



NEC3 Term Service Contract (TSC3)

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

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

for **Provision of Maintenance and Repairs the Faults on the 6.6kV to 33kV medium-voltage (MV) XLPE and PILC-insulated Cables by Terminating, Laying and Jointing in Gauteng Cluster, for a period of 5 years, on an “as and when” required basis**

Contents:	No of pages
Part C1 Agreements & Contract Data	[•]
Part C2 Pricing Data	[•]
Part C3 Scope of Work	[•]

CONTRACT No. [Insert at award stage]

PART C1: AGREEMENTS & CONTRACT DATA

Contents:	No of pages
C1.1 Form of Offer and Acceptance	[•]
[to be inserted from Returnable Documents at award stage]	
C1.2a Contract Data provided by the <i>Employer</i>	[•]
C1.2b Contract Data provided by the <i>Contractor</i>	[•]
[to be inserted from Returnable Documents at award stage]	
C1.3 Proforma Guarantees	[•]

C1.1 Form of Offer & Acceptance

Offer

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

Provision of Maintenance and Repairs the Faults on the 6.6kV to 33kV medium-voltage (MV) XLPE and PILC-insulated Cables by Terminating, Laying and Jointing in Gauteng Cluster, for a period of 5 years, on an "as and when" required basis

Title of the Contract

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

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

Options A	The offered total of the Prices exclusive of VAT is	Rates Only
	Value Added Tax @ 15% is	Rates Only
	The offered total of the amount due inclusive of VAT is ¹	Rates Only
	Rates Only Contract Total Sum of which will be the Total of Task Order Issued	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s)

Name(s)

Capacity

**For the
tenderer:**

(Insert name and address of organisation)

Name &
signature of
witness

Date

Tenderer's CIDB registration number:

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: Service 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 and signed original copy of this document, including the Schedule of Deviations (if any).

Signature(s)

Name(s)

Capacity

**for the
Employer**

Eskom Holdings Soc Ltd
2 Maxwell Drive
Sunninghill, Sandton
Johannesburg

(Insert name and address of organisation)

Name &
signature of
witness

Date

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

Provision of Maintenance and Repairs the Faults on the 6.6kV to 33kV medium-voltage (MV) XLPE and PILC-insulated Cables by Terminating, Laying and Jointing in Gauteng Cluster, for a period of 5 years, on an “as and when” required basis

CONTRACT NUMBER _____

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

Note:

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

No.	Subject	Details
1	[•]	[•]
2	[•]	[•]
3	[•]	[•]
4	[•]	[•]
5	[•]	[•]
6	[•]	[•]
7	[•]	[•]

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

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

For the tenderer:

For the Employer

Signature

Name

Capacity

On behalf
of

(Insert name and address of organisation)

(Insert name and address of organisation)

Eskom Holdings Soc Ltd
2 Maxwell Drive
Sunninghill, Sandton
Johannesburg

Name &
signature
of witness

Date

C1.2 TSC3 Contract Data

Part one - Data provided by the *Employer*

[Instructions to the contract compiler: (delete these two notes in the final draft of a contract)]

1. Please read the relevant clauses in the conditions of contract before you enter data. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data.
2. Some TSC3 options are always selected by Eskom Holdings SOC Ltd. The remaining TSC3 options are identified by shading in the left hand column. In the event that the option is not required select and delete the whole row. Where the following symbol is used “[•]” - data is required to be inserted relevant to the specific option selected.]

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

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option:	
		A: Priced contract with price list
	dispute resolution Option	W1: Dispute resolution procedure
	and secondary Options	
		X1: Price adjustment for inflation
		X2: Changes in the law
		X18: Limitation of liability
		X19: Task Order
		Z: <i>Additional conditions of contract</i>
	of the NEC3 Term Service Contract April 2013 ² (TSC3)	
10.1	The <i>Employer</i> is (name):	Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa
	Address	Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg
	Tel No.	[•]
	Fax No.	[•]
10.1	The <i>Service Manager</i> is (name):	Mphathutshedzeni Mudau

² Available from Engineering Contract Strategies Tel 011 803 3008 Fax 086 539 1902 www.ecs.co.za

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CONTRACT NO. _____

	Address	[●]
	Tel	+27 21 915 1244
	Fax	[●]
	e-mail	[●]
11.2(2)	The Affected Property is	Medium Voltage (6.6 kV to 33 kV) - Oil impregnated paper and XLPE cables, within Eskom Distribution Gauteng Cluster
11.2(13)	The <i>service</i> is	Maintenance and Repairs of Medium Voltage (6.6 kV to 33 kV) - Oil impregnated paper and XLPE cables
11.2(14)	The following matters will be included in the Risk Register	SHEQ related matters, Time and Cost
11.2(15)	The Service Information is in	Part 3: Scope of Work and all documents and drawings to which it makes reference.
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa
13.1	The <i>language of this contract</i> is	English
13.3	The <i>period for reply</i> is	1 week
2	The Contractor's main responsibilities	Data required by this section of the core clauses is also provided by the <i>Contractor</i> in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data
21.1	The <i>Contractor</i> submits a first plan for acceptance within	As per the Task Order requirements
3	Time	
30.1	The <i>starting date</i> is.	TBC
30.1	The <i>service period</i> is	36 months
4	Testing and defects	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
5	Payment	
50.1	The <i>assessment interval</i> is	within 5 days of Task Order Completion
51.1	The <i>currency of this contract</i> is the	South African Rand
51.2	The period within which payments are made is	4 Weeks upon submission of a tax compliant invoice to Eskom Finance Shared Services inclusive of a goods receipt number
51.4	The <i>interest rate</i> is	the publicly quoted prime rate of interest

(calculated on a 365 day year) charged by 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

6	Compensation events	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
7	Use of Equipment Plant and Materials	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 <i>Employer's</i> risks	1. 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	
A	Priced contract with price list	
20.5	The <i>Contractor</i> prepares forecasts of the final total of the Prices for the whole of the <i>service</i> at intervals no longer than	[•] weeks.
11	Data for Option W1	
W1.1	The <i>Adjudicator</i>	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	[•]
	Tel No.	[•]
	Fax No.	[•]
	e-mail	[•]
W1.2(3)	The <i>Adjudicator nominating body</i> is:	the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the Institution of Civil Engineers (London) (see www.ice-sa.org.za) or its successor body.

W1.4(2)	The <i>tribunal</i> is:	arbitration
W1.4(5)	The <i>arbitration procedure</i> 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	South Africa, Sandton
	The person or organisation who will choose an arbitrator	
	- if the Parties cannot agree a choice or	the Chairman for the time being or his nominee
	- if the arbitration procedure does not state who selects an arbitrator, is	of the Association of Arbitrators (Southern Africa) or its successor body.

12 Data for secondary Option clauses

X1	Price adjustment for inflation																						
X1.1	The <i>base date</i> for indices is	One month before tendering close																					
	The proportions used to calculate the Price Adjustment Factor are:	<table> <tr> <td>proportion</td><td>linked to index for</td><td>Index prepared by</td></tr> <tr> <td>85%</td><td>Labour-Table C-3</td><td>SEIFSA</td></tr> <tr> <td>15%</td><td>non-adjustable</td><td></td></tr> <tr> <td>100%</td><td></td><td></td></tr> <tr> <td>85%</td><td>Transport-Table L-2(A)</td><td>SEIFSA</td></tr> <tr> <td>15%</td><td>non-adjustable</td><td></td></tr> <tr> <td>100%</td><td></td><td></td></tr> </table>	proportion	linked to index for	Index prepared by	85%	Labour-Table C-3	SEIFSA	15%	non-adjustable		100%			85%	Transport-Table L-2(A)	SEIFSA	15%	non-adjustable		100%		
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15%	non-adjustable																						
100%																							
85%	Transport-Table L-2(A)	SEIFSA																					
15%	non-adjustable																						
100%																							
X2	Changes in the law	There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.																					
X18	Limitation of liability																						
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to	The total sum of all task orders issued																					
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to	The deductibles listed on Eskom ACAR policy																					
X18.3	The <i>Contractor's</i> liability for Defects due to his design of an item of Equipment is limited	The greater of																					

	to	<ul style="list-style-type: none"> the total of the Prices at the Contract Date and the amounts excluded and unrecoverable from the <i>Employer's</i> insurance (other than the resulting physical damage to the <i>Employer's</i> property which is not excluded) plus the applicable deductibles
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> , for all matters arising under or in connection with this contract, other than the excluded matters, is limited to	<p>the total of the Prices other than for the additional excluded matters.</p> <p>The <i>Contractor's</i> total liability for the additional excluded matters is not limited.</p> <p>The additional excluded matters are amounts for which the <i>Contractor</i> is liable under this contract for</p> <ul style="list-style-type: none"> Defects due to his design, plan and specification, Defects due to manufacture and fabrication outside the Affected Property, loss of or damage to property (other than the <i>Employer's</i> property, Plant and Materials), death of or injury to a person and infringement of an intellectual property right.
X18.5	The <i>end of liability date</i> is	12 months after the end of the <i>service period</i> .
X19	Task Order	
X19.5	The <i>Contractor</i> submits a Task Order programme to the <i>Service Manager</i> within	5 days of receiving the Task Order
Z	The additional conditions of contract are	Z1 to Z14 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 *Service 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 *Service Manager* within thirty days of the notification or as otherwise instructed by the *Service 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 Service.
- 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 P4 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 *Service 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 Affected Property or any portion thereof, in the course of Providing the Service and after the end of the *service period*, requires the prior written consent of the *Service 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 *Service Manager* 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 *service*. 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 Affected Property;
 - 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 the *service*; and
 - undertakes, in and about the execution of the *service*, 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 *service*, 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 *Service 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 Service Information, showing the amount due for payment equal to that stated in the payment certificate.
- Z7.2 If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.
- Z7.3 The *Contractor* (if registered in South Africa in terms of the companies Act) is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer's* VAT number 4740101508 on each invoice he submits for payment.

Z8 Notifying compensation events

- Z8.1 Delete the last paragraph of core clause 61.3 and replace with:

If the *Contractor* does not notify a compensation event within eight weeks of becoming aware of the event, he is not entitled to a change in the Prices.

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 82.1 is provided for in 60.1(12) and the *Employer's* liability under the indemnity is limited to compensation as provided for in core clause 63 and X19.11 if Option X19 Task Order applies to this contract.

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 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 <i>Contractor</i> 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 <i>Contractor</i> , or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractors 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.

Z11.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.

Z11.2 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.

Z11.3 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.

Z11.4 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.

Z12 Insurance

Z 12 .1 Replace core clause 83 with the following:

Insurance cover 83

- 83.1 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.
- 83.2 The *Contractor* provides the insurances stated in the Insurance Table A 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 minimum limit of indemnity
Loss of or damage caused by the <i>Contractor</i> to the <i>Employer's</i> property	The replacement cost where not covered by the <i>Employer's</i> insurance. The <i>Employer's</i> policy deductible as at Contract Date, where covered by the <i>Employer's</i> insurance.
Loss of or damage to Plant and Materials	The replacement cost where not covered by the <i>Employer's</i> insurance. The <i>Employer's</i> policy deductible as at Contract Date, where covered by the <i>Employer's</i> insurance.
Loss of or damage to Equipment	The replacement cost where not covered by the <i>Employer's</i> insurance. The <i>Employer's</i> policy deductible as at Contract Date, where covered by the <i>Employer's</i> insurance.
The <i>Contractor's</i> liability for loss of or damage to property (except the <i>Employer's</i> property, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) arising from or in connection with the <i>Contractor's</i> Providing the Service	<u>Loss of or damage to property</u> The replacement cost <u>Bodily injury to or death of a person</u> The amount required by the applicable law.
Liability for death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract	The amount required by the applicable law

Z 12.2 Replace core clause 86 with the following:

**Insurance
by the
Employer**

86

86.1 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 limit 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

Z13 Nuclear Liability

- Z13.1 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.
- Z13.2 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*.
- Z13.3 Subject to clause Z13.4 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*.
- Z13.4 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.
- Z13.5 The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.

Z14 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 <i>Employer's</i> 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.

Z14.1 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.

Z14.2 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 Z14.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.

Z14.3 The *Employer* manages asbestos and ACM according to the Standard.

Z14.4 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.

- Z14.5 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.
- Z14.6 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.
- Z14.7 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*

[Instructions to the contract compiler: (delete this notes before issue to tenderers with an enquiry)

Whenever a cell is shaded in the left hand column it denotes this data is optional and would be required in relation to the option selected. In the event that the option is not required select and delete the whole row.]

Notes to a tendering contractor:

1. Please read both the both the NEC3 Term Service Contract April 2013 and the relevant parts of its Guidance Notes (TSC3-GN)³ in order to understand the implications of this Data which the tenderer is required to complete.
2. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data.
3. Where a form field like this [] appears, data is required to be inserted relevant to the option selected. Click on the form field **once** and type in the data. Otherwise complete by hand and in ink.

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

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name): Address Tel No. Fax No.	
11.2(8)	The <i>direct fee percentage</i> is The <i>subcontracted fee percentage</i> is	% %
11.2(14)	The following matters will be included in the Risk Register	
11.2(15)	The Service Information for the <i>Contractor's</i> plan is in:	
21.1	The plan identified in the Contract Data is contained in:	
24.1	The key people are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job	

³ Available from Engineering Contract Strategies Tel 011 803 3008 Fax 086 5391902 or www.ecs.co.za

Provision of Maintenance and Repairs the Faults on the 6.6kV to 33kV medium-voltage (MV) XLPE and PILC-insulated Cables by Terminating, Laying and Jointing in Gauteng Cluster, for a period of 5 years, on an “as and when” required basis

CONTRACT NUMBER _____

Responsibilities:

Qualifications:

Experience:

CV's (and further key person's data including CVs) are in _____.

A	Priced contract with price list	
11.2(12)	The <i>price list</i> is in _____	
11.2(19)	The tendered total of the Prices is	R _____

Provision of Maintenance and Repairs the Faults on the 6.6kV to 33kV medium-voltage (MV) XLPE and PILC-insulated Cables by Terminating, Laying and Jointing in Gauteng Cluster, for a period of 5 years, on an “as and when” required basis

PART 2: PRICING DATA
TSC3 Option A

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option A	2
C2.2	The <i>price list</i>	[•]

C2.1 Pricing assumptions: Option A

How work is priced and assessed for payment

Clause 11 in NEC3 Term Service Contract (TSC3) core clauses and Option A states:

Identified and defined terms	11	
	11.2	(12) The Price List is the <i>price list</i> unless later changed in accordance with this contract.
		(17) The Price for Services Provided to Date is the total of <ul style="list-style-type: none">• the Price for each lump sum item in the Price List which the <i>Contractor</i> has completed and• where a quantity is stated for an item in the Price List, an amount calculated by multiplying the quantity which the <i>Contractor</i> has completed by the rate.
		(19) The Prices are the amounts stated in the Price column of the Price List. Where a quantity is stated for an item in the Price List, the Price is calculated by multiplying the quantity by the rate.

This confirms that Option A is a priced contract where the Prices are derived from a list of items of service which can be priced as lump sums or as expected quantities of service multiplied by a rate or a mix of both.

Function of the Price List

Clause 54.1 in Option A states: "Information in the Price List is not Service Information". This confirms that instructions to do work or how it is to be done are not included in the Price List but in the Service Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Service in accordance with the Service Information". Hence the *Contractor* does **not** Provide the Service in accordance with the Price List. The Price List is only a pricing document.

Link to the *Contractor's* plan

Clause 21.4 states "The *Contractor* provides information which shows how each item description on the Price List relates to the operations on each plan which he submits for acceptance". Hence when compiling the *price list*, the tendering contractor needs to develop his first clause 21.2 plan in such a way that operations shown on it can be priced in the *price list* and result in a satisfactory cash flow in terms of clause 11.2(17).

Preparing the *price list*

Before preparing the *price list*, both the *Employer* and tendering contractors should read the TSC3 Guidance Notes pages 14 and 15. In an Option A contract, either Party may have entered items into the *price list* either as a process of offer and acceptance (tendering) or by negotiation depending on the nature of the *service* to be provided. Alternatively the *Employer*, in his Instructions to Tenderers or in a Tender Schedule, may have listed some items that he requires the *Contractor* to include in the *price list* to be prepared and priced by him.

It is assumed that in preparing or finalising the *price list* the *Contractor*:

- Has taken account of the guidance given in the TSC3 Guidance Notes relevant to Option A;
- Understands the function of the Price List and how work is priced and paid for;
- Is aware of the need to link operations shown in his plan to items shown in the Price List;
- Has listed and priced items in the *price list* which are inclusive of everything necessary and incidental to Providing the Service in accordance with the Service Information, as it was at the time of tender, as well as correct any Defects not caused by an *Employer's* risk;
- Has priced work he decides not to show as a separate item within the Prices or rates of other listed items in order to fulfil the obligation to complete the *service* for the tendered total of the Prices.
- Understands there is no adjustment to items priced as lump sums if the amount, or quantity, of work within that item later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the (lump sum) Prices is as a result of a compensation event.

Format of the *price list*

(From the example given in an Appendix within the TSC3 Guidance Notes)

Entries in the first four columns in the *price list* in section C2.2 are made either by the *Employer* or the tendering contractor.

If the *Contractor* is to be paid an amount for the item which is not adjusted if the quantity of work in the item changes, the tendering contractor enters the amount in the Price column only, the Unit, Expected Quantity and Rate columns being left blank.

If the *Contractor* is to be paid an amount for an item of work which is the rate for the work multiplied by the quantity completed, the tendering contractor enters the rate which is then multiplied by the Expected Quantity to produce the Price, which is also entered.

If the *Contractor* is to be paid a Price for an item proportional to the length of time for which a service is provided, a unit of time is stated in the Unit column and the expected length of time (as a quantity of the stated units of time) is stated in the Expected Quantity column.

C2.2 the *price list*

Bill of Activities					
Item	Reference: Drawing / Standard	Description	Unit	Material Rate	Labour Rate
Civil Contractor : P&Gs and Pre-construction related activities.					
1.1	n/a	Supply and install during construction and remove after construction, danger labels, Water filled plastic barricading and steel guard rails along the cable route length and joint bays as needed. – Signs must be clearly visible even in poor visibility conditions. – (Use warning illuminants where possible.)	m		
1.2	n/a	Supply and install during construction and remove after construction, danger labels, concrete barricading and steel guard rails along the cable route length and joint bays. – Signs must be clearly visible even in poor visibility conditions. – (Use warning illuminants where possible.)	m		
1.3	n/a	Supply and Install steel trench covers / plates during construction, and remove after construction, to ensure that there is access to properties and pedestrian crossings (where needed) while work is performed on the MV cable along the route length.	m		
1.4	n/a	Appoint an independent and professional third party to perform Traffic control studies and report back with a Traffic control plan, and submit a copy to Eskom on a digital media. - Prior approval required.	Cost plus fee		
1.5	n/a	Civil Engineering - Prior approval required.	Cost plus fee		
1.6	n/a	Supply traffic control staff and equipment throughout the construction as required. - Prior approval required.	Per day		

Total					
2.1	<u>D-DT-0895 Sheet 7 and SANS 677</u>	Determine depth of river and construct a start and end shaft / pit for pipe jacking (Cost to include both excavations). Pipes to be jacked a minimum of 2m below the base of the river bed. (Pipe jack pit / shaft to be done in accordance with National and Eskom standards and applicable legislation.) Costs also to include rock blasting if required, and the removal, transportation and dumping (in accordance with the Maintenance Management plan / EMP) of water from the pit /shaft and installed concrete pipe, if required. Costs also to include backfilling and reinstatement of area to its original state after construction.	2 x pits / shafts		
2.2	<u>D-DT-0895 Sheet 7 and SANS 677</u>	Pipe jack concrete pipes underneath a river. Pipes to be a minimum of 2m below the base of the river bed. Costs to include reinforced precast concrete pipes for pipe jacking, and Spigot and Socket joints or in-the-wall joints for the pipes. Concrete pipes shall comply to SANS 677 type SC requirements as well as National and Eskom standards.	m		
2.3	<u>D-DT-0895 Sheet 7 and SANS 677</u>	Space, position and fix all PVC / PE ducts for the entire length of the PVC / PE ducts inside the concrete pipe. This can be achieved using rot-proof or remanufactured spacers. (Supply and install.)	m		
2.4	<u>D-DT-8018, D-DT-0895 sheet 7</u>	Supply and Install 6m lengths of 250mm diameter PVC / PE ducts and sockets inside the concrete pipe for MV cables. (PVC / PE pipes to protrude a minimum of 2000mm past pre-cast channel / pipe into the bank of the river/stream. High level water mark to be used as reference.)	m		
2.5	<u>D-DT-8018, D-DT-0895 sheet 7</u>	Supply and Install 6m lengths of 250mm diameter PVC / PE ducts and sockets inside the concrete pipe as spares for maintenance. (PVC / PE pipes to protrude a minimum of 2000mm past pre-cast channel / pipe, into the bank of the river/stream. High level water mark to be used as reference.)	m		
2.6	<u>D-DT-8018, D-DT-0895 sheet 7</u>	Supply and Install 6m lengths of 160mm diameter PVC / PE ducts and sockets inside the concrete pipe for MV cables. (PVC / PE pipes to protrude a minimum of 2000mm past pre-cast channel / pipe into the bank of the river/stream. High level water mark to be used as reference.)	m		

2.7	<u>D-DT-8018, D-DT-0895</u> <u>sheet 7</u>	Supply and Install 6m lengths of 160mm diameter PVC / PE ducts and sockets inside the concrete pipe as spares for maintenance. (PVC / PE pipes to protrude a minimum of 2000mm past pre-cast channel / pipe, into the bank of the river/stream. High level water mark to be used as reference.)	m		
2.8	<u>D-DT-8018, D-DT-0895</u> <u>sheet 7</u>	Supply, deliver and fill a concrete pipe with a bentonite and water mix (10:1) that is combined with a sand and cement mix (20:8) in the ratio 100:1. The mix must be kept in position by sealing the end of the concrete pipe with densomastic paste (to prevent water ingress), while ensuring the PVC / PE pipes inside still protrude past the concrete pipe and is not filled with any backfill material.	m ³		
2.9	n/a	Supply, deliver and Seal spare 250mm diameter PVC / PE ducts with suitable caps to prevent ingress of water, vermin and backfill material.	Each		
2.10	n/a	Supply, deliver and Seal spare 160mm diameter PVC / PE ducts with suitable caps to prevent ingress of water, vermin and backfill material.	Each		
2.11	n/a	Supply and Install non-metallic draw wires in any size spare PVC / PE sleeves.	m		
2.12	Maintenance Management plan / EMP and Civil Engineer's engineering report.	Supply and Install gabions mitigate impede soil erosion. - Prior approval required.	m ³		
2.13	Maintenance Management plan / EMP and Civil Engineer's engineering report.	Supply and Install energy breakers on the river bed to decrease the increased velocity of the water caused by the gabions. - Prior approval required.	m ³		
2.14	Maintenance Management plan / EMP and Civil Engineer's engineering report.	Supply and Install rip rap (Rock armor) mitigate impede soil erosion. - Prior approval required.	m ³		

2.15	Maintenance Management plan / EMP and Civil Engineer's engineering report.	Supply and Install earth retention systems, on river embankment to mitigate soil erosion. - Prior approval required.	m ³		
2.16	Maintenance Management plan / EMP and Civil Engineer's engineering report.	Supply and Install earth Clay plug. - Prior approval required.	m ³		
Total					
Civil Contractor : Road crossing					
	240-56030640 or Site Specific drawing	Provision of drilling pits	m ³		
	240-56030640 or Site Specific drawing	Provision of Bulleting pits	m ³		
3.1	240-56030635 or Site Specific drawing	Directionally drill underneath road and supply and install 250mm diameter PVC / PE duct for MV cable. Contractor to supply PVC / PE pipe compatible with its machine.	m		
3.2	240-56030635 or Site Specific drawing	Directionally drill underneath road and supply and install 160mm diameter PVC / PE duct for MV cable. Contractor to supply PVC / PE pipe compatible with its machine.	m		
3.3	240-56030635 or Site Specific drawing	Bullet underneath road and supply and install 250mm diameter PVC / PE duct for MV cable. Contractor to supply PVC / PE pipe compatible with its machine.	m		
3.4	240-56030635 or Site Specific drawing	Bullet underneath road and supply and install 160mm diameter PVC / PE duct for MV cable. Contractor to supply PVC / PE pipe compatible with its machine.	m		
3.5	<u>D-DT-8018</u>	Install a 250mm diameter PVC / PE sleeves underneath road / entrance (each PVC / PE is in 6m length) for MV cable. Cost to include the concrete casted over the PVC / PE sleeves which shall have a minimum surround of 75 mm, to prevent collapsing or deformation after backfilling. The concrete strength shall be at least 15 MPA.	m		

3.6	<u>D-DT-8018</u>	Install 160mm diameter PVC / PE sleeves underneath road / entrance (each PVC / PE is in 6m length) for MV cable. Cost to include the concrete casted over the PVC / PE sleeves which shall have a minimum surround of 75 mm, to prevent collapsing or deformation after backfilling. The concrete strength shall be at least 15 MPA.	m		
3.7	n/a	Supply, deliver and Seal spare 250mm diameter PVC / PE ducts with suitable caps to prevent ingress of water, vermin and backfill material.	Each		
3.8	n/a	Supply, deliver and Seal spare 160mm diameter PVC / PE ducts with suitable caps to prevent ingress of water, vermin and backfill material.	Each		
3.9	n/a	Supply and Install non-metallic draw wires in any size spare diameter PVC / PE sleeves.	m		
Total					
Civil Contractor : MV Cable installation					
4.1	n/a	Saw cutting of road surface. (One side of trench)	m		
4.2	n/a	Saw cutting of road surface. (On both sides of trench)	Total length - m		
4.3	<u>D-DT-0854</u>	Excavate by hand a 0.45m wide x 1m deep trench for the MV cable (Shale) – General (Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)	m ³		

4.4	<u>D-DT-0854</u>	<p>Excavate by hand a 0.45m wide x 1 deep trench for the MV cable (Soil) – General</p> <p>(Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)</p>	m ³		
4.5	<u>D-DT-0854</u>	<p>Excavate by machine a 0.45m wide x 1 deep trench for the MV cable (Rock) – General</p> <p>(Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)</p>	m ³		
4.6	<u>D-DT-0854</u>	<p>Excavate by machine a 0.45m wide x 1m deep trench for the MV cable (Shale) – General</p> <p>(Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)</p>	m ³		

4.7	<u>D-DT-0854</u>	<p>Excavate by machine a 0.45m wide x 1m deep trench for the MV cable (Soil) – General</p> <p>(Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)</p>	m ³		
4.8	<u>D-DT-0854</u>	<p>Excavate by hand a 0.45m wide x 1.3m deep trench for the MV cable (Shale) – Under Road Surface (Parallel to kerbing.)</p> <p>(Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)</p>	m ³		
4.9	<u>D-DT-0854</u>	<p>Excavate by hand a 0.45m wide x 1.3 deep trench for the MV cable (Soil) – Under Road Surface (Parallel to kerbing.)</p> <p>(Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)</p>	m ³		

4.10	<u>D-DT-0854</u>	<p>Excavate by machine a 0.45m wide x 1.3 deep trench for the MV cable (Rock) – Under Road Surface (Parallel to kerbing.)</p> <p>(Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)</p>	m ³		
4.11	<u>D-DT-0854</u>	<p>Excavate by machine a 0.45m wide x 1.3m deep trench for the MV cable (Shale) – Under Road Surface (Parallel to kerbing.)</p> <p>(Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)</p>	m ³		
4.12	<u>D-DT-0854</u>	<p>Excavate by machine a 0.45m wide x 1.3m deep trench for the MV cable (Soil) – Under Road Surface (Parallel to kerbing.)</p> <p>(Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)</p>	m ³		

4.13	<u>D-DT-0854</u>	Excavate by hand a 0.45m wide x 1.6m deep trench for the MV cable. (Shale) – At Road and Railway crossings. (Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)	m ³		
4.14	<u>D-DT-0854</u>	Excavate by hand a 0.45m wide x 1.6m deep trench for the MV cable. (Soil) – At Road and Railway crossings. (Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)	m ³		
4.15	<u>D-DT-0854</u>	Excavate by machine a 0.45m wide x 1.6m deep trench for the MV cable. (Rock) – At Road and Railway crossings. (Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)	m ³		

4.16	<u>D-DT-0854</u>	Excavate by machine a 0.45m wide x 1.6m deep trench for the MV cable. (Shale) – At Road and Railway crossings. (Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)	m ³		
4.17	<u>D-DT-0854</u>	Excavate by machine a 0.45m wide x 1.6m deep trench for the MV cable. (Soil) – At Road and Railway crossings. (Note: Excavation to be done in sections at a time, from one MV joint bay to the next MV joint bay. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, or as directed on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.)	m ³		
4.18	n/a	Transport (from site) and store soil at suitable site. (First handling of soil, where required.).	m ³		
4.19	<u>D-DT-0854</u>	Transport (from site) and dump soil. (Bedding soil, blanket soil and trench stabilization soil.) (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ³		
4.20	<u>SANS 10198 and D-DT-0854</u>	Sift soil with sieve having a maximum mesh size of no greater than 12mm. (Bedding and blanket)	m ³		
4.21	Local authority requirements or Civil Engineer's engineering report.	Supply (Import), install and hand / machine compact (90% MOD AASHTO) imported C4 soil for trench stabilization or backfill.	m ³		
4.22	Local authority requirements or Civil Engineer's engineering report.	Supply (Import), install and hand / machine compact (90% MOD AASHTO) imported C5 soil for trench stabilization or backfill.	m ³		

4.23	Local authority requirements or Civil Engineer's engineering report.	Supply (Import), install and hand / machine compact (90% MOD AASHTO) imported G4 soil for trench stabilization or backfill.	m ³		
4.24	Local authority requirements or Civil Engineer's engineering report.	Supply (Import), install and hand / machine compact (90% MOD AASHTO) imported G5 soil for trench stabilization or backfill.	m ³		
4.25	<u>SANS 10198 and D-DT-0854</u>	Backfill, sift and compact (in maximum layers of 300mm – 90% MOD AASHTO) original soil as backfill for MV cables. (Original excavated soil)	m ³		
4.26	<u>SANS 10198 and D-DT-0854</u>	Return (Transport), backfill, sift, backfill and compact (in maximum layers of 300mm – 90% MOD AASHTO) original soil as backfill for MV cables. (Original excavated soil; Second handling of soil)	m ³		
4.27	<u>SANS 10198 and D-DT-0854</u>	Offload and install Danger / Warning tape along cable route length. (The tape weights about 22kg for 330m of tape.)	m		
4.28	Maintenance Management plan / EMP (if applicable) or Civil Engineer's engineering report (if applicable).	Chemical rock breaking. (Supply and apply safely) - Prior approval required.	Each		
4.29	Maintenance Management plan / EMP (if applicable) or Civil Engineer's engineering report (if applicable).	Rock blasting. (Supply and apply safely) - Prior approval required.	Each		
4.30	n/a	Transport and dump broken rock. (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ³		
4.31	<u>D-DT-8076 and D-DT-0854</u>	Offload and install pre-cast concrete slabs (760mm long, 200mm wide) as per D-DT-0854, along MV cable route length.	m		

4.32	<u>D-DT-0854 and 240-56030635</u>	Supply, deliver, install (at start of cable trenching) and decommission (after construction) 1.8m high shoring timber on both sides of the MV cable trench. (General / Under Road Surface (Parallel to kerbing)) - Shoring to be designed by ECSA registered Civil / Structural engineer.	Linear Length - m		
4.33	n/a	Perform cross-trenches / trial holes to determine the location of services. Cross-trenches to be reinstated to their original state. (Trench sizes are: 4m wide x 1m long x 1.8m deep = 7.2m³)	m³		
Total					
5.1	<u>D-DT-0854 and 240-56030635</u>	Excavate by hand a 2m long x 1.5m wide x 1.2m deep joint bay. (Shale)	m³		
5.2	<u>D-DT-0854 and 240-56030635</u>	Excavate by hand a 2m long x 1.5m wide x 1.2m deep joint bay. (Soil)	m³		
5.3	<u>D-DT-0854 and 240-56030635</u>	Excavate by machine a 2m long x 1.5m wide x 1.2m deep joint bay. (Rock)	m³		
5.4	<u>D-DT-0854 and 240-56030635</u>	Excavate by machine a 2m long x 1.5m wide x 1.2m deep joint bay. (Shale)	m³		
5.5	<u>D-DT-0854 and 240-56030635</u>	Excavate by machine a 2m long x 1.5m wide x 1.2m deep joint bay. (Soil)	m³		
5.6	<u>D-DT-0854 and 240-56030635</u>	Supply, deliver, install (at the start of trenching) and decommission (after construction) 1.8m high shoring timber on both sides of the MV joint bay. (MV Joint bays are 10m long) - Shoring to be designed by ECSA registered Civil / Structural engineer.	Linear Length - m		
5.7	n/a	Transport (from site) and store soil at suitable site. (First handling of soil).	m³		
5.8	<u>D-DT-0854</u>	Transport (from site) and dump soil. (Bedding soil, blanket soil and trench stabilization soil.) (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m³		
5.9	<u>D-DT-0854</u>	Sift soil with sieve having a maximum mesh size of no greater than 12mm. (Bedding and blanket)	m³		

5.10	Local authority requirements or Civil Engineer's engineering report.	Supply (Import), install and hand / machine compact (90% MOD AASHTO) imported C4 soil for trench stabilization or backfill.	m ³		
5.11	Local authority requirements or Civil Engineer's engineering report.	Supply (Import), install and hand / machine compact (90% MOD AASHTO) imported C5 soil for trench stabilization or backfill.	m ³		
5.12	Local authority requirements or Civil Engineer's engineering report.	Supply (Import), install and hand / machine compact (90% MOD AASHTO) imported G4 soil for trench stabilization or backfill.	m ³		
5.13	Local authority requirements or Civil Engineer's engineering report.	Supply (Import), install and hand / machine compact (90% MOD AASHTO) imported G5 soil for trench stabilization or backfill.	m ³		
5.14	<u>SANS 10198 and D-DT-0854</u>	Backfill, sift and compact (in maximum layers of 300mm – 90% MOD AASHTO) original soil as backfill for MV cables. (Original excavated soil)	m ³		
5.15	<u>D-DT-0854</u>	Return (Transport), sift, backfill and compact (in maximum layers of 300mm – 90% MOD AASHTO) original soil as backfill for MV cable joints. (Original excavated soil; Second handling of soil.)	m ³		
5.16	<u>D-DT-0854</u>	Off-load and install Danger/Warning tape per MV joint bay. (The tape weighs about 22kg for 330m of tape.)	m		
5.17	<u>D-DT-0854</u>	Off-load and Install pre-cast concrete slabs (D-DT-8076, 760mm long, 200mm wide), in MV joint bays.	Each		
Total					
6.1	<u>D-DT-8012 and 240-56030635</u>	Install cable route markers with name plates (Descriptor) along cable route length at intervals of 150m on straight sections, at each bend, at each road crossings, railway crossing, river crossing and each MV joint bay. (Base to be 250mm below ground level. If the route marker is installed on a paved or concrete surface, the top shall be flush with this surface.)	Each		

6.2	D-DT-8012 and 240-56030635	Engrave route markers.	Each		
Total					
7.1	n/a	Excavate by hand a sloped trench for the MV cable. (Note: Excavation to be done in sections at a time, to recover an entire drum's cable, before proceeding with the next section. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, unless directed otherwise on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.) (The existing cable must be used as reference, as to where trenching must be done.) - General, under road surface parallel to kerb.	m ³		
7.2		Excavate by machine a sloped trench for the MV cable. (Note: Excavation to be done in sections at a time, to recover an entire drum's cable, before proceeding with the next section. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, unless directed otherwise on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.) (The existing cable must be used as reference, as to where trenching must be done.) - General, under road surface parallel to kerb.	m ³		
7.3	n/a	Excavate by hand a sloped trench for the MV cable. (Note: Excavation to be done in sections at a time, to recover an entire drum's cable, before proceeding with the next section. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, unless directed otherwise on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.) (The existing cable must be used as reference, as to where trenching must be done.) - Rail or road crossings	m ³		

7.4		Excavate by machine a sloped trench for the MV cable. (Note: Excavation to be done in sections at a time, to recover an entire drum's cable, before proceeding with the next section. After this, the trench must be backfilled, compacted and surfaces reinstated, etc. before continuing with the installation of the next section, unless directed otherwise on-site. The actual labour for backfilling, compacting, reinstatement, etc. will be covered in other activities.) (The existing cable must be used as reference, as to where trenching must be done.) - Rail or road crossings	m ³		
7.5	n/a	Backfill (with normal excavated soil) and compact (in maximum layers of 300mm – 90% MOD AASHTO) all the soil previously removed to recover the MV cable.	m ³		
7.4	n/a	Remove (transport – First handling of soil), store, return (Second handling of soil), backfill (with normal excavated soil) and compact (in maximum layers of 300mm – 90% MOD AASHTO) all the soil previously removed to recover the MV cable.	m ³		
7.5	Maintenance Management plan / EMP (if applicable) or Civil Engineer's engineering report (if applicable).	Chemical rock breaking. (Supply and apply safely) - Prior approval required.	Each		
7.6	Maintenance Management plan / EMP (if applicable) or Civil Engineer's engineering report (if applicable).	Rock blasting. (Supply and apply safely) - Prior approval required.	Each		
7.7	n/a	Transport and dump broken rock. (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ³		
Total					
Civil Contractor : Reinstatement (For new cable and old cable to be decommissioned.)					

8.1	Local authority requirements or Civil Engineer's engineering report.	Remove asphalt surfaces up to 50mm thick, transport and dump material. (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ³		
8.2	Local authority requirements or Civil Engineer's engineering report.	Remove asphalt surfaces above 50mm up to 100mm thick, transport and dump material. (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ³		
8.3	Local authority requirements or Civil Engineer's engineering report.	Remove asphalt surface above 100mm thickness, transport and dump material. (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ³		
8.4	Local authority requirements or Civil Engineer's engineering report, SANS 1200C, SANS 1200DM.	Supply and install, G7 material (In-situ if to specification), 150mm thick and compacted to 93% of mod AASHTO density.	m ³		
8.5	Local authority requirements or Civil Engineer's engineering report, SANS 1200C, SANS 1200DM.	Supply and install, G5 material (In-situ if to specification), 150mm thick and compacted to 95% of mod AASHTO density.	m ³		
8.6	Local authority requirements or Civil Engineer's engineering report, SANS 1200C, SANS 1200DM.	Supply and install, G4 material (In-situ if to specification), 150mm thick and compacted to 95% of mod AASHTO density.	m ³		
8.7	Local authority requirements or Civil Engineer's engineering report, SANS 1200C, SANS 1200ME.	Supply and construct a 150mm thick C4 Subbase layer (Compacted to 95% mod. AASHTO density)	m ³		

8.8	Local authority requirements or Civil Engineer's engineering report, SANS 1200C, SANS 1200ME.	Supply and construct a 150mm thick C5 Subbase layer (Compacted to 95% mod. AASHTO density)	m ³		
8.9	Local authority requirements or Civil Engineer's engineering report, SANS 1200C, SANS 1200ME.	Stabilize Subbase	m ³		
8.10	Local authority requirements or Civil Engineer's engineering report, SANS 1200C, SANS 1200ME.	Supply and install stabilizing agent (Cement)	kg		
8.11	Local authority requirements or Civil Engineer's engineering report, SANS 1200C.	Supply and install asphalt up to 50mm thick	m ²		
8.12	Local authority requirements or Civil Engineer's engineering report, SANS 1200C.	Supply and install asphalt above 50mm up to 100mm thick	m ²		
8.13	Local authority requirements or Civil Engineer's engineering report, SANS 1200C.	Supply and install asphalt above 100mm thick	m ²		
8.14	Local authority requirements or Civil Engineer's engineering report, SANS 1200C.	Supply and install bitumen rubber seal for joint between concrete and asphalt surfaces. Rate includes joint forming and sealant.	m ²		

8.15	Civil Engineer's engineering report / SANS 1200.	Remove concrete surfaces up to 100mm in thickness, and sub layers (if applicable), transport and dump material. (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ³		
8.16	Civil Engineer's engineering report / SANS 1200.	Remove concrete surfaces above 100mm up to 150mm in thickness, and sub layers (if applicable), transport and dump material. (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ³		
8.17	Civil Engineer's engineering report / SANS 1200.	Remove concrete surfaces above 150mm up to 200mm in thickness, and sub layers (if applicable), transport and dump material. (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ³		
8.18	Civil Engineer's engineering report / SANS 1200.	Remove concrete surfaces above 200mm up to 300mm in thickness, and sub layers (if applicable), transport and dump material. (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ³		
8.19	Civil Engineer's engineering report / SANS 1200.	Supply and install concrete surface: 25MPa/ 19mm 100mm thick, wood floated finish to match existing.	m ²		
8.20	Civil Engineer's engineering report / SANS 1200.	Supply and install concrete surface: 25MPa/ 19 mm 150mm thick, wood floated finish to match existing.	m ²		
8.21	Civil Engineer's engineering report / SANS 1200.	Supply and install concrete surface: 25MPa/ 19mm 300mm thick, wood floated finish to match existing.	m ²		
8.22	Civil Engineer's engineering report / SANS 1200.	Remove kerbs (up to 350mm high and 400mm wide), stockpile for re-use later.	m		
8.23	Civil Engineer's engineering report / SANS 1200.	Reinstall concrete kerbs previously removed	m		
8.24	Civil Engineer's engineering report / SANS 1200 GE	Supply and install semi-mountable concrete kerbing.	m		

8.25	Civil Engineer's engineering report / SANS 1200 GE	Supply and install mountable concrete kerbing.	m		
8.26	Civil Engineer's engineering report / SANS 1200.	Remove brick paving, stockpile for re-use later.	m ²		
8.27	Civil Engineer's engineering report / SANS 1200.	Reinstall paving previously removed	m ²		
8.28	Civil Engineer's engineering report / SANS 1200.	Cutting of Brick Paving up to 50mm thickness.	m		
8.29	Civil Engineer's engineering report / SANS 1200.	Cutting of Brick Paving above 50mm up to 100mm in thickness.	m		
8.30	Civil Engineer's engineering report / SANS 1200MJ	Supply and install paving that matches existing (complete). Bricks laying pattern to match existing.	Cost plus fee		
8.31	Civil Engineer's engineering report / SANS 1200MJ	Supply and install paving bedding sand 20 mm (compacted thickness), approved weed killer, and filler sand with grading less than 1.18 mm.	m ²		
8.32	Civil Engineer's engineering report / SANS 1200MJ	Cutting of paving bricks to fit edge restrains from paving of 80mm in thickness.	m		
8.33	Civil Engineer's engineering report / SANS 1200MJ	Cutting of paving bricks to fit edge restrains from paving of 60mm in thickness.	m		
8.34	n/a	Remove, transport, and safeguard fences from site.	m ²		
8.35	n/a	Transport back and reinstate fences (previously stored) to its original state.	m ²		
8.36	Civil Engineer's engineering report / SANS 1200.	Break and remove single brick wall, transport and dump material. (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ²		

8.37	Civil Engineer's engineering report / SANS 1200.	Break and remove double brick wall, transport and dump material. (Material to be dumped at suitable site in accordance with the Maintenance Management plan / EMP .)	m ²		
8.38	Civil Engineer's engineering report / SANS 1200.	Supply and construct single brick wall, using clay bricks and Class II mortar for 110mm thickness.	m ²		
8.39	Civil Engineer's engineering report / SANS 1200.	Supply and construct single brick wall, using clay bricks and Class II mortar for 230mm thickness.	m ²		
8.40	Civil Engineer's engineering report / SANS 1200.	Supply and construct single brick wall, using clay bricks and Class II mortar for 345mm thickness.	m ²		
8.41	Civil Engineer's engineering report / SANS 1200.	Supply and construct single brick wall, using face bricks and Class II mortar for 110mm thickness.	m ²		
8.42	Civil Engineer's engineering report / SANS 1200.	Supply and construct single brick wall, using face bricks and Class II mortar for 230mm thickness.	m ²		
8.43	Civil Engineer's engineering report / SANS 1200.	Supply and construct single brick wall, using face bricks and Class II mortar for 345mm thickness.	m ²		
8.44	Civil Engineer's engineering report / SANS 1200.	Supply and apply one layer cement plaster (12mm thick) on walls, Wood floated finish.	m ²		
8.45	Civil Engineer's engineering report / SANS 1200.	Supply and apply one layer cement plaster (12mm thick) on walls, Steel floated finish.	m ²		
8.46	Civil Engineer's engineering report / SANS 1200.	Supply and install waterproofing; PVC membrane 1.2 mm thick	m ²		
8.47	Civil Engineer's engineering report / SANS 1200.	Supply and install waterproofing; PVC membrane 1.5 mm thick	m ²		

8.48	Civil Engineer's engineering report / SANS 1200.	Supply and install waterproofing; PVC membrane 1.8 mm thick	m ²		
8.49	Civil Engineer's engineering report / SANS 1200.	Supply and install waterproofing; PVC membrane 2.4 mm thick	m ²		
8.50	Civil Engineer's engineering report / SANS 1200.	Supply and install waterproofing; Cold butemin application	m ²		
8.51	Civil Engineer's engineering report / SANS 1200.	Supply and install waterproofing; Heat torch butemin application	m ²		
8.52	n/a	Painting - To match existing.	m ²		
8.53	n/a	Reinstate gardens to its original state (Including racking).	m ²		
8.54	n/a	Reinstate Lawn / veld to its original state (Including racking).	m ²		

Bill of Activities					
Item	Reference: Drawing / Standard	Description	Unit	Material Rate	Labor Total
Electrical Contractor : P&Gs and Pre-construction related activities.					
1.1	n/a	PPE, based on cost plus fee and replacement cycle, prior approval required	sum		
1.2	n/a	Quality Management System, Health and Safety System, Environmental Management and Site Maintenance, Safety Inspections, OHSA appointments, Non-Conformance Process. Percentage of Total Labour Value, after certification.	sum		
1.3	PSIRA	Security Officer - Grade C unarmed (with Panic button) prior approval required	Per day		
1.5	PSIRA and Firearm Control Act	Security Officer - Grade C armed (with Panic button) prior approval required	Per day		

1.6	PSIRA	Bulletproof vests (once-off payment)...prior approval required	Each - Once off payment per year contract.		
1.7	n/a	Toilets (Security officers and General contract workers) prior approval required	Per day		
1.8	n/a	Pump Water to ensure trenches and joint bays are free of water at all times.	Hour		
1.9	n/a	Provide Cable flash blankets, to be used along the cable route, when in close proximity to other live cables.	each		
1.10	n/a	Set up cable drums station prior approval required	Sum		
1.11	n/a	Set up winch station prior required	Sum		
1.12	n/a	Identify and trace cable (Contractor to supply equipment to locate and trace cable)	per meter		
1.13	<u>240-56030635</u>	Supply and use MV joint bay protective weather cover (waterproof tent) at joints bays.	per joint bay		
1.14	n/a	Supply and run Generator and lights at joint bays. Fuel to be supplied by contractor.	Hour		
Total					
Electrical Contractor : River crossing					
2.1	n/a	Supply, deliver and fill PVC / PE pipes, occupied by MV cable with bentonite and water mix (10:1) that is combined with a sand and cement mix (20:8) in the ratio of 100:1. The mix shall be kept in position by sealing the end of the pipe duct with densomastic paste (Supplied and installed by contractor) where the power cable enters and exits to prevent water ingress.	m ³		
Total					
Electrical Contractor : Road crossing					
3.1	n/a	Supply, deliver and fill PVC / PE ducts with Power cable inside (total linear length longer than 3m) with bentonite and water mix (10:1) that is combined with a sand and cement mix (20:8) in the ratio of 100:1. The mix shall be kept in position by sealing the end of the pipe duct with densomastic paste (Supplied and installed by contractor) where the power cable enters and exits to prevent water ingress.	m ³		

3.2	n/a	Supply, offload (transport) and install rot-proof bags containing a weak sand-cement mix (30:1) for a distance of approximately 0.5 m into the MV cable trench wherever cable enters or exists a pipe duct, to support the MV cable.	Bag		
3.3	n/a	Supply, offload (transport) and install rot-proof bags containing a weak sand-cement mix (30:1) when constructing a road crossing. Bags to be placed such that it forms a double wall on both sides of the trench (for support). Bags to be re-used at crossings.	Bag		
Total					
Electrical Contractor : MV Cable trenches					
4.1	<u>SANS 10198 and D-DT-0854</u>	Supply (Import), install and hand compact (90% MOD AASHTO) imported 1.2 Km/W sifted soil as bedding and blanket for the MV cable.	m ³		
4.2	<u>SANS 10198 and D-DT-0854</u>	Supply (Import), install and hand compact (90% MOD AASHTO) imported 1 Km/W sifted soil as bedding and blanket for the MV cable.	m ³		
4.3	<u>SANS 10198 and D-DT-0854</u>	Supply (Import), install and hand compact (90% MOD AASHTO) imported 0.8 Km/W sifted soil as bedding and blanket for the MV cable.	m ³		
4.4	<u>SANS 10198 and D-DT-0854</u>	Backfill sift and hand compact (90% MOD AASHTO) original soil as bedding and blanket for the MV cable. (Original excavated soil;)	m ³		
4.5	<u>SANS 10198 and D-DT-0854</u>	Return (Transport), sift, backfill, and hand compact (90% MOD AASHTO) original soil as bedding and blanket for the MV cable. (Original excavated soil; Second handling of soil)	m ³		
Total					
Electrical Contractor : MV Joint bays / trenches					
5.1	<u>D-DT-0854 and 240-56030635</u>	Supply (Import), install and hand compact (SANS 10198) imported sifted 1.2 Km/W soil around MV cable joints.	m ³		
5.2	<u>D-DT-0854 and 240-56030635</u>	Supply (Import), install and hand compact (SANS 10198) imported sifted 1 Km/W soil around MV cable joints.	m ³		
5.3	<u>D-DT-0854 and 240-56030635</u>	Supply (Import), install and hand compact (SANS 10198) imported sifted 0.8 Km/W soil around MV cable joints.	m ³		
5.4	<u>D-DT-0854 and 240-56030635</u>	Backfill, sift and hand compact (90% MOD AASHTO) original excavated soil as bedding and blanket for the MV cable joint. (Original excavated soil;)	m ³		

5.5	<u>D-DT-0854 and 240-56030635</u>	Return (Transport), sift, backfill, and hand compact (90% MOD AASHTO) original excavated soil as bedding and blanket for the MV cable joint.)	m ³		
Total					
Electrical Contractor : Removal of existing MV cable					
6.1	n/a	Remove MV cable from open trench (site), and drum cable. Drummed cable to be Transported to Eskom Rosherville stores. (A maximum of 300m of cable to be placed on a drum). Ends of cable to be sealed off with suitable caps.	m		
6.2	D-DT-2879 or other suitable cap	Cut and cap cable.	Each		
Total					
Electrical Contractor : MV Cable installation					
7.1	n/a	In unstable areas shorter than 10m along the MV cable route length, supply, offload (transport) and install rot-proof bags containing a weak sand-cement mix (30:1) such that it lines the bottom of the MV cable trench. The number of bags used will depend upon the ground softness.	Bag		
7.2	<u>D-DT-0854</u>	Lay / pull and install MV 3-Core cable into open trench and inside pipes.	m		
7.3	<u>D-DT-0854</u>	Lay / pull and install MV 1-Core cable into open trench and inside pipes.	m		
7.4	<u>n/a</u>	Supply and install concrete screed, 50mm high, with a cement to sand ratio of 1:5, inside cable trench.	m ³		
7.5	<u>n/a</u>	Encase MV cable and selected accessories (including bedding and blanket soil layers) to prevent theft. Solution may not affect thermal resistivity of surrounding soil or heat dissipation from cable. Solution must have a means to remove encasement for instances where Eskom needs to perform maintenance.	sum		
Total					
Electrical Contractor : MV Joint installation					
8.1	<u>D-DT-8007 & D-DT-8008</u>	Make-Off a Cable Joint - 3-Core <=95mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		

8.2	<u>D-DT-8007 & D-DT-8008</u>	Make-Off a Cable Joint - 3-Core <=185mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.3	<u>D-DT-8007 & D-DT-8008</u>	Make-Off a Cable Joint - 3-Core <=400mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.4	<u>D-DT-8007 & D-DT-8008</u>	Make-Off a Cable Joint - 1-Core <=185mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.5	<u>D-DT-8007 & D-DT-8008</u>	Make-Off a Cable Joint - 1-Core <=400mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.6	<u>D-DT-8007 & D-DT-8008</u>	Make-Off a Cable Joint - 1-Core <=800mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.7	<u>D-DT-8007, D-DT-8008, D-DT-8004 & D-DT-8017</u>	Make-Off a Cable Trifurcating Joint - 3 Core to 1-Core <=95mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.8	<u>D-DT-8007, D-DT-8008, D-DT-8004 & D-DT-8017</u>	Make-Off a Cable Trifurcating Joint - 3 Core to 1-Core <=185mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.9	<u>D-DT-8007, D-DT-8008, D-DT-8004 & D-DT-8017</u>	Make-Off a Cable Trifurcating Joint - 3-Core to 1-Core <=400mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.10	<u>D-DT-8021</u>	Make-Off a Cable Transition Joint - 3-Core <=95mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.11	<u>D-DT-8021</u>	Make-Off a Cable Transition Joint - 3-Core <=185mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.12	<u>D-DT-8021</u>	Make-Off a Cable Transition Joint - 3-Core <=400mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.13	<u>D-DT-8021</u>	Make-Off a Cable Trifurcating Transition Joint - 3-Core to 1-Core <=95mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.14	<u>D-DT-8021</u>	Make-Off a Cable Trifurcating Transition Joint - 3-Core to 1-Core <=185mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.15	<u>D-DT-8021</u>	Make-Off a Cable Trifurcating Transition Joint - 3-Core to 1-Core <=400mm sq MV Cable (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each		
8.16	<u>D-DT-2808</u>	Make-Off a (long) Cable Joint - 3-Core <=95mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.17	<u>D-DT-2808</u>	Make-Off a (long) Cable Joint - 3-Core <=185mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.18	<u>D-DT-2808</u>	Make-Off a (long) Cable Joint - 3-Core <=400mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		

8.19	<u>D-DT-8008</u>	Make-Off a Cable Joint - 3-Core <=95mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.20	<u>D-DT-8008</u>	Make-Off a Cable Joint - 3-Core <=185mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.21	<u>D-DT-8008</u>	Make-Off a Cable Joint - 3-Core <=300mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.22	<u>D-DT-8008</u>	Make-Off a Cable Joint - 1-Core <=185mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.23	<u>D-DT-8008</u>	Make-Off a Cable Joint - 1-Core <=300mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.24	<u>D-DT-8008</u>	Make-Off a Cable Joint - 1-Core <=630mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.25	<u>D-DT-8008</u>	Make-Off a Cable Transition Trifurcating Joint - 3-Core to 1-Core <=95mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.26	<u>D-DT-8008</u>	Make-Off a Cable Trifurcating Transition Joint - 3-Core to 1-Core <=185mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.27	<u>D-DT-8021</u>	Make-Off a Cable Trifurcating Transition Joint - 3-Core to 1-Core <=95mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.28	<u>D-DT-8021</u>	Make-Off a Cable Trifurcating Transition Joint - 3-Core to 1-Core <=185mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
8.29	<u>D-DT-8021</u>	Make-Off a Cable Trifurcating Transition Joint - 3-Core to 1-Core <=400mm sq MV Cable (33 kV, XLPE, Cu / Al)	Each		
Total					
Electrical Contractor : MV Termination installation					
9.1	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 95mm sq Indoor Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.2	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 95mm sq Shroud (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.3	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 95mm sq Unscreened Separable Connector Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.4	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 95mm sq Unscreened Separable Connector Extended Screen Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		

9.5	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 95mm sq Screened Separable Connector Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.6	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 95mm sq Screened Separable Connector Extended Screen Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.7	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 185mm sq Indoor Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.8	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 185mm sq Shroud (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.9	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 185mm sq Unscreened Separable Connector Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.10	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 185mm sq Unscreened Separable Connector Extended Screen Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.12	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 185mm sq Screened Separable Connector Extended Screen Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.13	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 400mm sq Indoor Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.14	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 400mm sq Shroud (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.15	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 400mm sq Unscreened Separable Connector Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.16	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 400mm sq Unscreened Separable Connector Extended Screen Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.17	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 400mm sq Screened Separable Connector Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.18	<u>D-DT-8005 & D-DT-8006</u>	Install 3-Core <= 400mm sq Screened Separable Connector Extended Screen Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.19	<u>D-DT-8006</u>	Install 3-Core <= 95mm sq Indoor Termination (33 kV, XLPE, Cu / Al) - Complete will all associated accessories.	Each (kit)		

9.20	<u>D-DT-8006</u>	Install 3-Core <= 185mm sq Indoor Termination (33 kV, XLPE, Cu / Al) - Complete will all associated accessories.	Each (kit)		
9.21	<u>D-DT-8006</u>	Install 3-Core <= 300mm sq Indoor Termination (33 kV, XLPE, Cu / Al) - Complete will all associated accessories.	Each (kit)		
9.22	<u>D-DT-8005, D-DT-8006, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 3-Core <=95mm sq Outdoor Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.23	<u>D-DT-8005, D-DT-8006, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 3-Core <=185mm sq Outdoor Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.24	<u>D-DT-8005, D-DT-8006, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 3-Core <=400mm sq Outdoor Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.25	<u>D-DT-8006, D-DT-2806, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 3-Core <=95mm sq Outdoor Termination (33 kV, XLPE, Cu / Al)	Each (kit)		
9.26	<u>D-DT-8006, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 3-Core <=185mm sq Outdoor Termination (33 kV, XLPE, Cu / Al)	Each (kit)		
9.27	<u>D-DT-8006, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 3-Core <=400mm sq Outdoor Termination (33 kV, XLPE, Cu / Al)	Each (kit)		
9.28	<u>D-DT-8005 & D-DT-8006</u>	Install 1-Core <= 185mm sq Indoor Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.29	<u>D-DT-8005 & D-DT-8006</u>	Install 1-Core <= 185mm sq Shroud (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.30	<u>D-DT-8005 & D-DT-8006</u>	Install 1-Core <= 185mm sq Unscreened Separable Connector Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.31	<u>D-DT-8005 & D-DT-8006</u>	Install 1-Core <= 185mm sq Unscreened Separable Connector Extended Screen Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.32	<u>D-DT-8005 & D-DT-8006</u>	Install 1-Core <= 185mm sq Screened Separable Connector Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		

9.33	<u>D-DT-8005 & D-DT-8006</u>	Install 1-Core <= 185mm sq Screened Separable Connector Extended Screen Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.43	<u>D-DT-8005 & D-DT-8006</u>	Install 1-Core <= 800mm sq Unscreened Separable Connector Extended Screen Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.44	<u>D-DT-8005 & D-DT-8006</u>	Install 1-Core <= 800mm sq Screened Separable Connector Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.45	<u>D-DT-8005 & D-DT-8006</u>	Install 1-Core <= 800mm sq Screened Separable Connector Extended Screen Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.46	<u>D-DT-8006</u>	Install 1-Core <= 185mm sq Indoor Termination (33 kV XLPE, Cu / Al) - Complete will all associated accessories.	Each (kit)		
9.47	<u>D-DT-8006</u>	Install 1-Core <= 400mm sq Indoor Termination (33 kV, XLPE, Cu / Al) - Complete will all associated accessories.	Each (kit)		
9.48	<u>D-DT-8006</u>	Install 1-Core <= 630mm sq Indoor Termination (33 kV, XLPE, Cu / Al) - Complete will all associated accessories.	Each (kit)		
9.49	<u>D-DT-8005, D-DT-8006, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 1-Core <=185mm sq Outdoor Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.50	<u>D-DT-8005, D-DT-8006, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 1-Core <=400mm sq Outdoor Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.51	<u>D-DT-8005, D-DT-8006, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 1-Core <=800mm sq Outdoor Termination (6.6 kV / 11 kV / 22 kV, PILC / XLPE, Cu / Al)	Each (kit)		
9.52	<u>D-DT-8006, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 1-Core <=185mm sq Outdoor Termination (33 kV, XLPE, Cu / Al)	Each (kit)		
9.53	<u>D-DT-8006, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 1-Core <=400mm sq Outdoor Termination (33 kV, XLPE, Cu / Al)	Each (kit)		
9.54	<u>D-DT-8006, D-DT-0850, D-DT-0851 & D-DT-0852</u>	Install 1-Core <=630mm sq Outdoor Termination (33 kV, XLPE, Cu / Al)	Each (kit)		

9.55	<u>D-DT-0850, D-DT-0851 and D-DT-0852</u>	Install Equipment Links; 3-Phase	Each		
9.56	<u>D-DT-0850, D-DT-0851 and D-DT-0852</u>	Install cable support bracket and surge arresters - 3-Phase	Each		
9.57	<u>D-DT-0850, D-DT-0851 and D-DT-0852</u>	Install a Steel Pipe	Each		
9.58	<u>D-DT-0850, D-DT-0851 and D-DT-0852</u>	Install Anti-climb device	Each		
9.59	<u>D-DT-0850, D-DT-0851 and D-DT-0852</u>	Install Danger label	Each		
9.60	<u>240-56030635</u>	Stencilling	p/letter		
9.61	<u>240-56030635</u>	Install Labels (Chromadek and Aluminium)	Each		
9.62	<u>D-DT-0855, 240-56030635 and 240-130615754</u>	Excavation - length long, 0.5m deep and 0.6m wide	m ³		
9.63	<u>D-DT-0855, 240-56030635 and 240-130615754</u>	Install 16mm sq bare Stranded Cu Conductor	m		
9.64	<u>D-DT-0855, 240-56030635 and 240-130615754</u>	Install 16mm sq insulated Stranded Cu Conductor	m		
9.65	<u>D-DT-0855, 240-56030635 and 240-130615754</u>	Install earth rods	Each		
9.66	<u>D-DT-0855, 240-56030635 and 240-130615754</u>	Install Earth Electrode	Each		
9.67	<u>D-DT-0855, 240-56030635 and 240-130615754</u>	Backfill - length long, 0.5m deep and 0.6m wide	m ³		
9.68	<u>240-56030635</u>	Install external warning flash label	Each		
9.69	<u>D-DT-8019</u>	Install cable clamps.	Each		
9.70	<u>240-56030635</u>	Label switchgear	Each		
9.71	<u>240-56030635</u>	Label Cable on Al flat plate	Each		
9.72	<u>240-56030635</u>	Label cable at Overhead line termination	Each		
9.73	<u>240-120804300</u>	Substation label	Each		
9.74	<u>240-56030635</u>	Install Earth Fault Indicator (EFI), with CT	Each		
9.75	n/a	Reseal cable after installation in wall. - Prior approval required.	Each		

Total					
Electrical Contractor : Miniature Substation					
10.1	<u>240-56030635</u>	Prepare Site Including Excavation and Compaction for Pre-Cast Plinth	m ²		
10.2	<u>D-DT-0859</u>	Install Pre-Cast Plinth	Each		
10.3	<u>D-DT-0859</u>	Install Miniature Substation (Type A or Type B)	Each		
10.4	<u>240-56030635</u>	Close cable entry and vermin Proofing	Each		
10.5	<u>240-56030635</u>	Stencilling	p/letter		
10.6	<u>240-56030635</u>	Install Labels (Chromadek and Aluminium)	Each		
10.7	D-DT-0855, 240-56030635 and 240-130615754	Excavation - length long, 0.5m deep and 0.6m wide	m ³		
10.8	D-DT-0855, 240-56030635 and 240-130615754	Install 16mm sq bare Stranded Cu Conductor	m		
10.9	D-DT-0855, 240-56030635 and 240-130615754	Install 16mm sq insulated Stranded Cu Conductor	m		
10.10	D-DT-0855, 240-56030635 and 240-130615754	Install earth rods	Each		
10.11	D-DT-0855, 240-56030635 and 240-130615754	Install Earth Electrode with continuous earthing back to source substation (MV & LV)	Each		
10.12	D-DT-0855, 240-56030635 and 240-130615754	Install Earth Electrode without continuous earthing back to source substation (MV & LV)	Each		
10.13	D-DT-0855, 240-56030635 and 240-130615754	Backfill - length long, 0.5m deep and 0.6m wide	m ³		
10.14	<u>240-56030635</u>	Install external warning flash label	Each		
Total					
Electrical Contractor : Ring Main Unit					
11.1	<u>240-56030635</u>	Prepare Site Including Excavation and Compaction for Pre-Cast Plinth	m ²		
11.2	<u>D-DT-0863</u>	Install Pre-Cast Plinth	Each		
11.3	<u>D-DT-0863</u>	Install Ring Main Unit	Each		
11.4	<u>240-56030635</u>	Close cable entry and vermin Proofing	Each		

11.5	<u>240-56030635</u>	Stencilling	p/letter		
11.6	<u>240-56030635</u>	Install Labels (Chromadek and Aluminium)	Each		
11.7	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Excavation - length long, 0.5m deep and 0.6m wide	m ³		
11.8	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install 16mm sq bare Stranded Cu Conductor	m		
11.9	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install 16mm sq insulated Stranded Cu Conductor	m		
11.10	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install earth rods	Each		
11.11	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install Earth Electrode with continuous earthing back to source substation	Each		
11.12	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install Earth Electrode without continuous earthing back to source substation	Each		
11.13	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Backfill - length long, 0.5m deep and 0.6m wide	m ³		
11.14	<u>240-56030635</u>	Install external warning flash label	Each		
Total					
Electrical Contractor : Ground Mounted CT-VT Unit and Ground Mounted Transformer Unit					
12.1	<u>240-56030635</u>	Prepare Site Including Excavation and Compaction for Pre-Cast Plinth	m ²		
12.2	<u>D-DT-0861 & D-DT-0864</u>	Install Pre-Cast Plinth	Each		
12.3	<u>D-DT-0864 and D-DT-0865</u>	Install Ground Mount CT-VT Unit / Ground Mounted Transformer Unit	Each		
12.4	<u>240-56030635</u>	Close cable entry and vermin Proofing	Each		
12.5	<u>240-56030635</u>	Stencilling	p/letter		
12.6	<u>240-56030635</u>	Install Labels (Chromadek and Aluminium)	Each		

12.7	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Excavation - length long, 0.5m deep and 0.6m wide	m ³	
12.8	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install 16mm sq bare Stranded Cu Conductor	m	
12.9	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install 16mm sq insulated Stranded Cu Conductor	m	
12.10	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install earth rods	Each	
12.11	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install Earth Electrode with continuous earthing back to source substation (CT/VT unit)	Each	
12.12	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install Earth Electrode without continuous earthing back to source substation (CT/VT unit)	Each	
12.13	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install Earth Electrode with continuous earthing back to source substation (MV & LV, for ground mount transformer)	Each	
12.14	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Install Earth Electrode without continuous earthing back to source substation (MV & LV, for ground mount transformer)	Each	
12.15	D-DT-0862, D-DT-0865, 240-56030635 and 240-130615754	Backfill - length long, 0.5m deep and 0.6m wide	m ³	
12.16	240-56030635	Install external warning flash label	Each	
Total				
Electrical Contractor : Sheath repair				
13.1	n/a	Locate sheath fault	Per Fault	
13.2	D-DT-2877 & D-DT-8077	Repair cable other sheath	Per Fault	
Total				

Electrical Contractor : As-built drawings (All documents and drawings to be documented and submitted to Eskom in paper format and Electronic media.)					
14.1	<u>D-DT-0858 and 240-56030635</u>	Create an as-built cadastral drawings that show the positions of the cable, joints, terminations, relative to recognized boundaries and with Global Positioning Satellite (GPS) co-ordinates. (GPS coordinates to be accurate to 0.5m) In addition, these drawings shall also include positions and routes of other (third party) services in close proximity to the newly installed MV power cable as they where encountered on-site, during installation. Drawing should also be stored in *.dxf / *.dgn format capable of being uploaded into Micro-station. - Prior approval required.	Each		
Total					
Electrical Contractor: Transport					
15.1	n/a	LDV	km		
15.2	n/a	Personnel Transport for Staff	km		
15.3	n/a	6m ³ Tipper Truck	km		
15.4	n/a	Transport Truck 5-10 ton	km		
15.5	n/a	Transport Truck 5-10 ton with crane	km		

PART 3: SCOPE OF WORK

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C3.1: EMPLOYER'S SERVICE INFORMATION

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1. Description of the service

1.1. Executive overview

Provision for Maintenance and Repairs of Medium Voltage (6.6 kV to 33 kV) - Oil impregnated paper and XLPE cables, within Eskom Distribution Gauteng Cluster, for a period of 3 years on an "as and when" required basis.

Civil Scope of Work:

- 1.) P&Gs and Pre-construction related activities. (Specialised barricading, trench covers and traffic control.)
- 2.) River crossing, road crossings and embankment support. (Pipe jacking with sleeves, Directional drilling with sleeves, earth retention and soil erosion mitigation.)
- 3.) MV Cable and MV joint installation and/or decommissioning. (Road cutting; excavation, importing and backfilling of soil; rock blasting; shoring; cable route markers.)
- 4.) Reinstatement (Road, paved, concrete, lawn surfaces; fences.)

Electrical Scope of Work:

- 1.) P&Gs and Pre-construction related activities. (PPE, QMS, environmental compliance, security, water pump, flash blankets, cable installation stations, weather covers, generators and lights.)
- 2.) River crossing and Road crossing. (Cable installation with bentonite and support bags.)
- 3.) MV Cable and MV joint installation or decommissioning. (Importing or backfilling of bedding and blanket soil; recovering of cable; cut and capping of cable; new cable installation, jointing and terminating ranging from 6.6 kV to 33 kV - Oil impregnated and XLPE cable on underground and overhead applications; Substation, mini-sub, RMU, CT/VT and Ground Mount transformer installation applications; earthing; general repair; anti-theft measures; labelling.)
- 4.) As-built drawings (if applicable)
- 5.) Transport (Staff and construction related transport).

1.2. Employer's requirements for the service

Provision for Maintenance and Repairs of Medium Voltage (6.6 kV to 33 kV) - Oil impregnated paper and XLPE cables, within Eskom Distribution Gauteng Operating Unit, for a period of 3 years on an "as and when" required basis as per the following standards Specification for Medium Voltage XLPE and Impregnated Paper Insulated Cable 240-56063792

The contractor shall ensure the wayleaves and approvals from all statutory bodies, non-statutory bodies, service providers, or any other third parties for the new / existing cable route obtained from Eskom have not expired, prior to and during to construction. The contractor shall ensure wayleaves and approvals are renewed as necessary, throughout the duration of the construction or site works until the work is completed and Eskom assets are formally handed back to Eskom. The contractor shall furthermore ensure that all requirements from the statutory bodies, non-statutory bodies, service providers, or any other third parties are adhered to, and will complete and submit project close out and project completion documentation as may be required by these statutory bodies, non- statutory bodies, service providers, or any other third parties to them. Copies of these documents to be submitted to Eskom.

All Civil works and Electrical-Civil works shall comply to SANS 1200 (all applicable parts) and the requirements of the bill of quantities.

The contractor shall perform soil compaction testing along the MV cable route length in intervals of 300m. Test results shall be signed-off and submitted to Eskom on a test certificate in paper and electronic format. The contractor shall also perform soil compaction testing in all areas where reinstatement occurred and/or where required by statutory bodies, non-statutory bodies, service providers, or any other third parties. For Eskom soil compaction testing, a DCP (dynamic cone penetrometer) must be used. Five blows on a given

test with this device may not exceed 150mm in soil depth. (Equivalent to 90% Mod AASHTO.) If the depth is exceeded, then the Eskom engineer must be notified immediately. For statutory bodies, non-statutory bodies, service providers, or any other third parties, the contractor shall adhere and comply to the requirements of these bodies, service providers, or any other third parties.

The contractor shall test the thermal resistivity of imported bedding and blanket soil at an accredited SANAS laboratory, after installation, at intervals of 500m along the MV cable route length in accordance with SANS 10198-5 or Cigre TB 714, and prove that the imported soil meets the required thermal resistivity values as per the requirements of the bill of quantities. Test certificates to be documented and stored on an electronic media and submitted to Eskom. Where the imported soil test results (as described above) does not meet the requirements of the BoQ, the contractor will remove and replace the imported soil at its own cost, until the required thermal resistivity values are met. Eskom will not take over and pay for imported soil that has not been tested as described above.

The contractor shall supply only Eskom approved material or products, approved at the time when Eskom request the material to be supplied. The onus lies with the contractor to ensure the latest Eskom approved material and products are supplied and take note that material or products may vary over time. Eskom authorised engineering department(s) can be approached for more information on Eskom approved material. Where Eskom authorised engineering department(s) cannot supply details regarding approved material, the contractor will be notified, and the contractor shall then make material proposal(s) to meet the requirements of the Eskom authorised engineering department(s). The contractor shall also supply drawings, specifications, test certificates or any other documents that may be required by the Eskom authorised engineering department(s) related to such material proposals. The Eskom authorised engineering department(s) will then advise which products may be used. Only after the Eskom authorised engineering department(s) have specified the approved material products or selected the most suitable material product; may the contractor source the material.

The contractor shall only charge for transport when decommission material / assets, intended for scrapping, back to Rosherville stores. Material / assets includes, but not limited to 1C or 3C XLPE / oil filled cable (with oil drained by contractor, prior to transport), MV joints, MV terminations, Link and Pressure - kiosks / manholes (with associated connections, equipment, bonding leads, earthing, pressure gauges, oil tanks, piping, monitoring equipment, auxiliary and ancillary equipment, etc.), route markers, compound, general cable waste, etc. All decommissioning performed by the contractor shall be done in accordance with the environmental Maintenance Management plan and EMP documentation specified in the contract.

1.3. Interpretation and terminology

The following abbreviations are used in this Service Information:

Abbreviation	Meaning given to the abbreviation
AL	Aluminium
MV	Medium Voltage
Cu	Copper
HDPE	High Density Poly Ethylene
MDPE	Medium Density Poly Ethylene
XLPE	Cross-Linked Polyethylene
PILE	Impregnated Paper-Insulated Lead Covered Cable

2. Management strategy and start up.

2.1. The *Contractor's* plan for the *service*

The *Contractor* shall take the following into account in his plan; supply installation instructions, fully completed as required by the instructions, for all joints and terminations performed on-site. The *Contractor* shall also supply fully completed Eskom quality control checklists. Only after the fully completed installations instructions and checklists are submitted, and after the work is completed and the assets formally handed back to Eskom, shall payment be made if no defects are raised by Eskom. Documents to be supplied in paper and electronic format.

2.2. Management meetings

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

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk registers and compensation events	Weekly	As per Task Order	Supervisor, Contractor
Overall contract progress and feedback	Monthly	As per Task Order	Employer, Contractor and other relevant stakeholder

Meetings of a specialist nature may be convened as specified elsewhere in this Service Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *service*. Records of these meetings shall be submitted to the *Service 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.

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

The *Contractor* shall also provide an organisation chart showing the personnel to be employed for the works, along with a detailed CV of all key personnel.

2.4. Provision of bonds and guarantees

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

The *Employer* may withhold payment of amounts due to the *Contractor* until the bond or guarantee required in terms of this contract has been received and accepted by the person notified to the *Contractor* by the *Service 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.

2.5. Documentation control

As per the approved Quality Plan

2.6. Invoicing and payment

Provision of Maintenance and Repairs the Faults on the 6.6kV to 33kV medium-voltage (MV) XLPE and PILC-insulated Cables by Terminating, Laying and Jointing in Gauteng Cluster, for a period of 5 years, on an "as and when" required basis
 CONTRACT NUMBER _____

Within one week of receiving a payment certificate from the *Service 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 *Service Manager's* payment certificate.

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

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

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

General Information	X
- No Pro-forma Invoice	
- Check Vendor number against the Address and name on Tax invoice	
- Insert the Vendor number on Tax invoice (Top right hand corner)	
- Bank details must be on the invoice or on a attach sheet, but it does not require a bank stamp just a letter)	
- Check banking details on invoice against SAP system. If more than one banking account check bank account against banking details on invoice. If banking details not on invoice, write the bank code next to the vendor account (bank code 0002)	
- Check Vendor VAT number against the vendor master. (FK03) If VAT number not on master records, prepare a list and forward to Vendor Management to check and update the vendor master records	
- No fax copies of Tax invoices allowed	
- No copies of Tax invoices allowed unless originally printed by the Vendor if a photocopy tax invoice, it must be an original "certified copy" (i.e. not a copy of a "certified copy" invoice) from the vendor and check in system if not previously be paid. Put stamp "not previously paid" on invoice and sign.	
- Ensure that date received stamp is clear on invoice	
- Stamp all Invoices with the Vat stamp, complete and sign (only when VAT is applicable)	
- The stamp should not be stamped over any written information	
- When scanning invoice, check the quality before linking in SAP (inboxes)	
With Reference Invoices	X
- Goods receipt must be done (payment with reference)	
- Ensure that the SAP purchase order number is clear and correct on the invoice	
- GR number to be written on the Invoices	
- If multiple lines on invoice write the line number of the order against the line to ensure that the processors match the correct lines (to ensure that 191100 is matched correctly)	

All supporting documentation needs to be provided with each claim which includes but not limited to; trip sheets approved by Service Manager & invoices for materials purchased as requested by Services Manager (delivery notes to accompany the claim for a specific site).

2.7. Contract change management

To be agreed between the Contractor and the Eskom Representative

2.8. Records of Defined Cost to be kept by the *Contractor*

All records and documentation are to be kept for a period not exceeding five years.

2.9. Insurance provided by the *Employer*

ACAR-As per annexure

2.10. Training workshops and technology transfer

N/A

2.11. Design and supply of Equipment

N/A

2.12. Things provided at the end of the *service period* for the *Employer's* use

2.12.1. Equipment

N/A

2.12.2. Information and other things

As per the Task Order

2.13. Management of work done by Task Order

A Task Order will be issued for tasks at hand as per descriptions from the Employer's Representative who will be managing this contract on the behalf of the *Employer*.

3. Health and safety, the environment and quality assurance

3.1. Health and safety risk management

The *Contractor* shall comply with the health and safety requirements contained as per tender enquiry attachment below, copy will be sent with tender invitation.



SHE SPECIFICATION
Provision for Maintainer

3.2. Environmental constraints and management

The *Contractor* shall comply with the environmental criteria and constraints as per tender enquiry attachment below, copy will be sent with tender invitation. All decommissioning performed by the contractor shall be done in accordance with the environmental Maintenance Management plan and Environmental Management Procedure.



MV HV Cables in
Gauteng Specification

3.3. Quality assurance requirements

The *Contractor* shall comply with quality specification and constraints as per tender enquiry attachment, copies will be sent with tender invitation.



240-109253698 CQP
Template 2016.docx



240-109253302 ITP
Template 2016.docx

4. Procurement

4.1. People

4.1.1. Minimum requirements of people employed

Refer to conditions of Tender, SHE Specification and Construction Regulations.

4.1.2. BBBEE and preferencing scheme

The criteria set out as per the Invitation to Tender shall apply.

4.1.3. SD&L

Refer to annexure

4.2. Subcontracting

4.2.1. Preferred subcontractors

There is no preferred contractor, but all preferred subcontractors need to be approved by Eskom

4.2.2. Subcontract documentation, and assessment of subcontract tenders

Subcontractors need to be approved by Eskom

4.3. Plant and Materials

4.3.1. Specifications

Medium Voltage Cables shall comply with SANS 97 or SANS 1339

4.3.2. Correction of defects

The *Contractor* shall guarantee workmanship on all work performed for up to 2 years after formal completion and formal handover of work performed on Eskom assets, back to Eskom. Should any material or asset failure or deterioration occur, then the contractor shall replace or reinstate the material or asset at its own cost. The *Contractor* shall also perform labour to replace or reinstate the material or asset at its own cost. This condition becomes null and void if it can be proven that the failure or deterioration was not due to *Contractor* negligence. Without any proof, the condition remains in full force.

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

Material will be issued as per fault identification and derived scope of work.

5. Working on the Affected Property

5.1. *Employer's* site entry and security control, permits, and site regulations

The *Contractor* shall ensure a Responsible person (in terms of the ORMVS) is available and on-site, during site meetings, inspections, work being performed or any other instances where the *Contractor's* employees

are on-site. *Contractor* to acquire all Eskom Permits, as well as other permits from other statutory bodies of which includes but is not limited to the following:

- National roads agency;
- Provincial and/or metropolitan roads agencies;
- Dept. of Water and Forestry;
- Dept. of Environmental Affairs and Tourism;
- Local metropolitan / municipal town councils; and
- Any other statutory body that may be considered a stakeholder

b) Applications to the water, rail and local authorities shall be made in accordance with 34-820, 34-1812 and 34-822.

5.2. People restrictions, hours of work, conduct and records

A Task Order will be issued for tasks at hand as per descriptions from the Employer's Representative who will be managing this contract on the behalf of the Employer.

- a) The Contractor shall ensure that Eskom approved and specified PPE is worn by all employees during site meetings, inspections, work being performed or any other instance where the Contractor's employees are on-site.
- b) The Contractor shall ensure that all contractor specific Risk Assessment Procedures, Quality Management Systems, Health and Safety Specifications, Environmental Plans, Safety Inspections, OHSA appointments, and Non-Conformance Process are in place and available on-site and can be presented to Eskom when requested to do so.
- c) Contractor to keep record of working hours and number of staff in the project file. To also file records of subcontractors.

5.3. Cooperating with and obtaining acceptance of Others

The Contractor shall ensure the wayleaves and approvals from all statutory bodies, non-statutory bodies, service providers, or any other third parties for the new / existing cable route obtained from Eskom have not expired, prior to and during to construction. The Contractor shall ensure wayleaves and approvals are renewed as necessary, throughout the duration of the construction or site works until the work is completed and Eskom assets are formally handed back to Eskom. The Contractor shall furthermore ensure that all requirements from the statutory bodies, non-statutory bodies, service providers, or any other third parties are adhered to, and will complete and submit project close out and project completion documentation as may be required by these statutory bodies, non- statutory bodies, service providers, or any other third parties to them. Copies of these documents to be submitted to Eskom as well.

Eskom Permits and permits from other statutory bodies from which permission may have to be obtained are:

- National roads agency;
- Provincial and/or metropolitan roads agencies;

Dept. of Water and Forestry;

- Dept. of Environmental Affairs and Tourism;

Local metropolitan / municipal town councils; and

- Any other statutory body that may be considered a stakeholder.

5.4. Records of *Contractor's* Equipment

Records of Contractor's equipment are to be kept on file on site whereby the Project Manager has access to this file at all times.

5.5. Equipment provided by the *Employer*

The *Employer* provides no equipment to the contractor

5.6. Site services and facilities

5.6.1. Provided by the *Employer*

No site services and facilities will be supplied by the Employer for the execution and completion of this project.

5.6.2. Provided by the *Contractor*

The *Contractor* shall provide all facilities and services needed for execution of the works as the provision of Preliminaries and General and Bill of Quantities.

5.7. Control of noise, dust, water and waste

The *Contractor* must comply with SHE and Environmental Requirements

5.8. Hook ups to existing works

The *Contractor* must comply with SHE and Environmental Requirements

5.9. Tests and inspections

5.9.1. Description of tests and inspections

The Contractor shall perform soil compaction testing in all areas where reinstatement occurred and/or where required by statutory bodies, non-statutory bodies, service providers, or any other third parties.

5.9.2. Materials facilities and samples for tests and inspections

For Eskom soil compaction testing, a DCP (dynamic cone penetrometer) must be used. Five blows on a given test with this device may not exceed 150mm in soil depth. (Equivalent to 90% Mod AASHTO.) If the depth is exceeded, then the Eskom engineer must be notified immediately. For statutory bodies, non-statutory bodies, service providers, or any other third parties, the Contractor shall adhere and comply to the requirements of these bodies, service providers, or any other third parties.

List of drawings

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.

Drawing number	Revision	Title