5633 Sht5/7Rev0
Level 3 Installation 2,4m High Security Fence with Overhang Posts Concrete Bases and Gate Keep detail	0.54/5633 Sht4/7Rev0
Level 3 Installation 2,4m High Security Fence with Overhang Posts and Struts detail	0.54/5633 Sht3/7Rev2
Level 3 Installation 2,4m High Security Fence with Overhang Access Gate Posts Plan, elevations and details	0.54/5633 Sht2/7Rev1
Level 3 Installation 2,4m High Security Fence with Overhang Access Gate Plan, elevations and details	0.54/5633 Sht1/7Rev1
HV Yard Safety Fence with Steel Post Arrangement Gate Hinge Details	0.54/4963 Sht4Rev1
HV Yard Safety Fence with Steel Post Arrangement Posts Details	0.54/4963 Sht3Rev1
HV Yard Safety Fence with Steel Posts Arrangement Gate Details	0.54/4963 Sht2Rev0
HV Yard Safety Fence with Steel Posts Arrangement Foundation Details	0.54/4963 Sht1Rev1
Boundary Fence 1550 High Fence Layout and Details	0.54/398 Sht2/2 Rev0
STEELWORK	
Medium Equipment Support 2500mm High	0.54/302 sht0 Rev3
Medium Equipment Support 3000mm High	0.54/303 Rev2
Medium Equipment Support 3500mm High	0.54/304 Rev2
Small/Medium Equipment Support Cap M1 Adjustable Fixing Centres	054/306 Rev 6
Medium Equipment Support Cap 'M2' Adjustable Fixing Centres	0.54/307 Sht0 Rev5
Large Equipment Support	0.54/309 Rev2
Large Equipment Support Cap'L2' Adjustable Fixing Centres	0.54/311 Rev1
Large Foundation to Small or Medium Support, Or Medium Foundation to Large Support Adaptor	0.54/314 Rev 2
Transformer Tertiary Busbar structure	0.54/315 Rev6
132kV Yard Steelwork (Bolted) Beam and Column ARRGT	0.54/336 Rev4
132kV Yard Steelwork…Beam and Column Details	0.54/337 Rev 6
Double Label 1 Frame and Post Support	0.54/400 Sht 2 Rev0
Electrical Equipment Labels J Mounting Bracket detail	0.54/403 Rev3
Line Matching unit bracket Medium equipment support	0.54/673 Rev 4
Medium Equip Support CAP M5 Adjustable Fixing Centres	0.54/779 Rev6
Busbar Label 1 Frame Detail	0.54/1790 Sht0 Rev 3
Electrical Equipment Labels L Mounting Bracket Detail	0.54/1794 Sht0 Rev3
NEC or AUX TRFR Support 1500 High	0.54/2088 Sht0 Rev2
400kV Yard Steelwork assembly and Details of Stringer Strain Column – Type NC1 and NC2	0.54/3531 Rev3
400kV and Details of Stringer strain beam with offsets - Type NB2	0.54/3533 Rev3
400kV yard Steelwork assembly and details of stringer suspension column type NC9	0.54/3538 Rev 2
400kV yard steelwork assembly and details of earthwire peak for suspension columns	0.54/3541 Rev 1
6000 High Support for Stainless Steel Fire Barrier	0.54/4160 Rev 7
132kV Tubular Busbar Support Steelwork	0.54/4320 Rev 6
Large Equipment Support Cap For ABB Type DLTC Line Trap	0.54/4337 Rev 1
400kV (24M) Light Mast Layout and detail of Mast, Cat Ladder and Landing	0.54/4658 Rev 3
Medium Equipment Support Cap Adjustable Fixing Centres	0.54/4722 Rev 6
765kV, 400kV, 275kV & 132kV Tubular Busbar Label Support Frame Bracket	0.54/5601 Rev 3
400kV Transformers Stainless Steel Fire Barrier Layout and Details	0.54/5865 Rev 1
400kV Yard Steelwork Floodlight / Earthwire Steel Platform Steel Arrangement and details	0.54/6106 Sht1 Rev 3
400kV Yard Steelwork Floodlight / Earthwire Steel Platform Steel Arrangement and details	0.54/6106 Sht2 Rev 5
400kV Yard Steelwork Floodlight / Earthwire Steel Platform Steel Arrangement and details	0.54/6106 Sht3 Rev 0
Water Tank Support Capacity 4500LT Layout and Details of Foundation and support Steelwork	0.54/6140 Rev 0
Top Cap For Surge Arresters Use with existing Top CAP	0.54/6326 Rev 2
400kV Busbar Support – 8940	0.54/6434 Rev0
Medium Equipment Support Surge Arrester EarthTrap	0.54/6603 Sht0 Rev0
400kV Isolator & Earth Switch Crossbeam 6500 Phase Spacing	0.54/10108 Sht0 Rev1
400kV Isolator & Earth Switch Crossbeam 5500 Phase Spacing	0.54/10112 Sht0 Rev 1
88kV & 132kV Isolator Foundation Modification details (0.54/483 Modified to 0.54/8829 Sht 5A-0)	0.54/10113 Sht0 Rev0
Trench Line Trap – Large Equipment Support Cap (1389 PCD)	0.54/10231 Sht0 Rev 1
TRANSFORMER PLINTH	
Leseding 500MVA 400/132/22kV Transformer 3 Construction and Details	Les23P04-SE-D41 Sht 1 Rev0
Leseding 500MVA 400/132/22kV Transformer 1 Plinth Layout and Detail	Les23P04-SE-D41 Sht 2 Rev0
HV YARD CIVIL WORKS	
HV Yard Civil Works standard Details	0.54/390 Sht0
HV Yard Civil Works standard Details	0.54/390 Sht1c
HV Yard Civil Works standard Details	0.54/390 Sht1
HV Yard Civil Works standard Details	0.54/390 Sht1A Rev 0
HV Yard Civil Works standard Details	0.54/390 Sht1b Rev 4
HV Yard Civil Works standard Details	0.54/390 Sht1c Rev 0
HV Yard Civil Works standard Details	0.54/390 Sht2 Rev 2
HV Yard Civil Works standard Details	0.54/390 Sht2 Rev 2
HV Yard Civil Works standard Details	0.54/390 Sht2A Rev 0

HV Yard Civil Works standard Details	0.54/390 Sht3 Rev 3
HV Yard Civil Works standard Details	0.54/390 Sht4 Rev 2
HV Yard Civil Works standard Details	0.54/390 Sht5 Rev 4
HV Yard Civil Works standard Details	0.54/390 Sht15 Rev 5
HV Yard Civil Works standard Details	0.54/390 Sht6 Rev 4
HV Yard Civil Works standard Details	0.54/390 Sht7 Rev 3
HV Yard Civil Works standard Details	0.54/390 Sht8 Rev 4
HV Yard Civil Works standard Details	0.54/390 Sht10 Rev 2
HV Yard Civil Works standard Details	0.54/390 Sht11 Rev 3
HV Yard Civil Works standard Details	0.54/390 Sht12A Rev 4
HV Yard Civil Works standard Details	0.54/390 Sht12B Rev 2
HV Yard Civil Works standard Details	0.54/390 Sht12c Rev 1
HV Yard Civil Works standard Details	0.54/390 Sht2 Rev 2
HV Yard Civil Works standard Details	0.54/390 Sht13 Rev 3
HV Yard Civil Works standard Details	0.54/390 Sht13c Rev 0
HV Yard Civil Works standard Details	0.54/390 Sht14 Rev 2
HV Yard Civil Works standard Details	0.54/390 Sht2 Rev 2
HV Yard Civil Works standard Details	0.54/390 Sht15 Rev 5
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PART 4: SITE INFORMATION

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	This cover page	1
C4	Site Information	1
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PART 4: SITE INFORMATION

Core clause 11.2(16) states

"Site Information is information which

- describes the Site and its surroundings and
- is in the documents which the Contract Data states it is in."

In Contract Data, reference has been made to this Part 4 of the contract for the location of Site Information.

1. General description

Leseding Substation is located in the Limpopo Province, in the vicinity of Ga-Mashabela and Ga-Mongatane. The location coordinates are (-24.439309, 30.017223).

All persons requiring access to site shall notify the Project Manager two (2) weeks before such access is required. The applicant shall provide proof of identification to the Project Manager with the site access application. A permit shall be issued and all contractors/visitors are required to visibly retain the permit at all times. All contractors must attend safety training and familiarization which will be provided by the Employers safety officer before commencement of any work on site. All contractors working at Watershed substation need to be security vetted

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

The works will be done around Leseding Substation. Furthermore, work will be done in the access road (from the main provincial road to the Leseding Substation, around the perimeter fence of the Leseding substation. Work will also be done inside the Substation at various sites.

3. Subsoil information

The general soil condition is turf/clay.

4. Hidden services

There are hidden services on site. Before any work can commence, it will be the responsibility of the contractor to ascertain from the "Engineering Assistant" the position of any existing services on site. Once these are indicated to the contractor they shall be deemed as **"known"**. Any costs incurred for the repairs to any "**known"** services shall be for the contractor's account.

In the event that any services are found especially drainage pipes or cables, this must be reported to the Site Supervisor and Engineering Assistant immediately.

5. Other reports and publicly available information

Geotechnical Surveys has been issued with tender enquiry for contractor may need to be able to decide his method of working and programme.