NEC3 Engineering & Construction Contract

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

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

for **The provision of High Voltage (HV) Lines Construction project within Gauteng Cluster to establish multiple contracts on "an as and when required" basis over a period of 12 months.**

Contents:		**No of pages**
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Part C2	**Pricing Data**	**[●]**
Part C3	**Scope of Work**	**[●]**
Part C4	**Site Information**	**[●]**

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

Part C1: Agreements & Contract Data

Contents:

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C1.1 Form of Offer & Acceptance

Offer

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

The provision of High Voltage (HV) Lines Construction project within Gauteng Cluster to establish multiple contracts on "an as and when required" basis over a period of 12 months.

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

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

Options B	The offered total of the Prices exclusive of VAT is	**Rate-Based**
	Sub total	**Rate-Based**
	Value Added Tax @ 15% is	**Rate-Based**
	The offered total of the amount due inclusive of VAT is[1]	**Rate-Based**
	(in words) **Rate-Based**	

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

Signature(s) .....

Name(s) .....

Capacity .....

For the tenderer: .....

(Insert name and address of organisation)

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

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

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

Acceptance

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

The terms of the contract, are contained in:

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

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

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

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

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy signed between them of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s) .....

Name(s) .....

Capacity .....

for the Employer **Eskom Holdings SOC Ltd, Megawatt Park, Maxwell Drive, Sandton, Johannesburg, 2199**

(Insert name and address of organisation)

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

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

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

Note:

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

No.	Subject	Details
1	**[●]**	**[●]**
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	.....	**Eskom Holdings SOC Ltd, Megawatt Park, Maxwell Drive, Sandton, Johannesburg, 2199**
On behalf of	..... *(Insert name and address of organisation)*	..... *(Insert name and address of organisation)*
Name & signature of witness	.....	.....
Date	.....	.....

C1.2 ECC3 Contract Data

Part one - Data provided by the *Employer*

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

Clause	Statement	Data
1	**General**	
	The *conditions of contract* are the core clauses and the clauses for main Option	
		B: Priced contract with bill of quantities
	dispute resolution Option	**W1: Dispute resolution procedure**
	and secondary Options	
		X2 Changes in the law
		X5: Sectional Completion
		X7: Delay damages
		X13: Performance Bond (If Applicable)
		X15: Limitation of *Contractor's* liability for design to reasonable skill and care
		X16: Retention
		X17: Low performance damages
		X18: Limitation of liability
		Z: *Additional conditions of contract*
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The *Employer* is (Name):	**Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa**
	Address	**Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg**
10.1	The *Project Manager* is: (Name)	**TBC**
	Address	**[●]**
	Tel	**[●]**
	Fax	**[●]**
	e-mail	**[●]**

10.1	The *Supervisor* is: (Name)	**TBC**
	Address	**[●]**
	Tel No.	**[●]**
	Fax No.	**[●]**
	e-mail	**[●]**
11.2(13)	The *works* are	**The Construction of New and Refurbishment of Existing High Voltage Lines from 44kV to 132kV within the Gauteng Cluster.**
11.2(14)	The following matters will be included in the Risk Register	• **Cost overruns due to unpredictable surface conditions.** • **Possibility of existing services not indicated on the wayleave.** • **Completion date.** • **Late material delivery dates.** • **Delays in outage approvals.** • **Servitude encroachments.** • **Community involvement.**
11.2(15)	The *boundaries of the site* are	**All projects to be executed in terms of this contract will be executed at various sites within the Gauteng Operating Unit.**
11.2(16)	The Site Information is in	**Part 4: Site Information**
11.2(19)	The Works Information is in	**Part 3: Scope of Work and all documents and drawings to which it makes reference.**
12.2	The *law of the contract* is the law of	**the Republic of South Africa**
13.1	The *language of this contract* is	**English**
13.3	The *period for reply* is	**1 weeks**
2	**The *Contractor's* main responsibilities**	**Data required by this section of the core clauses is provided by the *Contractor* in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.**
3	**Time**	
11.2(3)	The *completion date* for the whole of the *works* is	**TBC, duration of the contract is 12 months**
11.2(9)	The *key date*s and the *condition*s to be met are:	***Condition* to be met** / ***key date***
		1 **Access dates will be specified in the Project Specific Agreement for any project executed in terms of this contract.** / **[●]**
30.1	The *access dates* are:	**Part of the Site** / **Date**

		1	**Access dates will be specified in the Project Specific Agreement for any project executed in terms of this contract.**	**[●]**
31.1	The *Contractor* is to submit a first programme for acceptance within	**1 week of the Contract Date.**		
31.2	The *starting date* is	**TBC**		
32.2	The *Contractor* submits revised programmes at intervals no longer than	The period between project progress meetings		
35.1	The *Employer* is not willing to take over the *works* before the Completion Date.			
4	**Testing and Defects**			
42.2	The *defects date* is	**52 weeks after Completion of the whole of the *works* per project or section thereof if sectional completion is applicable**		
43.2	The *defect correction period* is	**Within 1 week upon notification of defect.**		
5	**Payment**			
50.1	The *assessment interval* is	**between the 15th and 20th day of each successive month.**		
51.1	The *currency of this contract* is the	**South African Rand.**		
51.2	The period within which payments are made is	**4 weeks.**		
51.4	The *interest rate* is	**Zero rands above the publicly quoted prime rate of interest (calculated on a 365 day year) charged from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands**		
6	**Compensation events**			
60.1(13)	The place where weather is to be recorded is:	**The Site Establishment**		
	The *weather measurements* to be recorded for each calendar month are,	**the cumulative rainfall (mm)** **the number of days with rainfall more than 10 mm** **the number of days with minimum air temperature less than 0 degrees Celsius** **the number of days with snow lying at 09:00 hours South African Time** **and these measurements:**		
	The *weather measurements* are supplied	**The Contractor using actual weather readings**		

	by	**from the established site.**
	The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at:	**The nearest weather station of the South African Weather Service to the site.**
	and which are available from:	**the South African Weather Bureau and included in Annexure A to this Contract Data provided by the *Employer***
7	**Title**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.**
8	**Risks and insurance**	
80.1	These are additional *Employer*'s risks	**None**
9	**Termination**	**Refer to the Clause 9 of the NEC3 ECC3.**
10	**Data for main Option clause**	
B	**Priced contract with bill of quantities**	
60.6	The *method of measurement* is	**As stated in Part C2.1, Pricing Assumptions.**
11	**Data for Option W1**	
W1.1	The *Adjudicator* is	**the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see www.ice-sa.org.za). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).**
	Address	**[●]**
	Tel No.	**[●]**
	Fax No.	**[●]**
	e-mail	**[●]**
W1.2(3)	The *Adjudicator nominating body* is:	**the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See www.ice-sa.org.za) or its successor body.**
W1.4(2)	The *tribunal* is:	**arbitration.**
W1.4(5)	The *arbitration procedure* is	**the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.**

	The place where arbitration is to be held is	**Johannesburg, South Africa**
	The person or organisation who will choose an arbitrator - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is	**the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.**

12 Data for secondary Option clauses

X2	**Changes in the law**	**Refer to the secondary clause X2 of the NEC3 ECC3.**
X5	**Sectional Completion**	
X5.1	The *completion date* for each *section* of the *works* is:	The completion date for each section of the work will be specified in the Project Specific Agreement for any project executed under this contract.
X5 & X7	**Sectional Completion and delay damages used together**	The delay damage for each section of the work will be specified in the Project Specific Agreement for any project executed in terms of this contract and will be relevant to the specific project being executed.
X13	**Performance bond**	
X13.1	The amount of the performance bond is	The percentage will be determined by the outcome of the financial analysis (if applicable).
X15	**Limitation of the *Contractor*'s liability for his design to reasonable skill & care**	**Refer to secondary clause X15 of the NEC3 ECC3.**
X16	**Retention (not used with Option F)**	
X16.1	The *retention free amount* is	**None (Zero Rand)**
	The *retention percentage* is	**8.5%**
X18	**Limitation of liability**	
X18.1	The *Contractor*'s liability to the *Employer* for indirect or consequential loss is limited to:	**The sum of the loss as a result of any action arising by any negligent act by any person under the contractor's employment or any person performing work under the direct supervision of the contractor.**
X18.2	For any one event, the *Contractor*'s liability to the *Employer* for loss of or damage to the *Employer*'s property is limited to:	**the amount of the deductibles relevant to the event described in the insurance policy format selected in the date for clause 84.1 above which policy is available on**
X18.3	The *Contractor*'s liability for Defects due to his design which are not listed on the Defects Certificate is limited to	**The greater of** • **the total of the Prices at the Contract Date and** • **the amounts excluded and unrecoverable from the *Employer*'s assets policy for correcting the Defect (other than the**

		resulting physical damage which is not excluded) plus the applicable deductible as at contract date.
X18.4	The *Contractor*'s total liability to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	**the total of the Prices other than for the additional excluded matters.** **The *Contractor's* total liability for the additional excluded matters is not limited.** **The additional excluded matters are amounts for which the *Contractor* is liable under this contract for** • **Defects due to his design which arise before the Defects Certificate is issued,** • **Defects due to manufacture and fabrication outside the Site,** • **loss of or damage to property (other than the *works*, Plant and Materials),** • **death of or injury to a person and** • **infringement of an intellectual property right.**
X18.5	The *end of liability date* is	**7 years after the *defects date* for latent Defects and** **(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.** **A latent Defect is a Defect which would not have been discovered on reasonable inspection by the *Employer* or the *Supervisor* before the *defects date*, without requiring any inspection not ordinarily carried out by the *Employer* or the *Supervisor* during that period. If the *Employer* or the *Supervisor* do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the *Employer* or the *Supervisor* to have discovered the Defect.**
Z	**The *Additional conditions of contract* are**	**Z1 to Z15 always apply.**

Z1 Cession delegation and assignment

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

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

Z2 Joint ventures

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

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

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

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

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

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

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

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

Z4 Confidentiality

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

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

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

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

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

Z5 Waiver and estoppel: Add to core clause 12.3:

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

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

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

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

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

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

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

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

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

Z8 Notifying compensation events

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

Z9 *Employer's* limitation of liability

Z9.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is

limited to R0.00 (zero Rand)

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

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

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

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

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

Z12 Ethics

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

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

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

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

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

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

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

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

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

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

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

or in any other similar process, of such Prohibited Action before the *Employer* can terminate the *Contractor*'s obligation to Provide the Services for this reason.

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

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

Z13 Insurance

Z 13.1 Replace core clause 84 with the following:

Insurance cover 84

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

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

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

INSURANCE TABLE A

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

of and in the course of their employment in connection with this contract	law

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

INSURANCE TABLE B

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

Z14 Nuclear Liability

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

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

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

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

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

Z15 Asbestos

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

AAIA means approved asbestos inspection authority.

ACM means asbestos containing materials.

AL means action level, i.e. a level of 50% of the OEL, i.e. 0.1 regulated asbestos fibres per ml of air measured over a 4 hour period. The value at which proactive actions is required in order to control asbestos exposure to prevent exceeding the OEL.

Ambient Air means breathable air in area of work with specific reference to breathing zone, which is defined to be a virtual area within a radius of approximately 30cm from the nose inlet.

Compliance Monitoring means compliance sampling used to assess whether or not the personal exposure of workers to regulated asbestos fibres is in compliance with the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.

OEL means occupational exposure limit.

Parallel Measurements means measurements performed in parallel, yet separately, to existing measurements to verify validity of results.

Safe Levels means airborne asbestos exposure levels conforming to the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.

Standard means the *Employer*'s Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles.

SANAS means the South African National Accreditation System.

TWA means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the baseline of a 4 hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA.

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

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

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

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

Z15.5 The *Contractor*'s personnel are entitled to stop working and leave the contaminated area forthwith until such time that the area of concern is declared safe by either Compliance Monitoring or an AAIA approved control measure intervention, for example, per the emergency asbestos work plan, if applicable.

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

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

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

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

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

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

C1.2 Contract Data

Part two - Data provided by the *Contractor*

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

Clause	Statement	Data
10.1	The *Contractor* is (Name): Address Tel No. Fax No.	
11.2(8)	The *direct fee percentage* is The *subcontracted fee percentage* is	**%** **%**
11.2(18)	The *working areas* are the Site and	
24.1	The *Contractor's* key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job Responsibilities: Qualifications: Experience:	**CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .**
11.2(3)	The *completion date* for the whole of the *works* is	
11.2(14)	The following matters will be included in the Risk Register	
11.2(19)	The Works Information for the *Contractor*'s design is in:	
31.1	The programme identified in the Contract Data is	
B	**Priced contract with bill of quantities**	

11.2(21) 11.2(31)	The *bill of quantities* is in The tendered total of the Prices is	**PART 2: PRICING DATA C2.2** **Rate-Based (in figures)** **Rate-Based (in words), excluding VAT**		
	Data for Schedules of Cost Components	*Note "SCC" means Schedule of Cost Components starting on page 60, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC3 (April 2013).*		
B	**Priced contract with bill of quantities**	**Data for the Shorter Schedule of Cost Components**		
41 in SSCC	The percentage for people overheads is:	**%**		
21 in SSCC	The published list of Equipment is the last edition of the list published by The percentage for adjustment for Equipment in the published list is	**Minus %**		
22 in SSCC	The rates of other Equipment are:	**Equipment**	**Size or capacity**	**Rate**
61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are **Note: Hourly rates are estimated 'cost to company of the employee' and not selling rates.** **Please insert another schedule if foreign resources may also be used**	**Category of employee**	**Hourly rate**	
62 in SSCC	The percentage for design overheads is	**%**		
63 in SSCC	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:			

C1.3 Forms of Securities

Pro formas for Bonds & Guarantees

For use with the NEC3 Engineering & Construction Contract

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

Option X13: Performance Bond

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

Option X16: Retention (not used with Option F)

The *Contractor* may provide a Retention Money Guarantee in the form stated here. When the *Employer* receives and accepts a Retention Money Guarantee exactly in the form stated he will instruct the *Project Manager* not to assess any amount be retained in terms of secondary Option X16.

The *Contractor* shall guarantee his ASGI-SA Obligations by providing the *Employer* with an ASGI-SA Guarantee in the form provided here.

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

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

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

Eskom Holdings SOC Ltd
Megawatt Park
Maxwell Drive
Sandton
Johannesburg Date:

Dear Sirs

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

Performance Bond – Demand Guarantee: *[Drafting Note: Name of Contractor to be inserted]*

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

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

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

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

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

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

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

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

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

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

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

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

3.1 be signed on behalf of Eskom by a Group Executive, Divisional Executive, Senior General Manager, General Manager or its delegate;

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

3.3 state that the Demand Amount is payable to Eskom in the circumstances contemplated in the Contract.

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

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

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

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

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

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

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

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

8. This Guarantee:

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

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

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

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

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

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

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

Signed at _____ Date _____

For and behalf of the Bank

Bank Signatory: _____ Bank Signatory: _____

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

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

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

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

Dear Sirs

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

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

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

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

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

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

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

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

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

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

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

"Project" - means the……..

At the instance of the Contractor, we the undersigned _____ and _____, in our respective capacities as _____ and _____ of the Bank, and duly authorized thereto, confirm that we hold the Guaranteed Sum at the disposal of Eskom, as security for the proper performance by the Contractor of all of its obligations in terms of and arising from the Contract and hereby undertake to pay to Eskom, on written demand from Eskom received prior to the Expiry Date, any sum or sums not exceeding in total the Guaranteed Sum.

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

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

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

state that the Contractor has failed to carry out his obligation(s) to rectify certain defect(s) for which he is responsible under the Contract (and the nature of such defect(s)) alternatively that the Demand

Amount is payable to Eskom in the circumstances contemplated in the Contract.

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

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

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

The Bank's obligations in terms of this Guarantee:

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

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

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

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

This Guarantee:

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

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

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

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

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

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

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

Signed at _____ Date _____ Bank's seal or stamp

For and behalf of the Bank

Bank Signatory: _____ Bank Signatory: _____

Witness: _____ Witness: _____

Pro forma ASGI-SA Guarantee

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

Eskom Holdings Limited
Megawatt Park
Maxwell Drive
Sandton
Johannesburg Date:

Dear Sirs

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

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

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

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

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

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

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

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

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

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

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

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

1.9 "Project" – means the ……

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

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

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

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

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

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

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

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

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

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

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

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

8. This Guarantee:

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

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

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

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

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

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

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

Signed at _____ Date _____

For and behalf of the Bank

Bank Signatory: _____ Bank Signatory: _____

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

PART 2: PRICING DATA
ECC3 Option B

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option B	3
C2.2	The *bill of quantities*	1

C2.1 Pricing assumptions: Option B

How work is priced and assessed for payment

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

Identified and defined terms 11 11.2 (21) The Bill of Quantities is the *bill of quantities* as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.

(28) The Price for Work Done to Date is the total of

- the quantity of the work which the *Contractor* has completed for each item in the Bill of Quantities multiplied by the rate and
- a proportion of each lump sum which is the proportion of the work covered by the item which the *Contractor* has completed.

Completed work is work without Defects which would either delay or be covered by immediately following work.

(31) The Prices are the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities.

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

Function of the Bill of Quantities

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

Guidance before pricing and measuring

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

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

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

plus Fee is used.

Measurement and payment

Symbols

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

Abbreviation	Unit
%	percent
h	hour
ha	hectare
kg	kilogram
kl	kilolitre
km	kilometre
km-pass	kilometre-pass
kPa	kilopascal
kW	kilowatt
l	litre
m	metre
mm	millimetre
m^2	square metre
m^2-pass	square metre pass
m^3	cubic metre
m^3-km	cubic metre-kilometre
MN	meganewton
MN.m	meganewton-metre
MPa	megapascal
No.	number
sum	Lump sum
t	tonne (1000kg)

General assumptions

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

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

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

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

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

Departures from the *method of measurement*

Amplification of or assumptions about measurement items

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

C2.2 the *bill of quantities*

Preliminaries & General				
Item	**Reference Drawing**	**Description**	**Unit**	**Rate**
		Every Invoice to be signed and verified by Quantity Surveyor for payment.		
1		**Site Establishment**		
1.1		Overheads for project (This includes Site Establishment Overhead Costs, Office Overheads, Administration Costs etc.) Total Labour Value	%	
1.2		Health and Safety Management, OHSA appointments, PPE etc. Total Labour Value	%	
1.3		Quality & Contract Management. Total Labour Value	%	
1.4		Environmental Management (Compliance to Environmental Management Plan; Compliance to Statutory Requirements; Management of incidents; Handling and disposal of waste; Environmental Reporting;)	%	
1.5		De-establishment & Rehabilitation of Site	Sum	
1.6		Security	Week	
1.7		Facilities for security (Guard house, toilet etc.)	Month	
1.8		CLO (If required)	Month	
1.9		Safety Officer (SACPCMP registered)	Day	
1.10		Responsible person	Day	
1.11		Security	Month	

	Transport	Unit	Rates
1.1	LDV	km	
1.2	Personnel Transport for Staff	km	
1.3	10 m³ Tipper Truck	km	
1.4	6 m³ Tipper Truck	km	
1.5	Transport Truck 2-4 ton	km	
1.6	Transport Truck 5-8 ton	km	
1.7	Transport Truck 5-8 ton with crane	km	
1.8	Transport Truck 9-14 ton	km	
1.9	Transport Truck 9-14 ton with crane	km	
1.10	Lowbed	km	

Activity Stage 1: Preliminary & General, Environmental, Health & Safety and Site establishment					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
1.1		**Preliminary & General cost: VOLUME 3 PART 2 - Activity Stage 1.1**			
The preliminaries / P&G section will be included by "Contracts Management" as per instruction by the Contracts manager					
		Total Preliminaries & General			
Note		**WHERE THE CELL IS GREYED OUT, A RATE IS NOT REQUIRED**		-	-
		WHERE THERE IS COST PLUS FEE NO RATE IS REQUIRED			
Activity Stage 2: Establish construction access					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
2.1		**Supply, transport and install of new power line servitude gates: VOLUME 3 PART 2 - Activity Stage 2.1**			
2.1.1	D-FS-12051 Rev. 5 Sht. 1 - 5	Complete Supply Transport and Installation of **new 4,5m wide small stock fence** servitude gates, ***(Item subjected to re-measurement)***	each		
2.1.2	D-FS-13409 Rev. 1 Sht. 1 - 5	Complete Supply Transport and Installation of **new 4,5m wide game fence** servitude gates, ***(Item subjected to re-measurement)***	each		
2.1.3		Complete Supply Transport and Installation of **servitude gate labels** ***(Item subjected to re-measurement)***	each		
			Sub-Total 2.1		
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**

2.2	**Complete refurbishment and replacement of existing power line servitude gates: VOLUME 3 PART 2 - Activity Stage 2.2**				
2.2.1		Complete dismantling and removal from site of existing servitude/access gates ***(Item subjected to re-measurement)***	each		
2.2.2	D-FS-12051 Rev. 5 Sht. 1 - 5	Setting-out and complete re-installation of **new Standard 4,5m wide small stock fence** servitude/access gates**, *(Item subjected to re-measurement)***	each		
2.2.3		Complete refurbishment of private access gates outside the power line servitude and used by the *Contractor* to gain construction access ***(Item subjected to re-measurement)***	each	Cost plus fee	Cost plus fee
2.2.4	D-FS-13409 Rev. 1 Sht. 1 - 5	Setting-out and complete re-installation of **new Standard 4,5m wide game** fence servitude/access gates**, dwg: D-FS-13409 Rev. 1 Sht. 1 - 5 *(Item subjected to re-measurement)***	each		
			Sub-Total 2.2		
2.3	**Complete establishment of property construction acess: VOLUME 3 PART 2 - Activity Stage 2.3**				
2.3.1		Use and maintenance of private access roads for construction purposes ***(Item subjected to re-measurement)***	m		
2.3.2		Establishment, use and maintenance of construction access on the power line servitude ***(Item subjected to re-measurement)***	m		
			Sub-Total 2.3		
2.4	**Closure of construction access: VOLUME 3 PART 2 - Activity Stage 2.4**				
2.4.1		Closure of all temporary construction roads, where required	sum	Cost plus fee	Cost plus fee
2.4.2		Complete construction of erosion protection measures as instructed by the *Clerk of Works* ***(Item subjected to re-measurement)***	sum	Cost plus fee	Cost plus fee
			Sub-Total 2.4		

2.5	**Bush clearing and cutting of trees: VOLUME 3 PART 2 - Activity Stage 2.6**				
2.5.1	ESKASABG 3 Rev1 & DISTIZAC2	Locating and mark all endangered tree positions, where permits for cutting are required. ***(Item subjected to re-measurement)***	each		
2.5.2		Obtaining of special permits for the cutting of endangered trees and shrubs ***(Item subjected to re-measurement)***	each		
2.5.3		Cut and chemically treat larger trees with **trunk diameters 250-500mm - Tree trunk and branches to be cut in pieces not exceeding 3,0m in length** ***(Item subjected to re-measurement)***	each		
2.5.4		Cut and chemically treat large trees with **trunk diameters 500-750mm - Tree trunk and branches to be cut in pieces not exceeding 3,0m in length** ***(Item subjected to re-measurement)***	each		
2.5.5		Cut and chemically treat large trees with **trunk diameters 750-1250mm - Tree trunk and branches to be cut in pieces not exceeding 3,0m in length** ***(Item subjected to re-measurement)***	each		
2.5.6		Replacement of endangered felled trees at allocated positions, where required ***(Item subjected to re-measurement)***	each	Cost plus fee	
2.5.7		Cut and chemically treat **scattered** trees, bush & shrubs **min. 15,0m wide** strip ***(Item subjected to re-measurement)***	m		
2.5.8		Cut and chemically treat **dense** trees, bush & shrubs **min. 15,0m wide** strip ***(Item subjected to re-measurement)***	m		
2.5.9		Cutting and chemically treat small trees, bush & shrubs at **radius 25m circles** at large foot print structure sites ***(Item subjected to re-measurement)***	each		
			Sub-Total 2.5		
			TOTAL Activity Stage 2 CARRIED FORWARD TO SUMMARY		

Activity Stage 3: Survey activities (Survey Activities to be done by Employer's Land Development Department)					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
3.1	**Pegging of line route, structure setting-out & stays positions: VOLUME 3 PART 2 - Activity Stage 3.1**				
3.1.1		Pegging of line bend positions - **Dia 20mm** Steel peg	each		
3.1.2		Pegging of in-line strain positions - **Dia 10mm** Steel peg	each		
3.1.3		Pegging mono-pole structure centre positions (**Excluding H-pole, 2-pole, 3-pole structures & lattice towers**) - **RED** wooden peg	each		
3.1.4		Pegging "**H-Pole**" structure centre positions, **WHITE** wooden peg	each		
3.1.5		Pegging "**2-Pole**"structure centre positions, **WHITE** wooden peg	each		
3.1.6		Pegging "**3-Pole**"structure centre positions, **WHITE** wooden peg	each		
3.1.7		Pegging "**Lattice tower**" centre positions, **WHITE** wooden peg	each		
3.1.8		Pegging "**H-Pole**" structure leg positions - **RED** wooden peg	each		
3.1.9		Pegging "**2-Pole**" structure leg positions - **RED** wooden peg	each		
3.1.10		Pegging "**3-Pole**" structure leg positions - **RED** wooden peg	each		
3.1.11		Pegging "**Lattice tower**" leg positions - **RED** wooden peg	each		
3.1.12		Pegging all structure permanent stay positions - **BLUE** wooden peg	each		
3.1.13		Pegging all structure temporary stay positions - **BLUE/WHITE** wooden peg	each		
3.1.14		Pegging all structure **Bi-sector** reference peg positions - **WHITE** wooden peg	each		
3.1.15		Pegging all structure **Line peg** positions - **WHITE** wooden peg	each		
			Sub-Total 3.1		

3.2	**Marking of servitude and access gates: VOLUME 3 PART 2 - Activity Stage 3.2**				
3.2.1	D-FS-12051 Rev. 5 Sht. 1 - 5 D-NT 00004	Setting-out and complete installation of **new Standard 4,5m wide small stock fence** gates in fences without any servitude gates, dwg:***(Item subjected to re-measurement)***	each		
3.2.2	D-FS-13409 Rev. 1 Sht. 1 - 5 D-NT 00004	Setting-out and complete installation of **new Standard 4,5m wide game fence** gates in fences without any servitude gates, dwg: ***(Item subjected to re-measurement)***	each		
			Sub-Total 3.2		
			TOTAL Activity Stage 3 CARRIED FORWARD TO SUMMARY		

Activity Stage 4: Construction of temporary By-pass Lines					
Item	**Reference Drawing**	**Description**	**Unit**		
4.1	**Complete installation and dressing of temporary By-pass structures, refer to: Activity Stage 4.1 & 4.2 (All relevant items measured in referred Activity Stages)**				
4.1.1		Supply and transport of by-pass material, see PART .... Items ….	ea		
			Sub-Total 4.2.1		
4.2	**Complete removal of temporary By-passes …: VOLUME 3 PART 2 - Activity Stage 4.2 & 4.3**				
4.2.1		Disconneting Existing Structures / Line Discription….	each		
			Sub-Total 4.2.1		
4.2.2		Complete disconneting, dismantling and removal of bypass line Discription….	ea		
			Sub-Total 4.2.2		

Total Activity 4 Total Stay Rod and Foundations Installation - Carried to BoQ Summary		

Activity Stage 5: Foundations					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
5.1	**Geotechnical investigation and soil/foundation types nominations: VOLUME 3 PART 2 - Activity Stage 5.1**				
5.1.1		Excavating and backfilling of soil profile test holes for structure foundation soil type nominations	each		
5.1.2		Nomination of soil types for structure foundations and submission of records for *Employer's* approval	each		
			Sub-Total 5.1		

5.2	**Foundations Design or Verification: VOLUME 3 PART 2 - Activity Stage 5.2**				
The appointment of a professional civil engineer will be the responsibility of the contractor and will be paid by the contractor - costs must be included in the tender. Foundation designs are provided for all possible soil types but needs to be verified and approved by a Prof Civil Engineer for each installation. Should the contractor wish to construct a foundation of a different design, all design drawings will be submitted to Eskom for acceptance. The contractor will accept full responsibility for these designs. Eskom will not pay for these designs unless the submitted Eskom designs cannot be used due to prevailing site conditions. This decision will be taken by the Engineer. Foundation designs for all structures in accordance with 0501KR-01 rev 1, 240-47172520 (TRMSCAAC5) and SCSASABK8 by a registered professional in each type of soil (type 1, 2, 3, 4 soft rock and hard rock). Designs to be Eskom Copyright.					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Verify foundations for the nominated soil type 1, 2, 3, 4, Sof Rock na Hard Rock for 247 Lattice structures					
247 Lattice Structure - Foundations Design or Verify the Reference Foundation					
Intermediate Suspension Lattice Structures 247 A					

5.2.1	0.69-247A T1-T4, SR & HR	247A 0 degree suspension structure, 132kV lattice steel. 14.1m CAH	ea		
5.2.2	0.69-247A T1-T4, SR & HR	247A 0 degree suspension structure, 132kV lattice steel. 17.1m CAH	ea		
5.2.3	0.69-247A T1-T4, SR & HR	247A 0 degree suspension structure, 132kV lattice steel. 18.1m CAH	ea		
5.2.4	0.69-247A T1-T4, SR & HR	247A 0 degree suspension structure, 132kV lattice steel. 19.1m CAH	ea		
0-30 degree Strain Lattice Structures 247B					
5.2.5	0.69-247B T1-T4, SR & HR	247B 0-40 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		
5.2.6	0.69-247B T1-T4, SR & HR	247B 0-40 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.2.7	0.69-247B T1-T4, SR & HR	247B 0-40 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
40-90 degree Strain Lattice Structures 247C					
5.2.8	0.69-247C T1-T4, SR & HR	247C 40-90 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		
5.2.9	0.69-247C T1-T4, SR & HR	247C 40-90 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.2.10	0.69-247C T1-T4, SR & HR	247C 40-90 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
0-40 degree Terminal Lattice Structures 247C					

5.2.11	0.69-247C T1-T4, SR & HR	247C 0-40 degree terminal structure, 132kV lattice steel. 14.1m CAH	ea		

2-WT/15049 Intermediate 0 - 2º Suspension Mono-Pole Double Circuit Structure - Foundations Design or Verify the Reference Foundation					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - 0 - 2º Suspension Mono-Pole Double Circuit Structure Foundations					
5.2.12	0.69/CFS/20M2100/ T1-T4, SR & HR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 20m (Plant 2.6m - Bottom Attachement 10.5m)	ea		
5.2.13	0.69/CFS/22M2301/ T1-T4, SR & HR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 22m (Plant 2.8m - Bottom Attachement 12.4m)	ea		
5.2.14	0.69/CFS/24M2601/ T1-T4, SR & HR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 24m (Plant 3m - Bottom Attachement 14.2m)	ea		
5.2.15	0.69/CFS/26M2910/T1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 26m (Plant 3.2m - Bottom Attachement 16.0m)	ea		
5.2.16	0.69/CFS/2M3228/ T1-T4, SR & HR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 28m (Plant 3.4m - Bottom Attachement 17.8m)	ea		
5.2.17	0.69/CFS/2M3546/ T1-T4, SR & HR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 30m (Plant 3.6m - Bottom Attachement 19.6m)	ea		

Twin Kingbird/Bersfort Single Circuit Mono-Pole Structure - Foundations Design or Verify the Reference Foundation
2-WT/1294 Intermediate 0 - 2º Suspension
2-WT/1295 Strain 2º - 90º
2-WT/1296 Angle Strain 3-Pole 2º-90º
2-WT/1297 3-Pole Terminal
2-WT/1298 Inline Strain

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - Twin Kingbird/Bersfort Single Circuit Mono-Pole Structure - Foundations					
2-WT/1294 Intermediate 0 - 2º Suspension					
5.2.18	2-WT/1417 Sheet 1 2-WT/1418 Sheet 2&3 2-WT/1419 Sheet 1	Pole, St 132kV Susp 21m	ea		
5.2.19		Pole, St 132kV Susp 22m	ea		
5.2.20		Pole, St 132kV Susp 23m	ea		
5.2.21		Pole, St 132kV Susp 24m	ea		
5.2.22		Pole, St 132kV Susp 25m	ea		
5.2.23		Pole, St 132kV Susp 26m	ea		
5.2.24		Pole, St 132kV Susp 29m	ea		
2-WT/1295 Strain 2º - 90º					
5.2.25	2-WT/1417 Sheets 2 2-WT/1418 Sheet 1&3 2-WT/1419 Sheet 2	Pole, St 132kV Angle Strain (0°-90°) 20m	ea		
5.2.26		Pole, St 132kV Angle Strain (0°-90°) 22m	ea		
5.2.27		Pole, St 132kV Angle Strain (0°-90°) 23m	ea		
5.2.28		Pole, St 132kV Angle Strain (0°-90°) 24m	ea		
5.2.29		Pole, St 132kV Angle Strain (0°-90°) 28m	ea		
5.2.30		Pole, St 132kV Angle Strain (0°-90°) 30m	ea		
2-WT/1296 Angle Strain 3-Pole 2º-90º					
5.2.31	2-WT/1417 Sheets 3 2-WT/1418 Sheets 4 2-WT/1419 Sheet 2	3- Pole, St 132kV Strain 11.1m (2 x 11.1m & 1 x 9.1m)	ea		
5.2.32		3- Pole, St 132kV Strain 13.1m (2 x 13.1m & 1 x 11.1m)	ea		
5.2.33		3- Pole, St 132kV Strain 14m (2 x 14.1m & 1 x 12.1m)	ea		

5.2.34		3- Pole, St 132kV Strain 16.1m (2 x 16.1m & 1 x 14.1m)	ea		

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - Bersfort Single Circuit Mono-Pole Guided Structure - Foundations					
2-WT/1297 3-Pole Terminal					
5.2.35	2-WT/1417 Sheets 3 2-WT/1418 Sheets 4 2-WT/1419 Sheet 2	3- Pole Term St 132kV 14m (Include 3 poles of 14m long)	ea		
5.2.36		3- Pole Term St 132kV 16m (Include 3 poles of 16m long)	ea		

Bersfort Single Circuit Mono-Pole Guided Structure - Foundations Design or Verify the Reference Foundation
2-WT/1281 Guided Braced Intermediate / Suspension
2-WT/1284 Angle Strain 0 - 90º
2-WT/1285 Guided Inline Strain 3-Pole Structore 0 - 5º
2-WT/1286 Guided Inline Strain 3-Pole Structore 5 - 90º

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - Bersfort Single Circuit Mono-Pole Guided Structure - Foundations					
2-WT/1281 Guided Braced Intermediate / Suspension					
5.2.37	D-DT-7852	Pole , St 132kV Guyed Susp 16.1m Bottom Attachment 10.7)	ea		
5.2.38	D-DT-5086	Pole , St 132kV Guyed Susp 18.2m Bottom Attachment 12.8)	ea		
5.2.39		Pole , St 132kV Guyed Susp 21.2m Bottom Attachment 15.8)	ea		

5.2.40		Pole, St 132kV Guyed Susp 24.2m (Bottom Attachment 18.8)	ea		
2-WT/1284 Angle Strain 0 - 90º					
5.2.41	D-DT-7852	Pole, St 132kV Guyed Angle Strain (0°-90°) 18.2m (Bottom Attachement 11.2m)	ea		
5.2.42	D-DT-5086	Pole, St 132kV Guyed Angle Strain (0°-90°) 21.2m (Bottom Attachement 14.2m)	ea		
5.2.43	-	Pole, St 132kV Guyed Angle Strain (0°-90°) 24.2m (Bottom Attachement 17.2m)	ea		
2-WT/1285 Guided Inline Strain 3-Pole Structore 0 - 5º					
5.2.44	D-DT-7852	Pole, St 132kV Guyed Angle Strain 3-pole structure (0°–5°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea		
5.2.45	D-DT-5086	Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea		
5.2.46	-	Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea		
5.2.47	-	Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea		
5.2.48	-	Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea		

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - Chikadee / Kingbird Single Circuit Mono-Pole Structure - Foundations					
2-WT/1286 Guided Inline Strain 3-Pole Structore 5 - 90º					
5.2.49	D-DT-7852	Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea		
5.2.50	D-DT-5086	Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea		
5.2.51	-	Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea		

5.2.52		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea		
5.2.53		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°-90°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea		

Chikadee / Kingbird Single Circuit Mono-Pole Structure - Foundations Design or Verify the Reference Foundation
D-DT-7611 Intermediate / Suspension
D-DT-7615 Angle Strain 0 - 90º
D-DT-7618 3-Pole Strain Structore 0 - 90º
2-WT/1213 3-Pole Terminal Structore 0 - 90º

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - Chikadee / Kingbird Single Circuit Mono-Pole Structure - Foundations					
D-DT-7611 Intermediate / Suspension					
5.2.54	D-DT-7850	Pole, St 132kV Susp 20 m 23kN (Plant 2.6m, Bottom Att 13 m)	ea		
5.2.55	D-DT-7850	Pole, St 132kV Susp 21 m 23kN (Plant 2.7m, Bottom Att 13.9 m)	ea		
5.2.56	D-DT-7850	Pole, St 132kV Susp 22 m 23kN (Plant 2.8m, Bottom Att 14.8 m)	ea		
5.2.57	D-DT-7850	Pole, St 132kV Susp 23 m 23kN (Plant 2.9m, Bottom Att 15.7 m)	ea		
5.2.58	D-DT-7850	Pole, St 132kV Susp 24 m 23kN (Plant 3m, Bottom Att 16.6 m)	ea		
D-DT-7615 Angle Strain 0 - 90º					
5.2.59	D-DT-7851	Pole, St 132kV Strain 0-90° 20 m (Bottom Attachement 13 m)	ea		
5.2.60	D-DT-7851	Pole, St 132kV Strain 0-90° 21 m (Bottom Attachement 14 m)	ea		
5.2.61	D-DT-7851	Pole, St 132kV Strain 0-90° 24 m (Bottom Attachement 17 m)	ea		

5.2.62	D-DT-7851	Pole, St 132kV Strain 0-90° 30 m (Bottom Attachement 23 m)	ea		

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - Chikadee / Kingbird Single Circuit Mono-Pole Structure - Foundations					
D-DT-7618 3-Pole Strain Structore 0 - 90º					
5.2.63	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 8 m and 1 x 10 m poles (Plant 1.6m, Bottom Attachement 6.2 m)	ea		
5.2.64	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 9 m and 1 x 11 m poles (Plant 1.7m, Bottom Attachement 7.1 m)	ea		
5.2.65	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 10 m and 1 x 12 m poles (Plant 1.8m, Bottom Attachement 8 m)	ea		
5.2.66	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 11 m and 1 x 13 m poles (Plant 1.9m, Bottom Attachement 8.9 m)	ea		
5.2.67	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 12 m and 1 x 14 m poles (Plant 2m, Bottom Attachement 9.8m)	ea		
5.2.68	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 13 m and 1 x 15 m poles (Plant 2.1m, Bottom Attachement 10.7m)	ea		

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - Chikadee / Kingbird Single Circuit Mono-Pole Structure - Foundations					
D-DT-7618 3-Pole Strain Structore 0 - 90º cont					

5.2.69	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 14 m and 1 x 16 m poles (Plant 2.2m, Bottom Attachement 11.6m)	ea		
5.2.70	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 15 m and 1 x 17 m poles (Plant 2.3m, Bottom Attachement 12.5m)	ea		
5.2.71	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 16 m and 1 x 18 m poles (Plant 2.4m, Bottom Attachement 13.4m)	ea		
5.2.72	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 17 m and 1 x 19 m poles (Plant 2.4m, Bottom Attachement 14.3m)	ea		
5.2.73	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 18 m and 1 x 20 m poles (Plant 2.6m, Bottom Attachement 15.2m)	ea		
5.2.74	D-DT-7851	Pole, 3-Pole Strain Structure 0-90° 2 x 19 m and 1 x 21 m poles (Plant 2.7m, Bottom Attachement 16.1m)	ea		

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - Chikadee / Kingbird Single Circuit H-Pole Structure - Foundations					
2-WT/1213 3-Pole Terminal Structore					
5.2.75	D-DT-7851	Pole, 3-Pole Term Structure 0-90° 3 x 11.6 poles (Plant 2m, Bottom Attachement 9.6m)	ea		
5.2.76	D-DT-7851	Pole, 3-Pole Term Structure 0-90° 3 x 12.6 poles (Plant 2m, Bottom Attachement 10.6m)	ea		
5.2.77	D-DT-7851	Pole, 3-Pole Term Structure 0-90° 3 x 13.6 poles (Plant 2m, Bottom Attachement 11.6m)	ea		

5.2.78	D-DT-7851	Pole, 3-Pole Term Structure 0-90° 3 x 14.6 poles (Plant 2m, Bottom Attachement 12.6m)	ea		
5.2.79	D-DT-7851	Pole, 3-Pole Term Structure 0-90° 3 x 15.6 poles (Plant 2m, Bottom Attachement 13.6m)	ea		
5.2.80	D-DT-7851	Pole, 3-Pole Term Structure 0-90° 3 x 16.6 poles (Plant 2m, Bottom Attachement 14.6m)	ea		
5.2.81	D-DT-7851	Pole, 3-Pole Term Structure 0-90° 3 x 17.6 poles (Plant 2m, Bottom Attachement 15.6m)	ea		

Chikadee / Kingbird Single Circuit H-Pole Structure - Foundations Design or Verify the Reference Foundation
D-DT-7800 H-Pole Intermediate Structure 8m X-arm
D-DT-7801 H-Pole Structure 8m X-Arm In-Line Strain 0-70kN Range
D-DT-7802 H-Pole Structure 8m X-Arm In-Line Strain 70-120kN Range
D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-70kN Range
D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range
D-DT-7810 H-Pole Intermediate Structure 10m X-Arm
D-DT-7811 H-Pole Structure 10m X-Arm In-Line Strain 0-70kN Range
D-DT-7812 H-Pole Structure 10m X-Arm In-Line Strain 70-120kN Range
D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range
D-DT-7818 H-Pole Structure 10m X-Arm Terminal 70-120kN Range

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - Chikadee / Kingbird Single Circuit H-Pole Structure - Foundations					
D-DT-7800 H-Pole Intermediate Structure 8m X-arm, D-DT-7810 H-Pole Intermediate Structure 10m X-Arm					
5.2.82	D-DT-7850	Pole, H-Pole Intermediate Freestanding Structure 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2.1m, Conductor Attachement 9.2m)	ea		

5.2.83	D-DT-7850	Pole, H-Pole Intermediate Freestanding Structure 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2.2m, Conductor Attachement 10.1m)	ea		
5.2.84	D-DT-7850	Pole, H-Pole Intermediate Freestanding Structure 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2.3m, Conductor Attachement 11.0m)	ea		
5.2.85	D-DT-7850	Pole, H-Pole Intermediate Freestanding Structure 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2.4m, Conductor Attachement 12.0m)	ea		
5.2.86	D-DT-7850	Pole, H-Pole Intermediate Freestanding Structure 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2.5m, Conductor Attachement 12.9m)	ea		
5.2.87	D-DT-7850	Pole, H-Pole Intermediate Freestanding Structure 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2.6m, Conductor Attachement 13.7m)	ea		

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - Chikadee / Kingbird Single Circuit H-Pole Structure - Foundations					
D-DT-7801 H-Pole Inline Strain Structure 8m X-arm 0-70kN, D-DT-7802 H-Pole Inline Strain Structure 8m X-arm 70-120kN, D-DT-7811 H-Pole Intermediate Structure 10m X-Arm 0-70kN D-DT-7812 H-Pole Intermediate Structure 10m X-Arm 70-120kN					
5.2.88	D-DT-7851	Pole, In-Line Strain 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.2.89	D-DT-7851	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.2.90	D-DT-7851	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		

5.2.91	D-DT-7851	Pole, In-Line Strain 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
5.2.92	D-DT-7851	Pole, In-Line Strain 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
5.2.93	D-DT-7851	Pole, In-Line Strain 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Verify foundations for the nominated soil type 1, 2, 3, 4 or Rock - Chikadee / Kingbird Single Circuit H-Pole Structure - Foundations					
D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-70kN Range D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range D-DT-7818 H-Pole Structure 10m X-Arm Terminal 70-120kN Range					
5.2.94	D-DT-7851	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.2.95	D-DT-7851	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.2.96	D-DT-7851	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
5.2.97	D-DT-7851	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
5.2.98	D-DT-7851	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		

5.2.99	D-DT-7851	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		
			Sub-Total 5.2		

5.3	**Foundation Installation: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
		247 Lattice Structure - Foundations			
		Foundation designs are provided for all possible soil types but needs to be verified and approved by a Prof Civil Engineer for each installation. Should the contractor wish to construct a foundation of a different design, all design drawings will be submitted to Eskom for acceptance. The contractor will accept full responsibility for these designs. Eskom will not pay for these designs unless the submitted Eskom designs cannot be used due to prevailing site conditions. This decision will be taken by the Engineer. Foundation designs for all structures in accordance with 0501KR-01 rev 1, 240-47172520 (TRMSCAAC5) and SCSASABK8 by a registered professional in each type of soil (type 1, 2, 3, 4 soft rock and hard rock). Designs to be Eskom Copyright.			
		Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1** on the following structures:			
		Intermediate Suspension Lattice Structures 247 A			
5.3.1	0.69-247A-T1-001	247A 0 degree suspension structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.2	0.69-247A-T1-001	247A 0 degree suspension structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.3	0.69-247A-T1-001	247A 0 degree suspension structure, 132kV lattice steel. 18.1m CAH	ea		
5.3.4	0.69-247A-T1-001	247A 0 degree suspension structure, 132kV lattice steel. 19.1m CAH	ea		
		0-30 degree Strain Lattice Structures 247B			
5.3.5	0.69-247B-T1-007	247B 0-40 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.6	0.69-247B-T1-007	247B 0-40 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		

5.3.7	0.69-247B-T1-007	247B 0-40 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
40-90 degree Strain Lattice Structures 247C					
5.3.8	0.69-247C-T1-013	247C 40-90 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.9	0.69-247C-T1-013	247C 40-90 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.10	0.69-247C-T1-013	247C 40-90 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
0-40 degree Terminal Lattice Structures 247C					
5.3.11	0.69-247C-T1-013	247C 0-40 degree terminal structure, 132kV lattice steel. 14.1m CAH	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**		
247 Lattice Structure - Foundations					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 2** on the following structures:					
Intermediate Suspension Lattice Structures 247 A					
5.3.12	0.69-247A-T2-002	247A 0 degree suspension structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.13	0.69-247A-T2-002	247A 0 degree suspension structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.14	0.69-247A-T2-002	247A 0 degree suspension structure, 132kV lattice steel. 18.1m CAH	ea		
5.3.15	0.69-247A-T2-002	247A 0 degree suspension structure, 132kV lattice steel. 19.1m CAH	ea		
0-30 degree Strain Lattice Structures 247B					
5.3.16	0.69-247B-T2-008	247B 0-40 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		

5.3.17	0.69-247B-T2-008	247B 0-40 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.18	0.69-247B-T2-008	247B 0-40 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
40-90 degree Strain Lattice Structures 247C					
5.3.19	0.69-247C-T2-014	247C 40-90 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.20	0.69-247C-T2-014	247C 40-90 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.21	0.69-247C-T2-014	247C 40-90 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
0-40 degree Terminal Lattice Structures 247C					
5.3.22	0.69-247C-T2-014	247C 0-40 degree terminal structure, 132kV lattice steel. 14.1m CAH	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**		
247 Lattice Structure - Foundations					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 3** on the following structures:					
Intermediate Suspension Lattice Structures 247 A					
5.3.23	0.69-247A-T3-003	247A 0 degree suspension structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.24	0.69-247A-T3-003	247A 0 degree suspension structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.25	0.69-247A-T3-003	247A 0 degree suspension structure, 132kV lattice steel. 18.1m CAH	ea		
5.3.26	0.69-247A-T3-003	247A 0 degree suspension structure, 132kV lattice steel. 19.1m CAH	ea		
0-30 degree Strain Lattice Structures 247B					
5.3.27	0.69-247B-T3-009	247B 0-40 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		

5.3.28	0.69-247B-T3-009	247B 0-40 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.29	0.69-247B-T3-009	247B 0-40 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
40-90 degree Strain Lattice Structures 247C					
5.3.30	0.69-247C-T3-015	247C 40-90 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.31	0.69-247C-T3-015	247C 40-90 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.32	0.69-247C-T3-015	247C 40-90 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
0-40 degree Terminal Lattice Structures 247C					
5.3.33	0.69-247C-T3-015	247C 0-40 degree terminal structure, 132kV lattice steel. 14.1m CAH	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
247 Lattice Structure - Foundations Continue					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 4** on the following structures:					
Intermediate Suspension Lattice Structures 247 A					
5.3.34	0.69-247A-T4-004	247A 0 degree suspension structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.35	0.69-247A-T4-004	247A 0 degree suspension structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.36	0.69-247A-T4-004	247A 0 degree suspension structure, 132kV lattice steel. 18.1m CAH	ea		
5.3.37	0.69-247A-T4-004	247A 0 degree suspension structure, 132kV lattice steel. 19.1m CAH	ea		
0-30 degree Strain Lattice Structures 247B					
5.3.38	0.69-247B-T4-010	247B 0-40 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		

5.3.39	0.69-247B-T4-010	247B 0-40 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.40	0.69-247B-T4-010	247B 0-40 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
40-90 degree Strain Lattice Structures 247C					
5.3.41	0.69-247C-T4-016	247C 40-90 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.42	0.69-247C-T4-016	247C 40-90 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.43	0.69-247C-T4-016	247C 40-90 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
0-40 degree Terminal Lattice Structures 247C					
5.3.44	0.69-247C-T4-016	247C 0-40 degree terminal structure, 132kV lattice steel. 14.1m CAH	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**		
247 Lattice Structure - Foundations Continue					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **Soft Rock** on the following structures:					
Intermediate Suspension Lattice Structures 247 A					
5.3.45	0.69-247A-SR-005	247A 0 degree suspension structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.46	0.69-247A-SR-005	247A 0 degree suspension structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.47	0.69-247A-SR-005	247A 0 degree suspension structure, 132kV lattice steel. 18.1m CAH	ea		
5.3.48	0.69-247A-SR-005	247A 0 degree suspension structure, 132kV lattice steel. 19.1m CAH	ea		
0-30 degree Strain Lattice Structures 247B					
5.3.49	0.69-247B-SR-011	247B 0-40 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		

5.3.50	0.69-247B-SR-011	247B 0-40 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.51	0.69-247B-SR-011	247B 0-40 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
40-90 degree Strain Lattice Structures 247C					
5.3.52	0.69-247C-SR-017	247C 40-90 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.53	0.69-247C-SR-017	247C 40-90 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.54	0.69-247C-SR-017	247C 40-90 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
0-40 degree Terminal Lattice Structures 247C					
5.3.55	0.69-247C-SR-017	247C 0-40 degree terminal structure, 132kV lattice steel. 14.1m CAH	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
247 Lattice Structure - Foundations Continue					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **Hard Rock** on the following structures:					
Intermediate Suspension Lattice Structures 247 A					
5.3.56	0.69-247A-HR-006	247A 0 degree suspension structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.57	0.69-247A-HR-006	247A 0 degree suspension structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.58	0.69-247A-HR-006	247A 0 degree suspension structure, 132kV lattice steel. 18.1m CAH	ea		
5.3.59	0.69-247A-HR-006	247A 0 degree suspension structure, 132kV lattice steel. 19.1m CAH	ea		
0-30 degree Strain Lattice Structures 247B					
5.3.60	0.69-247B-HR-012	247B 0-40 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		

5.3.61	0.69-247B-HR-012	247B 0-40 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.62	0.69-247B-HR-012	247B 0-40 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
40-90 degree Strain Lattice Structures 247C					
5.3.63	0.69-247C-HR-018	247C 40-90 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		
5.3.64	0.69-247C-HR-018	247C 40-90 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
5.3.65	0.69-247C-HR-018	247C 40-90 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
0-40 degree Terminal Lattice Structures 247C					
5.3.66	0.69-247C-HR-018	247C 0-40 degree terminal structure, 132kV lattice steel. 14.1m CAH	ea		
Sub-Total 247 Lattice Structures foundations					

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
258C Intermediate Suspension Braced Double Circuit Structure - Foundations					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1** on the following structures:					
Intermediate Suspension 258C					
5.3.67	0.69/SF/258C/M1323/T1	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 20m (Bottom Attachment 11.2m)	ea		
5.3.68	0.69/SF/258C/M1323/T1	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 22m (Bottom Attachment 13.2m)	ea		
5.3.69	0.69/SF/258C/M1323/T1	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 24m (Bottom Attachment 15.2m)	ea		

Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 2** on the following structures:					
Intermediate Suspension 258C					
5.3.70	0.69/SF/M2646/T2	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 20m (Bottom Attachment 11.2m)	ea		
5.3.71	0.69/SF/M2646/T2	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 22m (Bottom Attachment 13.2m)	ea		
5.3.72	0.69/SF/M2646/T2	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 24m (Bottom Attachment 15.2m)	ea		
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 3** on the following structures:					
Intermediate Suspension 258C					
5.3.73	0.69/SF/M2646/T3	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 20m (Bottom Attachment 11.2m)	ea		
5.3.74	0.69/SF/M2646/T3	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 22m (Bottom Attachment 13.2m)	ea		
5.3.75	0.69/SF/M2646/T3	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 24m (Bottom Attachment 15.2m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
258C Intermediate Suspension Braced Double Circuit Structure - Foundations Continue					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 4** on the following structures:					
Intermediate Suspension 258C					

5.3.76	0.69/SF/M2646/T4	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 20m (Bottom Attachment 11.2m)	ea		
5.3.77	0.69/SF/M2646/T4	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 22m (Bottom Attachment 13.2m)	ea		
5.3.78	0.69/SF/M2646/T4	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 24m (Bottom Attachment 15.2m)	ea		
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **Rock** on the following structures:					
Intermediate Suspension 258C					
5.3.79	0.69/SF/258C/M1323/SR or HR	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 20m (Bottom Attachment 11.2m)	ea		
5.3.80	0.69/SF/258C/M1323/SR or HR	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 22m (Bottom Attachment 13.2m)	ea		
5.3.81	0.69/SF/258C/M1323/SR or HR	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 24m (Bottom Attachment 15.2m)	ea		
Sub-Total 258C Structures foundations					

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
2-WT/15049 Intermediate 0 - 2º Suspension Mono-Pole Double Circuit Structure - Foundations					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1** on the following structures:					
2-WT/15049 Intermediate 0 - 2º Suspension Mono-Pole Double Circuit Structure					
5.3.82	0.69/CFS/20M2100/T1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 20m (Plant 2.6m - Bottom Attachement 10.5m)	ea		

5.3.83	0.69/CFS/22M2301/T1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 22m (Plant 2.8m - Bottom Attachement 12.4m)	ea		
5.3.84	0.69/CFS/24M2601/T1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 24m (Plant 3m - Bottom Attachement 14.2m)	ea		
5.3.85	0.69/CFS/26M2910/T1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 26m (Plant 3.2m - Bottom Attachement 16.0m)	ea		
5.3.86	0.69/CFS/2M3228/T1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 28m (Plant 3.4m - Bottom Attachement 17.8m)	ea		
5.3.87	0.69/CFS/2M3546/T1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 30m (Plant 3.6m - Bottom Attachement 19.6m)	ea		
5.3.88	0.69/CFS/20M2100/T2	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 20m (Plant 2.6m - Bottom Attachement 10.5m)	ea		
5.3.89	0.69/CFS/22M2301/T2	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 22m (Plant 2.8m - Bottom Attachement 12.4m)	ea		
5.3.90	0.69/CFS/24M2601/T2	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 24m (Plant 3m - Bottom Attachement 14.2m)	ea		
5.3.91	0.69/CFS/26M2910/T2	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 26m (Plant 3.2m - Bottom Attachement 16.0m)	ea		
5.3.92	0.69/CFS/2M3228/T2	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 28m (Plant 3.4m - Bottom Attachement 17.8m)	ea		
5.3.93	0.69/CFS/2M3546/T2	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 30m (Plant 3.6m - Bottom Attachement 19.6m)	ea		

5.3	Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3				
******	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
2-WT/15049 Intermediate 0 - 2º Suspension Mono-Pole Double Circuit Structure - Foundations Continue					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 3** on the following structures:					
2-WT/15049 Intermediate 0 - 2º Suspension Mono-Pole Double Circuit Structure					

5.3.94	0.69/CFS/20M2100/T3	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 20m (Plant 2.6m - Bottom Attachement 10.5m)	ea		
5.3.95	0.69/CFS/22M2301/T3	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 22m (Plant 2.8m - Bottom Attachement 12.4m)	ea		
5.3.96	0.69/CFS/24M2601/T3	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 24m (Plant 3m - Bottom Attachement 14.2m)	ea		
5.3.97	0.69/CFS/26M2910/T3	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 26m (Plant 3.2m - Bottom Attachement 16.0m)	ea		
5.3.98	0.69/CFS/2M3228/T3	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 28m (Plant 3.4m - Bottom Attachement 17.8m)	ea		
5.3.99	0.69/CFS/2M3546/T3	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 30m (Plant 3.6m - Bottom Attachement 19.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 4** on the following structures:					
2-WT/15049 Intermediate 0 - 2º Suspension Mono-Pole Double Circuit Structure					
5.3.100	0.69/CFS/20M2100/T4	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 20m (Plant 2.6m - Bottom Attachement 10.5m)	ea		
5.3.101	0.69/CFS/22M2301/T4	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 22m (Plant 2.8m - Bottom Attachement 12.4m)	ea		
5.3.102	0.69/CFS/24M2601/T4	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 24m (Plant 3m - Bottom Attachement 14.2m)	ea		
5.3.103	0.69/CFS/26M2910/T4	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 26m (Plant 3.2m - Bottom Attachement 16.0m)	ea		
5.3.104	0.69/CFS/2M3228/T4	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 28m (Plant 3.4m - Bottom Attachement 17.8m)	ea		
5.3.105	0.69/CFS/2M3546/T4	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 30m (Plant 3.6m - Bottom Attachement 19.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
2-WT/15049 Intermediate 0 - 2º Suspension Mono-Pole Double Circuit Structure - Foundations Continue					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE Soft Rock** on the following structures:					
2-WT/15049 Intermediate 0 - 2º Suspension Mono-Pole Double Circuit Structure					
5.3.106	0.69/CFS/20M2100/SR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 20m (Plant 2.6m - Bottom Attachement 10.5m)	ea		
5.3.107	0.69/CFS/22M2301/SR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 22m (Plant 2.8m - Bottom Attachement 12.4m)	ea		
5.3.108	0.69/CFS/24M2601/SR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 24m (Plant 3m - Bottom Attachement 14.2m)	ea		
5.3.109	0.69/CFS/26M2910/SR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 26m (Plant 3.2m - Bottom Attachement 16.0m)	ea		
5.3.110	0.69/CFS/2M3228/SR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 28m (Plant 3.4m - Bottom Attachement 17.8m)	ea		
5.3.111	0.69/CFS/2M3546/SR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 30m (Plant 3.6m - Bottom Attachement 19.6m)	ea		
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE Hard Rock** on the following structures:					
2-WT/15049 Intermediate 0 - 2º Suspension Mono-Pole Double Circuit Structure					
5.3.112	0.69/CFS/20M2100/HR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 20m (Plant 2.6m - Bottom Attachement 10.5m)	ea		
5.3.113	0.69/CFS/22M2301/HR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 22m (Plant 2.8m - Bottom Attachement 12.4m)	ea		
5.3.114	0.69/CFS/24M2601/HR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 24m (Plant 3m - Bottom Attachement 14.2m)	ea		
5.3.115	0.69/CFS/26M2910/HR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 26m (Plant 3.2m - Bottom Attachement 16.0m)	ea		
5.3.116	0.69/CFS/2M3228/HR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 28m (Plant 3.4m - Bottom Attachement 17.8m)	ea		

5.3.117	0.69/CFS/2M3546/HR	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 30m (Plant 3.6m - Bottom Attachement 19.6m)	ea		
Sub-Total 2-WT/15049 Structures foundations					
5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**		
Twin Kingbird/Bersfort Single Circuit Mono-Pole Structure - Foundations Continue **2-WT/1294 Intermediate 0 - 2º Suspension** **2-WT/1295 Strain 2º - 90º** **2-WT/1296 Angle Strain 3-Pole 2º-90º** **2-WT/1297 3-Pole Terminal** **2-WT/1298 Inline Strain**					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1 & 2** on the following structures:					
2-WT/1294 Intermediate 0 - 2º Suspension					
5.3.118	2-WT/1417 Sheet 1	Pole, St 132kV Susp 21m	ea		
5.3.119		Pole, St 132kV Susp 22m	ea		
5.3.120		Pole, St 132kV Susp 23m	ea		
5.3.121		Pole, St 132kV Susp 24m	ea		
5.3.122		Pole, St 132kV Susp 25m	ea		
5.3.123		Pole, St 132kV Susp 26m	ea		
5.3.124		Pole, St 132kV Susp 29m	ea		
2-WT/1295 Strain 2º - 90º					
5.3.125	2-WT/1417 Sheets 2	Pole, St 132kV Angle Strain (0°-90°) 20m	ea		
5.3.126		Pole, St 132kV Angle Strain (0°-90°) 22m	ea		
5.3.127		Pole, St 132kV Angle Strain (0°-90°) 23m	ea		
5.3.128		Pole, St 132kV Angle Strain (0°-90°) 24m	ea		
5.3.129		Pole, St 132kV Angle Strain (0°-90°) 28m	ea		
5.3.130		Pole, St 132kV Angle Strain (0°-90°) 30m	ea		
2-WT/1296 Angle Strain 3-Pole 2º-90º					
5.3.131	2-WT/1417 Sheets 3	3- Pole, St 132kV Strain 11.1m (2 x 11.1m & 1 x 9.1m)	ea		

5.3.132		3- Pole, St 132kV Strain 13.1m (2 x 13.1m & 1 x 11.1m)	ea		
5.3.133		3- Pole, St 132kV Strain 14m (2 x 14.1m & 1 x 12.1m)	ea		
5.3.134		3- Pole, St 132kV Strain 16.1m (2 x 16.1m & 1 x 14.1m)	ea		
2-WT/1297 3-Pole Terminal					
5.3.135	2-WT/1417 Sheets 3	3- Pole Term St 132kV 14m (Include 3 poles of 14m long)	ea		
5.3.136		3- Pole Term St 132kV 16m (Include 3 poles of 16m long)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 3** on the following structures:					
2-WT/1294 Intermediate 0 - 2º Suspension					
5.3.137	2-WT/1418 Sheet 2&3	Pole, St 132kV Susp 21m	ea		
5.3.138		Pole, St 132kV Susp 22m	ea		
5.3.139		Pole, St 132kV Susp 23m	ea		
5.3.140		Pole, St 132kV Susp 24m	ea		
5.3.141		Pole, St 132kV Susp 25m	ea		
5.3.142		Pole, St 132kV Susp 26m	ea		
5.3.143		Pole, St 132kV Susp 29m	ea		
2-WT/1295 Strain 2º - 90º					
5.3.144	2-WT/1418 Sheet 1&3	Pole, St 132kV Angle Strain (0°-90°) 20m	ea		
5.3.145		Pole, St 132kV Angle Strain (0°-90°) 22m	ea		
5.3.146		Pole, St 132kV Angle Strain (0°-90°) 23m	ea		
5.3.147		Pole, St 132kV Angle Strain (0°-90°) 24m	ea		
5.3.148		Pole, St 132kV Angle Strain (0°-90°) 28m	ea		
5.3.149		Pole, St 132kV Angle Strain (0°-90°) 30m	ea		
2-WT/1296 Angle Strain 3-Pole 2º-90º					
5.3.150	2-WT/1418 Sheets 4	3- Pole, St 132kV Strain 11.1m (2 x 11.1m & 1 x 9.1m)	ea		
5.3.151		3- Pole, St 132kV Strain 13.1m (2 x 13.1m & 1 x 11.1m)	ea		
5.3.152		3- Pole, St 132kV Strain 14m (2 x 14.1m & 1 x 12.1m)	ea		

5.3.153		3- Pole, St 132kV Strain 16.1m (2 x 16.1m & 1 x 14.1m)	ea		
2-WT/1297 3-Pole Terminal					
5.3.154	2-WT/1418 Sheets 4	3- Pole Term St 132kV 14m (Include 3 poles of 14m long)	ea		
5.3.155		3- Pole Term St 132kV 16m (Include 3 poles of 16m long)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**		
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE Rock & Decomposed Rock** on the following structures:					
2-WT/1294 Intermediate 0 - 2º Suspension					
5.3.156	2-WT/1419 Sheet 1	Pole, St 132kV Susp 21m	ea		
5.3.157		Pole, St 132kV Susp 22m	ea		
5.3.158		Pole, St 132kV Susp 23m	ea		
5.3.159		Pole, St 132kV Susp 24m	ea		
5.3.160		Pole, St 132kV Susp 25m	ea		
5.3.161		Pole, St 132kV Susp 26m	ea		
5.3.162		Pole, St 132kV Susp 29m	ea		
2-WT/1295 Strain 2º - 90º					
5.3.163	2-WT/1419 Sheet 2	Pole, St 132kV Angle Strain (0°-90°) 20m	ea		
5.3.164		Pole, St 132kV Angle Strain (0°-90°) 22m	ea		
5.3.165		Pole, St 132kV Angle Strain (0°-90°) 23m	ea		
5.3.166		Pole, St 132kV Angle Strain (0°-90°) 24m	ea		
5.3.167		Pole, St 132kV Angle Strain (0°-90°) 28m	ea		
5.3.168		Pole, St 132kV Angle Strain (0°-90°) 30m	ea		
2-WT/1296 Angle Strain 3-Pole 2º-90º					
5.3.169	2-WT/1419 Sheet 2	3- Pole, St 132kV Strain 11.1m (2 x 11.1m & 1 x 9.1m)	ea		
5.3.170		3- Pole, St 132kV Strain 13.1m (2 x 13.1m & 1 x 11.1m)	ea		
5.3.171		3- Pole, St 132kV Strain 14m (2 x 14.1m & 1 x 12.1m)	ea		
5.3.172		3- Pole, St 132kV Strain 16.1m (2 x 16.1m & 1 x 14.1m)	ea		
2-WT/1297 3-Pole Terminal					
5.3.173	2-WT/1419 Sheet 2	3- Pole Term St 132kV 14m (Include 3 poles of 14m long)	ea		
5.3.174		3- Pole Term St 132kV 16m (Include 3 poles of 16m long)	ea		

		Sub-Total Twin Configurations Foundations			

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Bersfort Single Circuit Mono-Pole Guided Structure - Foundations **2-WT/1281 Guided Braced Intermediate / Suspension** **2-WT/1284 Angle Strain 0 - 90º** **2-WT/1285 Guided Inline Strain 3-Pole Structore 0 - 5º** **2-WT/1286 Guided Inline Strain 3-Pole Structore 5 - 90º**					
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1, 2 & 3** on the following structures:					
2-WT/1281 Guided Braced Intermediate / Suspension					
5.3.175	D-DT-7852 Sheet 1	Pole , St 132kV Guyed Susp 16.1m Bottom Attachment 10.7)	ea		
5.3.176		Pole , St 132kV Guyed Susp 18.2m Bottom Attachment 12.8)	ea		
5.3.177		Pole , St 132kV Guyed Susp 21.2m Bottom Attachment 15.8)	ea		
5.3.178		Pole, St 132kV Guyed Susp 24.2m (Bottom Attachment 18.8)	ea		
2-WT/1284 Angle Strain 0 - 90º					
5.3.179	D-DT-7852 Sheet 1	Pole, St 132kV Guyed Angle Strain (0°-90°) 18.2m (Bottom Attachement 11.2m)	ea		
5.3.180		Pole, St 132kV Guyed Angle Strain (0°-90°) 21.2m (Bottom Attachement 14.2m)	ea		
5.3.181		Pole, St 132kV Guyed Angle Strain (0°-90°) 24.2m (Bottom Attachement 17.2m)	ea		
2-WT/1285 Guided Inline Strain 3-Pole Structore 0 - 5º					
5.3.182	D-DT-7852 Sheet 1	Pole, St 132kV Guyed Angle Strain 3-pole structure (0°–5°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea		

5.3.183		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea		
5.3.184		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea		
5.3.185		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea		
5.3.186		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1, 2 & 3** on the following structures:					
2-WT/1286 Guided Inline Strain 3-Pole Structore 5 - 90º					
5.3.187	D-DT-7852 Sheet 1	Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea		
5.3.188		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea		
5.3.189		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea		
5.3.190		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea		
5.3.191		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°-90°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 4** on the following structures:					
2-WT/1281 Guided Braced Intermediate / Suspension					

5.3.192	D-DT-7852 Sheet 4	Pole , St 132kV Guyed Susp 16.1m Bottom Attachment 10.7)	ea		
5.3.193		Pole , St 132kV Guyed Susp 18.2m Bottom Attachment 12.8)	ea		
5.3.194		Pole , St 132kV Guyed Susp 21.2m Bottom Attachment 15.8)	ea		
5.3.195		Pole, St 132kV Guyed Susp 24.2m (Bottom Attachment 18.8)	ea		
2-WT/1284 Angle Strain 0 - 90º					
5.3.196	D-DT-7852 Sheet 4	Pole, St 132kV Guyed Angle Strain (0°-90°) 18.2m (Bottom Attachement 11.2m)	ea		
5.3.197		Pole, St 132kV Guyed Angle Strain (0°-90°) 21.2m (Bottom Attachement 14.2m)	ea		
5.3.198		Pole, St 132kV Guyed Angle Strain (0°-90°) 24.2m (Bottom Attachement 17.2m)	ea		
2-WT/1285 Guided Inline Strain 3-Pole Structore 0 - 5º					
5.3.199	D-DT-7852 Sheet 4	Pole, St 132kV Guyed Angle Strain 3-pole structure (0°–5°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea		
5.3.200		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea		
5.3.201		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea		
5.3.202		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea		
5.3.203		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea		

5.3	Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **Rock** on the following structures:					
2-WT/1286 Guided Inline Strain 3-Pole Structore 5 - 90º					

5.3.204	D-DT-7852 Sheet 4	Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea		
5.3.205		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea		
5.3.206		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea		
5.3.207		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea		
5.3.208		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°-90°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **Rock** on the following structures:					
2-WT/1281 Guided Braced Intermediate / Suspension					
5.3.209	D-DT-7852 Sheet 1	Pole , St 132kV Guyed Susp 16.1m Bottom Attachment 10.7)	ea		
5.3.210		Pole , St 132kV Guyed Susp 18.2m Bottom Attachment 12.8)	ea		
5.3.211		Pole , St 132kV Guyed Susp 21.2m Bottom Attachment 15.8)	ea		
5.3.212		Pole, St 132kV Guyed Susp 24.2m (Bottom Attachment 18.8)	ea		
2-WT/1284 Angle Strain 0 - 90º					
5.3.213	D-DT-7852 Sheet 1	Pole, St 132kV Guyed Angle Strain (0°-90°) 18.2m (Bottom Attachement 11.2m)	ea		
5.3.214		Pole, St 132kV Guyed Angle Strain (0°-90°) 21.2m (Bottom Attachement 14.2m)	ea		
5.3.215		Pole, St 132kV Guyed Angle Strain (0°-90°) 24.2m (Bottom Attachement 17.2m)	ea		

2-WT/1285 Guided Inline Strain 3-Pole Structore 0 - 5º					
5.3.216	D-DT-7852 Sheet 1	Pole, St 132kV Guyed Angle Strain 3-pole structure (0°–5°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea		
5.3.217		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea		
5.3.218		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea		
5.3.219		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea		
5.3.220		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea		

5.3	**Foundation Installation Continue - VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1** on the following structures:					
2-WT/1286 Guided Inline Strain 3-Pole Structore 5 - 90º					
5.3.221	D-DT-7852 Sheet 1	Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea		
5.3.222		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea		
5.3.223		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea		
5.3.224		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea		
5.3.225		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°-90°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea		
Sub-Total Bersfort Guided Monopole Foundations					

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**

Chikadee / Kingbird Single Circuit Mono-Pole Structure - Foundations
D-DT-7611 Intermediate / Suspension
D-DT-7615 Angle Strain 0 - 90º
D-DT-7618 3-Pole Strain Structore 0 - 90º
2-WT/1213 3-Pole Terminal Structore 0 - 90º

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1** on the following structures:					
D-DT-7611 Intermediate / Suspension					
5.3.226	D-DT-7850s2	Pole, St 132kV Susp 20 m 23kN (Plant 2.6m, Bottom Att 13 m)	ea		
5.3.227	D-DT-7850s2	Pole, St 132kV Susp 21 m 23kN (Plant 2.7m, Bottom Att 13.9 m)	ea		
5.3.228	D-DT-7850s2	Pole, St 132kV Susp 22 m 23kN (Plant 2.8m, Bottom Att 14.8 m)	ea		
5.3.229	D-DT-7850s2	Pole, St 132kV Susp 22 m 23kN (Plant 2.9m, Bottom Att 15.7 m)	ea		
5.3.230	D-DT-7850s2	Pole, St 132kV Susp 22 m 23kN (Plant 3m, Bottom Att 16.6 m)	ea		
D-DT-7615 Angle Strain 0 - 90º					
5.3.231	D-DT-7851s2	Pole, St 132kV Strain 0-90° 20 m (Bottom Attachement 13 m)	ea		
5.3.232	D-DT-7851s2	Pole, St 132kV Strain 0-90° 21 m (Bottom Attachement 14 m)	ea		
5.3.233	D-DT-7851s2	Pole, St 132kV Strain 0-90° 24 m (Bottom Attachement 17 m)	ea		

5.3.234	D-DT-7851s2	Pole, St 132kV Strain 0-90° 30 m (Bottom Attachement 23 m)	ea			

5.3	Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1** on the following structures:					
D-DT-7618 3-Pole Strain Structore 0 - 90º					
5.3.235	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 8 m and 1 x 10 m poles (Plant 1.6m, Bottom Attachement 6.2 m)	ea		
5.3.236	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 9 m and 1 x 11 m poles (Plant 1.7m, Bottom Attachement 7.1 m)	ea		
5.3.237	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 10 m and 1 x 12 m poles (Plant 1.8m, Bottom Attachement 8 m)	ea		
5.3.238	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 11 m and 1 x 13 m poles (Plant 1.9m, Bottom Attachement 8.9 m)	ea		
5.3.239	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 12 m and 1 x 14 m poles (Plant 2m, Bottom Attachement 9.8m)	ea		
5.3.240	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 13 m and 1 x 15 m poles (Plant 2.1m, Bottom Attachement 10.7m)	ea		

5.3	Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**

Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1** on the following structures:					
D-DT-7618 3-Pole Strain Structore 0 - 90º cont					
5.3.241	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 14 m and 1 x 16 m poles (Plant 2.2m, Bottom Attachement 11.6m)	ea		
5.3.242	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 15 m and 1 x 17 m poles (Plant 2.3m, Bottom Attachement 12.5m)	ea		
5.3.243	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 16 m and 1 x 18 m poles (Plant 2.4m, Bottom Attachement 13.4m)	ea		
5.3.244	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 17 m and 1 x 19 m poles (Plant 2.4m, Bottom Attachement 14.3m)	ea		
5.3.245	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 18 m and 1 x 20 m poles (Plant 2.6m, Bottom Attachement 15.2m)	ea		
5.3.246	D-DT-7851s2	Pole, 3-Pole Strain Structure 0-90° 2 x 19 m and 1 x 21 m poles (Plant 2.7m, Bottom Attachement 16.1m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 2** on the following structures:					
2-WT-1213 3-Pole Terminal Structore					
**********	D-DT-7851s2	Pole, 3-Pole Term Structure 0-90° 3 x 11.6 poles (Plant 2m, Bottom Attachement 9.6m)	ea		

5.3.248	D-DT-7851s2	Pole, 3-Pole Term Structure 0-90° 3 x 12.6 poles (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.249	D-DT-7851s2	Pole, 3-Pole Term Structure 0-90° 3 x 13.6 poles (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.250	D-DT-7851s2	Pole, 3-Pole Term Structure 0-90° 3 x 14.6 poles (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.251	D-DT-7851s2	Pole, 3-Pole Term Structure 0-90° 3 x 15.6 poles (Plant 2m, Bottom Attachement 13.6m)	ea		
5.3.252	D-DT-7851s2	Pole, 3-Pole Term Structure 0-90° 3 x 16.6 poles (Plant 2m, Bottom Attachement 14.6m)	ea		
5.3.253	D-DT-7851s2	Pole, 3-Pole Term Structure 0-90° 3 x 17.6 poles (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 2** on the following structures:					
D-DT-7611 Intermediate / Suspension					
5.3.254	D-DT-7850s3	Pole, St 132kV Susp 20 m 23kN (Plant 2.6m, Bottom Att 13 m)	ea		
5.3.255	D-DT-7850s3	Pole, St 132kV Susp 21 m 23kN (Plant 2.7m, Bottom Att 13.9 m)	ea		
5.3.256	D-DT-7850s3	Pole, St 132kV Susp 22 m 23kN (Plant 2.8m, Bottom Att 14.8 m)	ea		

5.3.257	D-DT-7850s3	Pole, St 132kV Susp 22 m 23kN (Plant 2.9m, Bottom Att 15.7 m)	ea		
5.3.258	D-DT-7850s3	Pole, St 132kV Susp 22 m 23kN (Plant 3m, Bottom Att 16.6 m)	ea		
D-DT-7615 Angle Strain 0 - 90º					
5.3.259	D-DT-7851s3	Pole, St 132kV Strain 0-90° 20 m (Bottom Attachement 13 m)	ea		
5.3.260	D-DT-7851s3	Pole, St 132kV Strain 0-90° 21 m (Bottom Attachement 14 m)	ea		
5.3.261	D-DT-7851s3	Pole, St 132kV Strain 0-90° 24 m (Bottom Attachement 17 m)	ea		
5.3.262	D-DT-7851s3	Pole, St 132kV Strain 0-90° 30 m (Bottom Attachement 23 m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**		
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 2** on the following structures:					
D-DT-7618 3-Pole Strain Structore 0 - 90º					
5.3.263	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 8 m and 1 x 10 m poles (Plant 1.6m, Bottom Attachement 6.2 m)	ea		
5.3.264	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 9 m and 1 x 11 m poles (Plant 1.7m, Bottom Attachement 7.1 m)	ea		
5.3.265	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 10 m and 1 x 12 m poles (Plant 1.8m, Bottom Attachement 8 m)	ea		
5.3.266	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 11 m and 1 x 13 m poles (Plant 1.9m, Bottom Attachement 8.9 m)	ea		

5.3.267	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 12 m and 1 x 14 m poles (Plant 2m, Bottom Attachement 9.8m)	ea		
5.3.268	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 13 m and 1 x 15 m poles (Plant 2.1m, Bottom Attachement 10.7m)	ea		
5.3.269	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 14 m and 1 x 16 m poles (Plant 2.2m, Bottom Attachement 11.6m)	ea		

5.3	Foundation Installation Continus: VOLUME 3 PART 2 - Activity Stage 5.3				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 2** on the following structures:					
D-DT-7618 3-Pole Strain Structore 0 - 90º cont					
5.3.270	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 15 m and 1 x 17 m poles (Plant 2.3m, Bottom Attachement 12.5m)	ea		
5.3.271	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 16 m and 1 x 18 m poles (Plant 2.4m, Bottom Attachement 13.4m)	ea		
5.3.272	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 17 m and 1 x 19 m poles (Plant 2.4m, Bottom Attachement 14.3m)	ea		
5.3.273	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 18 m and 1 x 20 m poles (Plant 2.6m, Bottom Attachement 15.2m)	ea		
5.3.274	D-DT-7851s3	Pole, 3-Pole Strain Structure 0-90° 2 x 19 m and 1 x 21 m poles (Plant 2.7m, Bottom Attachement 16.1m)	ea		

5.3	Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
C.2		**Foundations Installation**			
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 3** on the following structures:					
2-WT-1213 3-Pole Terminal Structore					
5.3.275	D-DT-7851s3	Pole, 3-Pole Term Structure 0-90° 3 x 11.6 poles (Plant 2m, Bottom Attachement 9.6m)	ea		
5.3.276	D-DT-7851s3	Pole, 3-Pole Term Structure 0-90° 3 x 12.6 poles (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.277	D-DT-7851s3	Pole, 3-Pole Term Structure 0-90° 3 x 13.6 poles (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.278	D-DT-7851s3	Pole, 3-Pole Term Structure 0-90° 3 x 14.6 poles (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.279	D-DT-7851s3	Pole, 3-Pole Term Structure 0-90° 3 x 15.6 poles (Plant 2m, Bottom Attachement 13.6m)	ea		
5.3.280	D-DT-7851s3	Pole, 3-Pole Term Structure 0-90° 3 x 16.6 poles (Plant 2m, Bottom Attachement 14.6m)	ea		
5.3.281	D-DT-7851s3	Pole, 3-Pole Term Structure 0-90° 3 x 17.6 poles (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 3** on the following structures:					

D-DT-7611 Intermediate / Suspension					
5.3.282	D-DT-7850s4	Pole, St 132kV Susp 20 m 23kN (Plant 2.6m, Bottom Att 13 m)	ea		
5.3.283	D-DT-7850s4	Pole, St 132kV Susp 21 m 23kN (Plant 2.7m, Bottom Att 13.9 m)	ea		
5.3.284	D-DT-7850s4	Pole, St 132kV Susp 22 m 23kN (Plant 2.8m, Bottom Att 14.8 m)	ea		
5.3.285	D-DT-7850s4	Pole, St 132kV Susp 22 m 23kN (Plant 2.9m, Bottom Att 15.7 m)	ea		
5.3.286	D-DT-7850s4	Pole, St 132kV Susp 22 m 23kN (Plant 3m, Bottom Att 16.6 m)	ea		
D-DT-7615 Angle Strain 0 - 90º					
5.3.287	D-DT-7851s4	Pole, St 132kV Strain 0-90° 20 m (Bottom Attachement 13 m)	ea		
5.3.288	D-DT-7851s4	Pole, St 132kV Strain 0-90° 21 m (Bottom Attachement 14 m)	ea		
5.3.289	D-DT-7851s4	Pole, St 132kV Strain 0-90° 24 m (Bottom Attachement 17 m)	ea		
5.3.290	D-DT-7851s4	Pole, St 132kV Strain 0-90° 30 m (Bottom Attachement 23 m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 3** on the following structures:					
D-DT-7618 3-Pole Strain Structore 0 - 90º					
5.3.291	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 8 m and 1 x 10 m poles (Plant 1.6m, Bottom Attachement 6.2 m)	ea		
5.3.292	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 9 m and 1 x 11 m poles (Plant 1.7m, Bottom Attachement 7.1 m)	ea		

5.3.293	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 10 m and 1 x 12 m poles (Plant 1.8m, Bottom Attachement 8 m)	ea		
5.3.294	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 11 m and 1 x 13 m poles (Plant 1.9m, Bottom Attachement 8.9 m)	ea		
5.3.295	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 12 m and 1 x 14 m poles (Plant 2m, Bottom Attachement 9.8m)	ea		
5.3.296	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 13 m and 1 x 15 m poles (Plant 2.1m, Bottom Attachement 10.7m)	ea		
5.3.297	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 14 m and 1 x 16 m poles (Plant 2.2m, Bottom Attachement 11.6m)	ea		

5.3	**Foundation Installation Continue:VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 3** on the following structures:					
D-DT-7618 3-Pole Strain Structore 0 - 90º cont					
5.3.298	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 15 m and 1 x 17 m poles (Plant 2.3m, Bottom Attachement 12.5m)	ea		
5.3.299	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 16 m and 1 x 18 m poles (Plant 2.4m, Bottom Attachement 13.4m)	ea		
5.3.300	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 17 m and 1 x 19 m poles (Plant 2.4m, Bottom Attachement 14.3m)	ea		

5.3.301	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 18 m and 1 x 20 m poles (Plant 2.6m, Bottom Attachement 15.2m)	ea		
5.3.302	D-DT-7851s4	Pole, 3-Pole Strain Structure 0-90° 2 x 19 m and 1 x 21 m poles (Plant 2.7m, Bottom Attachement 16.1m)	ea		
2-WT-1213 3-Pole Terminal Structore					
5.3.303	D-DT-7851s4	Pole, 3-Pole Term Structure 0-90° 3 x 11.6 poles (Plant 2m, Bottom Attachement 9.6m)	ea		
5.3.304	D-DT-7851s4	Pole, 3-Pole Term Structure 0-90° 3 x 12.6 poles (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.305	D-DT-7851s4	Pole, 3-Pole Term Structure 0-90° 3 x 13.6 poles (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.306	D-DT-7851s4	Pole, 3-Pole Term Structure 0-90° 3 x 14.6 poles (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.307	D-DT-7851s4	Pole, 3-Pole Term Structure 0-90° 3 x 15.6 poles (Plant 2m, Bottom Attachement 13.6m)	ea		
5.3.308	D-DT-7851s4	Pole, 3-Pole Term Structure 0-90° 3 x 16.6 poles (Plant 2m, Bottom Attachement 14.6m)	ea		
5.3.309	D-DT-7851s4	Pole, 3-Pole Term Structure 0-90° 3 x 17.6 poles (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 4** on the following structures:					

D-DT-7611 Intermediate / Suspension					
5.3.310	D-DT-7850s5	Pole, St 132kV Susp 20 m 23kN (Plant 2.6m, Bottom Att 13 m)	ea		
5.3.311	D-DT-7850s5	Pole, St 132kV Susp 21 m 23kN (Plant 2.7m, Bottom Att 13.9 m)	ea		
5.3.312	D-DT-7850s5	Pole, St 132kV Susp 22 m 23kN (Plant 2.8m, Bottom Att 14.8 m)	ea		
5.3.313	D-DT-7850s5	Pole, St 132kV Susp 22 m 23kN (Plant 2.9m, Bottom Att 15.7 m)	ea		
5.3.314	D-DT-7850s5	Pole, St 132kV Susp 22 m 23kN (Plant 3m, Bottom Att 16.6 m)	ea		
D-DT-7615 Angle Strain 0 - 90º					
5.3.315	D-DT-7851s5	Pole, St 132kV Strain 0-90° 20 m (Bottom Attachement 13 m)	ea		
5.3.316	D-DT-7851s5	Pole, St 132kV Strain 0-90° 21 m (Bottom Attachement 14 m)	ea		
5.3.317	D-DT-7851s5	Pole, St 132kV Strain 0-90° 24 m (Bottom Attachement 17 m)	ea		
5.3.318	D-DT-7851s5	Pole, St 132kV Strain 0-90° 30 m (Bottom Attachement 23 m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 4** on the following structures:					
D-DT-7618 3-Pole Strain Structore 0 - 90º					
5.3.319	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 8 m and 1 x 10 m poles (Plant 1.6m, Bottom Attachement 6.2 m)	ea		

5.3.320	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 9 m and 1 x 11 m poles (Plant 1.7m, Bottom Attachement 7.1 m)	ea		
5.3.321	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 10 m and 1 x 12 m poles (Plant 1.8m, Bottom Attachement 8 m)	ea		
5.3.322	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 11 m and 1 x 13 m poles (Plant 1.9m, Bottom Attachement 8.9 m)	ea		
5.3.323	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 12 m and 1 x 14 m poles (Plant 2m, Bottom Attachement 9.8m)	ea		
5.3.324	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 13 m and 1 x 15 m poles (Plant 2.1m, Bottom Attachement 10.7m)	ea		
5.3.325	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 14 m and 1 x 16 m poles (Plant 2.2m, Bottom Attachement 11.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 4** on the following structures:					
D-DT-7618 3-Pole Strain Structore 0 - 90º cont					
5.3.326	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 15 m and 1 x 17 m poles (Plant 2.3m, Bottom Attachement 12.5m)	ea		
5.3.327	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 16 m and 1 x 18 m poles (Plant 2.4m, Bottom Attachement 13.4m)	ea		
5.3.328	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 17 m and 1 x 19 m poles (Plant 2.4m, Bottom Attachement 14.3m)	ea		

5.3.329	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 18 m and 1 x 20 m poles (Plant 2.6m, Bottom Attachement 15.2m)	ea		
5.3.330	D-DT-7851s5	Pole, 3-Pole Strain Structure 0-90° 2 x 19 m and 1 x 21 m poles (Plant 2.7m, Bottom Attachement 16.1m)	ea		
2-WT-1213 3-Pole Terminal Structore					
5.3.331	D-DT-7851s5	Pole, 3-Pole Term Structure 0-90° 3 x 11.6 poles (Plant 2m, Bottom Attachement 9.6m)	ea		
5.3.332	D-DT-7851s5	Pole, 3-Pole Term Structure 0-90° 3 x 12.6 poles (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.333	D-DT-7851s5	Pole, 3-Pole Term Structure 0-90° 3 x 13.6 poles (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.334	D-DT-7851s5	Pole, 3-Pole Term Structure 0-90° 3 x 14.6 poles (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.335	D-DT-7851s5	Pole, 3-Pole Term Structure 0-90° 3 x 15.6 poles (Plant 2m, Bottom Attachement 13.6m)	ea		
5.3.336	D-DT-7851s5	Pole, 3-Pole Term Structure 0-90° 3 x 16.6 poles (Plant 2m, Bottom Attachement 14.6m)	ea		
5.3.337	D-DT-7851s5	Pole, 3-Pole Term Structure 0-90° 3 x 17.6 poles (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**

Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **ROCK** on the following structures:					
D-DT-7611 Intermediate / Suspension					
5.3.338	D-DT-7850s1	Pole, St 132kV Susp 20 m 23kN (Plant 2.6m, Bottom Att 13 m)	ea		
5.3.339	D-DT-7850s1	Pole, St 132kV Susp 21 m 23kN (Plant 2.7m, Bottom Att 13.9 m)	ea		
5.3.340	D-DT-7850s1	Pole, St 132kV Susp 22 m 23kN (Plant 2.8m, Bottom Att 14.8 m)	ea		
5.3.341	D-DT-7850s1	Pole, St 132kV Susp 22 m 23kN (Plant 2.9m, Bottom Att 15.7 m)	ea		
5.3.342	D-DT-7850s1	Pole, St 132kV Susp 22 m 23kN (Plant 3m, Bottom Att 16.6 m)	ea		
D-DT-7615 Angle Strain 0 - 90º					
5.3.343	D-DT-7851s1	Pole, St 132kV Strain 0-90° 20 m (Bottom Attachement 13 m)	ea		
5.3.344	D-DT-7851s1	Pole, St 132kV Strain 0-90° 21 m (Bottom Attachement 14 m)	ea		
5.3.345	D-DT-7851s1	Pole, St 132kV Strain 0-90° 24 m (Bottom Attachement 17 m)	ea		
5.3.346	D-DT-7851s1	Pole, St 132kV Strain 0-90° 30 m (Bottom Attachement 23 m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **ROCK** on the following structures:					
D-DT-7618 3-Pole Strain Structore 0 - 90º					
5.3.347	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 8 m and 1 x 10 m poles (Plant 1.6m, Bottom Attachement 6.2 m)	ea		

5.3.348	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 9 m and 1 x 11 m poles (Plant 1.7m, Bottom Attachement 7.1 m)	ea		
5.3.349	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 10 m and 1 x 12 m poles (Plant 1.8m, Bottom Attachement 8 m)	ea		
5.3.350	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 11 m and 1 x 13 m poles (Plant 1.9m, Bottom Attachement 8.9 m)	ea		
5.3.351	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 12 m and 1 x 14 m poles (Plant 2m, Bottom Attachement 9.8m)	ea		
5.3.352	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 13 m and 1 x 15 m poles (Plant 2.1m, Bottom Attachement 10.7m)	ea		
5.3.353	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 14 m and 1 x 16 m poles (Plant 2.2m, Bottom Attachement 11.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **ROCK** on the following structures:					
D-DT-7618 3-Pole Strain Structore 0 - 90º cont					
5.3.354	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 15 m and 1 x 17 m poles (Plant 2.3m, Bottom Attachement 12.5m)	ea		
5.3.355	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 16 m and 1 x 18 m poles (Plant 2.4m, Bottom Attachement 13.4m)	ea		
5.3.356	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 17 m and 1 x 19 m poles (Plant 2.4m, Bottom Attachement 14.3m)	ea		

5.3.357	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 18 m and 1 x 20 m poles (Plant 2.6m, Bottom Attachement 15.2m)	ea		
5.3.358	D-DT-7851s1	Pole, 3-Pole Strain Structure 0-90° 2 x 19 m and 1 x 21 m poles (Plant 2.7m, Bottom Attachement 16.1m)	ea		

5.3	Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **ROCK** on the following structures:					
2-WT-1213 3-Pole Terminal Structore					
5.3.359	D-DT-7851s1	Pole, 3-Pole Term Structure 0-90° 3 x 11.6 poles (Plant 2m, Bottom Attachement 9.6m)	ea		
5.3.360	D-DT-7851s1	Pole, 3-Pole Term Structure 0-90° 3 x 12.6 poles (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.361	D-DT-7851s1	Pole, 3-Pole Term Structure 0-90° 3 x 13.6 poles (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.362	D-DT-7851s1	Pole, 3-Pole Term Structure 0-90° 3 x 14.6 poles (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.363	D-DT-7851s1	Pole, 3-Pole Term Structure 0-90° 3 x 15.6 poles (Plant 2m, Bottom Attachement 13.6m)	ea		
5.3.364	D-DT-7851s1	Pole, 3-Pole Term Structure 0-90° 3 x 16.6 poles (Plant 2m, Bottom Attachement 14.6m)	ea		

5.3.365	D-DT-7851s1	Pole, 3-Pole Term Structure 0-90° 3 x 17.6 poles (Plant 2m, Bottom Attachement 15.6m)	ea		
Sub-Total Kingbird & Chikadee Single Circuit Monopoles Foundations					

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**

Chikadee / Kingbird Single Circuit H-Pole Structure - Foundations
D-DT-7800 H-Pole Intermediate Structure 8m X-arm
D-DT-7801 H-Pole Structure 8m X-Arm In-Line Strain 0-70kN Range
D-DT-7802 H-Pole Structure 8m X-Arm In-Line Strain 70-120kN Range
D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-70kN Range
D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range
D-DT-7810 H-Pole Intermediate Structure 10m X-Arm
D-DT-7811 H-Pole Structure 10m X-Arm In-Line Strain 0-70kN Range
D-DT-7812 H-Pole Structure 10m X-Arm In-Line Strain 70-120kN Range
D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range
D-DT-7818 H-Pole Structure 10m X-Arm Terminal 70-120kN Range

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1** on the following structures:					
D-DT-7800 H-Pole Intermediate Structure 8m X-arm, D-DT-7810 H-Pole Intermediate Structure 10m X-Arm					
5.3.366	D-DT-7850s2	Pole, H-Pole Intermediate Freestanding Structure 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2.1m, Conductor Attachement 9.2m)	ea		
5.3.367	D-DT-7850s2	Pole, H-Pole Intermediate Freestanding Structure 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2.2m, Conductor Attachement 10.1m)	ea		

5.3.368	D-DT-7850s2	Pole, H-Pole Intermediate Freestanding Structure 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2.3m, Conductor Attachement 11.0m)	ea		
5.3.369	D-DT-7850s2	Pole, H-Pole Intermediate Freestanding Structure 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2.4m, Conductor Attachement 12.0m)	ea		
5.3.370	D-DT-7850s2	Pole, H-Pole Intermediate Freestanding Structure 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2.5m, Conductor Attachement 12.9m)	ea		
5.3.371	D-DT-7850s2	Pole, H-Pole Intermediate Freestanding Structure 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2.6m, Conductor Attachement 13.7m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1** on the following structures:					
D-DT-7801 H-Pole Inline Strain Structure 8m X-arm 0-70kN, D-DT-7802 H-Pole Inline Strain Structure 8m X-arm 70-120kN, D-DT-7811 H-Pole Intermediate Structure 10m X-Arm 0-70kN D-DT-7812 H-Pole Intermediate Structure 10m X-Arm 70-120kN					
5.3.372	D-DT-7851s2	Pole, In-Line Strain 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.373	D-DT-7851s2	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.374	D-DT-7851s2	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		

5.3.375	D-DT-7851s2	Pole, In-Line Strain 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
5.3.376	D-DT-7851s2	Pole, In-Line Strain 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
5.3.377	D-DT-7851s2	Pole, In-Line Strain 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 1** on the following structures:					
D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-70kN Range D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range D-DT-7818 H-Pole Structure 10m X-Arm Terminal 70-120kN Range					
5.3.378	D-DT-7851s2	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.379	D-DT-7851s2	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.380	D-DT-7851s2	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.381	D-DT-7851s2	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		

5.3.382	D-DT-7851s2	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
5.3.383	D-DT-7851s2	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 2** on the following structures:					
D-DT-7800 H-Pole Intermediate Structure 8m X-arm, D-DT-7810 H-Pole Intermediate Structure 10m X-Arm					
5.3.384	D-DT-7850s3	Pole, H-Pole Intermediate Freestanding Structure 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2.1m, Conductor Attachement 9.2m)	ea		
5.3.385	D-DT-7850s3	Pole, H-Pole Intermediate Freestanding Structure 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2.2m, Conductor Attachement 10.1m)	ea		
5.3.386	D-DT-7850s3	Pole, H-Pole Intermediate Freestanding Structure 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2.3m, Conductor Attachement 11.0m)	ea		
5.3.387	D-DT-7850s3	Pole, H-Pole Intermediate Freestanding Structure 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2.4m, Conductor Attachement 12.0m)	ea		
5.3.388	D-DT-7850s3	Pole, H-Pole Intermediate Freestanding Structure 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2.5m, Conductor Attachement 12.9m)	ea		
5.3.389	D-DT-7850s3	Pole, H-Pole Intermediate Freestanding Structure 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2.6m, Conductor Attachement 13.7m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 2** on the following structures:					
D-DT-7801 H-Pole Structure 8m X-Arm In-Line Strain 0-70kN Range D-DT-7802 H-Pole Structure 8m X-Arm In-Line Strain 70-120kN Range D-DT-7811 H-Pole Structure 10m X-Arm In-Line Strain 0-70kN Range D-DT-7812 H-Pole Structure 10m X-Arm In-Line Strain 70-120kN Range					
5.3.390	D-DT-7851s3	Pole, In-Line Strain 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.391	D-DT-7851s3	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.392	D-DT-7851s3	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.393	D-DT-7851s3	Pole, In-Line Strain 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
5.3.394	D-DT-7851s3	Pole, In-Line Strain 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
5.3.395	D-DT-7851s3	Pole, In-Line Strain 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 2** on the following structures:					
D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-120kN Range D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range D-DT-7818 H-Pole Structure 10m X-Arm Terminal 70-120kN Range					
5.3.396	D-DT-7851s3	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.397	D-DT-7851s3	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.398	D-DT-7851s3	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.399	D-DT-7851s3	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
5.3.400	D-DT-7851s3	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
5.3.401	D-DT-7851s3	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**

Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 3** on the following structures:					
D-DT-7800 H-Pole Intermediate Structure 8m X-arm, D-DT-7810 H-Pole Intermediate Structure 10m X-Arm					
5.3.402	D-DT-7850s4	Pole, H-Pole Intermediate Freestanding Structure 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2.1m, Conductor Attachement 9.2m)	ea		
5.3.403	D-DT-7850s4	Pole, H-Pole Intermediate Freestanding Structure 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2.2m, Conductor Attachement 10.1m)	ea		
5.3.404	D-DT-7850s4	Pole, H-Pole Intermediate Freestanding Structure 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2.3m, Conductor Attachement 11.0m)	ea		
5.3.405	D-DT-7850s4	Pole, H-Pole Intermediate Freestanding Structure 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2.4m, Conductor Attachement 12.0m)	ea		
5.3.406	D-DT-7850s4	Pole, H-Pole Intermediate Freestanding Structure 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2.5m, Conductor Attachement 12.9m)	ea		
5.3.407	D-DT-7850s4	Pole, H-Pole Intermediate Freestanding Structure 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2.6m, Conductor Attachement 13.7m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 3** on the following structures:					

D-DT-7801 H-Pole Structure 8m X-Arm In-Line Strain 0-70kN Range D-DT-7802 H-Pole Structure 8m X-Arm In-Line Strain 70-120kN Range D-DT-7811 H-Pole Structure 10m X-Arm In-Line Strain 0-70kN Range D-DT-7812 H-Pole Structure 10m X-Arm In-Line Strain 70-120kN Range					
5.3.408	D-DT-7851s4	Pole, In-Line Strain 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.409	D-DT-7851s4	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.410	D-DT-7851s4	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.411	D-DT-7851s4	Pole, In-Line Strain 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
5.3.412	D-DT-7851s4	Pole, In-Line Strain 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
5.3.413	D-DT-7851s4	Pole, In-Line Strain 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 3** on the following structures:					
D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-120kN Range D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range D-DT-7818 H-Pole Structure 10m X-Arm Terminal 70-120kN Range					

5.3.414	D-DT-7851s4	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.415	D-DT-7851s4	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.416	D-DT-7851s4	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.417	D-DT-7851s4	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
5.3.418	D-DT-7851s4	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
5.3.419	D-DT-7851s4	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 4** on the following structures:					
D-DT-7800 H-Pole Intermediate Structure 8m X-arm, D-DT-7810 H-Pole Intermediate Structure 10m X-Arm					
5.3.420	D-DT-7850s5	Pole, H-Pole Intermediate Freestanding Structure 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2.1m, Conductor Attachement 9.2m)	ea		
5.3.421	D-DT-7850s5	Pole, H-Pole Intermediate Freestanding Structure 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2.2m, Conductor Attachement 10.1m)	ea		

5.3.422	D-DT-7850s5	Pole, H-Pole Intermediate Freestanding Structure 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2.3m, Conductor Attachement 11.0m)	ea		
5.3.423	D-DT-7850s5	Pole, H-Pole Intermediate Freestanding Structure 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2.4m, Conductor Attachement 12.0m)	ea		
5.3.424	D-DT-7850s5	Pole, H-Pole Intermediate Freestanding Structure 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2.5m, Conductor Attachement 12.9m)	ea		
5.3.425	D-DT-7850s5	Pole, H-Pole Intermediate Freestanding Structure 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2.6m, Conductor Attachement 13.7m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 4** on the following structures:					
D-DT-7801 H-Pole Structure 8m X-Arm In-Line Strain 0-70kN Range D-DT-7802 H-Pole Structure 8m X-Arm In-Line Strain 70-120kN Range D-DT-7811 H-Pole Structure 10m X-Arm In-Line Strain 0-70kN Range D-DT-7812 H-Pole Structure 10m X-Arm In-Line Strain 70-120kN Range					
5.3.426	D-DT-7851s5	Pole, In-Line Strain 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.427	D-DT-7851s5	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.428	D-DT-7851s5	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		

5.3.429	D-DT-7851s5	Pole, In-Line Strain 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
5.3.430	D-DT-7851s5	Pole, In-Line Strain 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
5.3.431	D-DT-7851s5	Pole, In-Line Strain 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **TYPE 4** on the following structures:					
D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-120kN Range D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range D-DT-7818 H-Pole Structure 10m X-Arm Terminal 70-120kN Range					
5.3.432	D-DT-7851s5	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.433	D-DT-7851s5	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.434	D-DT-7851s5	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.435	D-DT-7851s5	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		

5.3.436	D-DT-7851s5	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
5.3.437	D-DT-7851s5	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **ROCK** on the following structures:					
D-DT-7800 H-Pole Intermediate Structure 8m X-arm, D-DT-7810 H-Pole Intermediate Structure 10m X-Arm					
5.3.438	D-DT-7850s1	Pole, H-Pole Intermediate Freestanding Structure 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2.1m, Conductor Attachement 9.2m)	ea		
5.3.439	D-DT-7850s1	Pole, H-Pole Intermediate Freestanding Structure 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2.2m, Conductor Attachement 10.1m)	ea		
5.3.440	D-DT-7850s1	Pole, H-Pole Intermediate Freestanding Structure 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2.3m, Conductor Attachement 11.0m)	ea		
5.3.441	D-DT-7850s1	Pole, H-Pole Intermediate Freestanding Structure 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2.4m, Conductor Attachement 12.0m)	ea		
5.3.442	D-DT-7850s1	Pole, H-Pole Intermediate Freestanding Structure 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2.5m, Conductor Attachement 12.9m)	ea		
5.3.443	D-DT-7850s1	Pole, H-Pole Intermediate Freestanding Structure 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2.6m, Conductor Attachement 13.7m)	ea		

5.3	Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **ROCK** on the following structures:					
D-DT-7801 H-Pole Structure 8m X-Arm In-Line Strain 0-70kN Range D-DT-7802 H-Pole Structure 8m X-Arm In-Line Strain 70-120kN Range D-DT-7811 H-Pole Structure 10m X-Arm In-Line Strain 0-70kN Range D-DT-7812 H-Pole Structure 10m X-Arm In-Line Strain 70-120kN Range					
5.3.444	D-DT-7851s1	Pole, In-Line Strain 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.445	D-DT-7851s1	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.446	D-DT-7851s1	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.447	D-DT-7851s1	Pole, In-Line Strain 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
5.3.448	D-DT-7851s1	Pole, In-Line Strain 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
5.3.449	D-DT-7851s1	Pole, In-Line Strain 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

5.3	Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Excavate, barricade, dispose of excavated material, transport to pole position imported material, supply and install complete foundations for soil **ROCK** on the following structures:					
D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-120kN Range D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range D-DT-7818 H-Pole Structure 10m X-Arm Terminal 70-120kN Range					
5.3.450	D-DT-7851s1	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
5.3.451	D-DT-7851s1	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
5.3.452	D-DT-7851s1	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
5.3.453	D-DT-7851s1	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
5.3.454	D-DT-7851s1	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
Sub-Total Kingbird & Chikadee Single Circuit H-Pole Foundations					

5.3	**Foundation Installation Continue: VOLUME 3 PART 2 - Activity Stage 5.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Extra-over items for C.1: (Rates are only for the excavation of the foundations - contracor must specify the method of construction)					
5.3.455		Intermediate material excavation	m^3		
5.3.456		Hard Rock excavation	m^3		

5.3.457		Boulder excavation - Class A	m^3		
5.3.458		Boulder excavation - Class B	m^3		
Sub-Total Kingbird & Chikadee Single Circuit H-Pole Foundations					

5.4	**Stay Rod & Foundations Design or Verification: VOLUME 3 PART 2 - Activity Stage 5.4**				
The appointment of a professional civil engineer will be the responsibility of the contractor and will be paid by the contractor - costs must be included in the tender. Foundation designs are provided for all possible soil types but needs to be verified and approved by a Prof Civil Engineer for each installation. Should the contractor wish to construct a foundation of a different design, all design drawings will be submitted to Eskom for acceptance. The contractor will accept full responsibility for these designs. Eskom will not pay for these designs unless the submitted Eskom designs cannot be used due to prevailing site conditions. This decision will be taken by the Engineer. Foundation designs for all structures shall be in accordance with 0501KR-01 rev 1, 240-47172520 (TRMSCAAC5) and SCSASABK8 by a registered professional in each type of soil (type 1, 2, 3, 4 soft rock and hard rock). Designs to be Eskom Copyright.					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
5.4.1	D-DT-7325s2	Design of the stay anchor for 19/2.65 1100MPa steel wire to 115kN.			
Verification of stay foundation to 115kN:					
5.4.2	D-DT-7325	Foundation for 19/2.65 1100MPa steel wire in Type 1 soil	ea		
5.4.3		Foundation for 19/2.65 1100MPa steel wire in Type 2 soil	ea		
5.4.4		Foundation for 19/2.65 1100MPa steel wire in Type 3 soil	ea		
5.4.5		Foundation for 19/2.65 1100MPa steel wire in Type 4 soil	ea		
5.4.6		Foundation for 19/2.65 1100MPa steel wire in Rock	ea		
Note Stay rod / anchors is part of the foundation material and must be supplied by the contractor The stay rod / anchors must be verified by the civil engineer accoding to the stay foundation design.					
5.4.7	2-WT/1288	Design of the stay anchor for 16mm 1400MPa wire rope to 215kN.	ea		
Verification of stay foundation to 215kN:					
5.4.8	0.69/GS1/ T230/T1	Foundation for 16mm wire 1400MPa rope in Type 1 soil	ea		

5.4.9	0.69/GS1/ T230/T2	Foundation for 16mm wire 1400MPa rope in Type 2 soil	ea		
5.4.10	0.69/GS1/ T230/T3	Foundation for 16mm wire 1400MPa rope in Type 3 soil	ea		
5.4.11	0.69/GS1/ T230/T4	Foundation for 16mm wire 1400MPa rope in Type 4 soil	ea		
5.4.12	0.69/GS1/ T230/SR	Foundation for 16mm wire 1400MPa rope in Soft Rock	ea		
5.4.13	0.69/GS1/ T230/HR	Foundation for 16mm wire 1400MPa rope in Hard Rock	ea		
5.4	**Stay Rod & Foundations Design or Verification cont: VOLUME 3 PART 2 - Activity Stage 5.4**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Note Stay rod / anchors is part of the foundation material and must be supplied by the contractor The stay rod / anchors must be verified by the civil engineer accoding to the stay foundation design.					
5.4.14	2-WT/1299	Design of the stay anchor for 19mm 1400MPa wire rope to 272kN.	ea		
Verification of stay foundation to 272kN:					
5.4.15	DvT 1004-03	Foundation for 19mm wire 1400MPa rope in Type 1 soil	ea		
5.4.16	DvT 1004-03	Foundation for 19mm wire 1400MPa rope in Type 2 soil	ea		
5.4.17	DvT 1004-03	Foundation for 19mm wire 1400MPa rope in Type 3 soil	ea		
5.4.18	DvT 1004-03	Foundation for 19mm wire 1400MPa rope in Type 4 soil	ea		
5.4.19	DvT 1004-04	Foundation for 19mm wire 1400MPa rope in Hard Rock	ea		
		Sub-Total Stay Rod & Foundations Design or Verification			
5.5	**Stay Rod and Foundation Installation: VOLUME 3 PART 2 - Activity Stage 5.5**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**

The appointment of a profesional civil engineer will be the responsibility of the contractor and will be will be paid by the contractor - costs must be included in the tender.
Geo-Tech nominations must be verified by a profesional Civil Engineer for the stays at each structure and the approved foundation must be installed for each stay.
Excavate, barricade, supply and transport to each stay position the anchor and imported/foundation material, dispose excavated material, supply, and install complete stay foundation based on the geo-tech nomination at the structures:
The stay rod/anchor is part of the foundation material. All foundation material must be supplied by the contractor and the costs must be included in the tender.
The stay rod / anchors must be verified by the civil engineer accoding to the stay foundation design.
Contractor invoices must be for the installed foundation based on the geo-tech soil nomination which is verified by the civil engineer.

Installation of 115kN stay rod and foundations:					
5.5.14	D-DT-7235	Excavate and transport imported material, barricade and dispose of excavated material, supply & install complete stay rod and foundation for type 1 soil.	ea		
5.5.15		Excavate and transport imported material, barricade and dispose of excavated material, supply & install complete stay rod and foundation for type 2 soil.	ea		
5.5.16		Excavate and transport imported material, barricade and dispose of excavated material, supply & install complete stay rod and foundationfor type 3 soil.	ea		
5.5.17		Excavate and transport imported material, barricade and dispose of excavated material, supply & install complete stay rod and foundation for type 4 soil.	ea		
5.5.18		Excavate and transport imported material, barricade and dispose of excavated material, supply & install complete stay rod and foundation for Rock type.	ea		
Installation of 115kN temporary stay foundations or anchors:					
5.5.19		Excavate and transport imported material, barricade and dispose of excavated material install complete temporary stay rod and foundattion for temporary stays	ea		
Proof Load Testing of 115kN Stays: Contractor to do proof load test on every stay according to table V2.15 on page number of Volume 2.					
5.5.20		Contractor to supply proof loading equipment cerificate to the Project Engineer 2 weeks after contract award.	ea		

5.5.21		Proof load testing of 115kN stay rod in foundation installation.	ea		
5.5.22		Compile and submission of all "Proof Load Test" records to the Employer	ea		
Sub-Total 115kN Stay Rod and Foundation Installations					

5.5	**Stay Rod and Foundation Installation cont: VOLUME 3 PART 2 - Activity Stage 5.5**				
Item	**Reference Drawing**	**Description**	**Unit**		
Installation of 215kN stay rod and foundations:					
5.5.23	0.69/GS1/ T230/T1	Excavate and transport imported material, barricade and dispose of excavated material & install complete stay rod and foundation for type 1 soil.	ea		
5.5.24	0.69/GS1/ T230/T2	Excavate and transport imported material, barricade and dispose of excavated material & install complete stay rod and foundation for type 2 soil.	ea		
5.5.25	0.69/GS1/ T230/T3	Excavate and transport imported material, barricade and dispose of excavated material & install complete stay rod and foundation for type 3 soil.	ea		
5.5.26	0.69/GS1/ T230/T4	Excavate and transport imported material, barricade and dispose of excavated material, supply & install complete stay rod and foundation for type 4 soil.	ea		
5.5.27	0.69/GS1/ T230/SR	Excavate and transport imported material, barricade and dispose of excavated material & install complete stay rod and foundation for soft Rock type.	ea		
5.5.28	0.69/GS1/ T230/HR	Excavate and transport imported material, barricade and dispose of excavated material & install complete stay rod and foundation for hard Rock type.	ea		

5.5	**Stay Rod and Foundation Installation cont: VOLUME 3 PART 2 - Activity Stage 5.5**

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Temporary Stays: 16mm 1400MPa 215kN Steel Rope Stay rod and assemblies:					
5.5.29		Excavate and transport imported material, barricade and dispose of excavated material install complete temporary stay rod and foundattion for temporary stays	ea		
Proof Load Testing of 215kN Stays: Contractor to do proof load test on every stay according to table V2.15 on page number of Volume 2.					
5.5.30		Contractor to supply proof loading equipment cerificate to the Project Engineer 2 weeks after contract award.	ea		
5.5.31		Proof load testing of 215kN stay rod in foundation installation.	ea		
5.5.32		Compile and submission of all "Proof Load Test" records to the Employer	ea		
Sub-Total 215kN Stay Rod and Foundation Installations					

5.5	Stay Rod and Foundation Installation cont: VOLUME 3 PART 2 - Activity Stage 5.5				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Installation of 272kN stay rod and foundations:					
5.5.23	DvT 1004-03	Excavate and transport imported material, barricade and dispose of excavated material & install complete stay rod and foundation for type 1 soil.	ea		
5.5.24	DvT 1004-03	Excavate and transport imported material, barricade and dispose of excavated material & install complete stay rod and foundation for type 2 soil.	ea		
5.5.25	DvT 1004-03	Excavate and transport imported material, barricade and dispose of excavated material & install complete stay rod and foundation for type 3 soil.	ea		
5.5.26	DvT 1004-03	Excavate and transport imported material, barricade and dispose of excavated material, supply & install complete stay rod and foundation for type 4 soil.	ea		

5.5.27	DvT 1004-04	Excavate and transport imported material, barricade and dispose of excavated material & install complete stay rod and foundation for Hard Rock type.	ea		

5.5	Stay Rod and Foundation Installation cont: VOLUME 3 PART 2 - Activity Stage 5.5				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Temporary Stays: 19mm 1400MPa 272kN Steel Rope Stay rod and assemblies:					
5.5.29		Excavate and transport imported material, barricade and dispose of excavated material install complete temporary stay rod and foundattion for temporary stays	ea		
Proof Load Testing of 272kN Stays: Contractor to do proof load test on every stay according to table V2.15 on page number of Volume 2.					
5.5.30		Contractor to supply proof loading equipment cerificate to the Project Engineer 2 weeks after contract award.	ea		
5.5.31		Proof load testing of 272kN stay rod in foundation installation.	ea		
5.5.32		Compile and submission of all "Proof Load Test" records to the Employer	ea		
Sub-Total 272kN Stay Rod and Foundation Installations					

5.6	Barricading/Protecting of all open excavations: VOLUME 3 PART 2 - Activity Stage 5.6				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Provide, barricade, transport to excavation and install barricade for all excavated areas:					
5.6.1		Barricading/Protecting of all open excavations for structure foundations	ea		
5.6.2		Barricading/Protecting of all open excavations for permanent and temporary stays	ea		
Sub-Total 5.6 Barricading and protection off all open areas					

Total Activity 5 Foundations Installation - Carried to BoQ Summary					

Activity Stage 6: Assembly and Erection of Power Line Structures					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
6.1	**Assembly and erection of all structures: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2**				
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
Intermediate Suspension Lattice Structures 247 A					
6.1.1	247A	247A 0 degree suspension structure, 132kV lattice steel. 14.1m CAH	ea	cost plus fee	
6.1.1.1	247A	Stubs for variation of legg lengths due to ground levels - 247A 0 degree suspension structure, 132kV lattice steel. 14.1m CAH	ea	cost plus fee	
6.1.2	247A	247A 0 degree suspension structure, 132kV lattice steel. 17.1m CAH	ea	cost plus fee	
6.1.2.1	247A	Stubs for variation of legg lengths due to ground levels - 247A 0 degree suspension structure, 132kV lattice steel. 17.1m CAH	ea	cost plus fee	
6.1.3	247A	247A 0 degree suspension structure, 132kV lattice steel. 18.1m CAH	ea	cost plus fee	
6.1.3.1	247A	Stubs for variation of legg lengths due to ground levels - 247A 0 degree suspension structure, 132kV lattice steel. 18.1m CAH	ea	cost plus fee	
6.1.4	247A	247A 0 degree suspension structure, 132kV lattice steel. 19.1m CAH	ea	cost plus fee	
6.1.4.1	247A	Stubs for variation of legg lengths due to ground levels - 247A 0 degree suspension structure, 132kV lattice steel. 19.1m CAH	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
0-30 degree Strain Lattice Structures 247B					
6.1.5	247B	247B 0-40 degree strain structure, 132kV lattice steel. 14.1m CAH	ea	cost plus fee	
6.1.5.1	247B	Stubs for variation of legg lengths due to ground levels - 247B 0-40 degree strain structure, 132kV lattice steel. 14.1m CAH	ea	cost plus fee	
6.1.6	247B	247B 0-40 degree strain structure, 132kV lattice steel. 17.1m CAH	ea	cost plus fee	
6.1.6.1	247B	Stubs for variation of legg lengths due to ground levels - 247B 0-40 degree strain structure, 132kV lattice steel. 17.1m CAH	ea	cost plus fee	
6.1.7	247B	247B 0-40 degree strain structure, 132kV lattice steel. 19.1m CAH	ea	cost plus fee	
6.1.7.1	247B	Stubs for variation of legg lengths due to ground levels - 247B 0-40 degree strain structure, 132kV lattice steel. 19.1m CAH	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
40-90 degree Strain Lattice Structures 247C					

6.1.8	247C	247C 40-90 degree strain structure, 132kV lattice steel. 14.1m CAH	ea	cost plus fee	
6.1.8.1	247C	Stubs for variation of legg lengths due to ground levels - 247C 40-90 degree strain structure, 132kV lattice steel. 14.1m CAH	ea	cost plus fee	
6.1.9	247C	247C 40-90 degree strain structure, 132kV lattice steel. 17.1m CAH	ea	cost plus fee	
6.1.9.1	247C	Stubs for variation of legg lengths due to ground levels - 247C 40-90 degree strain structure, 132kV lattice steel. 17.1m CAH	ea	cost plus fee	
6.1.10	247C	247C 40-90 degree strain structure, 132kV lattice steel. 19.1m CAH	ea	cost plus fee	
6.1.10.1	247C	Stubs for variation of legg lengths due to ground levels - 247C 40-90 degree strain structure, 132kV lattice steel. 19.1m CAH	ea	cost plus fee	
0-40 degree Terminal Lattice Structures 247C					
6.1.11	247C terminal	247C 0-40 degree terminal structure, 132kV lattice steel. 14.1m CAH	ea	cost plus fee	
6.1.11.1	247C terminal	Stubs for variation of legg lengths due to ground levels - 247C 0-40 degree terminal structure, 132kV lattice steel. 14.1m CAH	ea	cost plus fee	
Sub-Total 247 Lattice Structures					

6.1	**Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
258C Intermediate Suspension Braced Double Circuit Structures					

6.1.12	258C	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 20m (Bottom Attachment 11.2m)	ea	cost plus fee	
6.1.13	258C	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 22m (Bottom Attachment 13.2m)	ea	cost plus fee	
6.1.14	258C	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 24m (Bottom Attachment 15.2m)	ea	cost plus fee	
			Sub-Total 258C		

6.1	**Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
2-WT/15049 Intermediate 0 - 2º Suspension Mono-Pole Double Circuit Structures					
6.1.15	2-ET/15049	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 20m (Plant 2.6m - Bottom Attachement 10.5m)	ea	cost plus fee	
6.1.16	2-ET/15049	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 22m (Plant 2.8m - Bottom Attachement 12.4m)	ea	cost plus fee	
6.1.17	2-ET/15049	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 24m (Plant 3m - Bottom Attachement 14.2m)	ea	cost plus fee	
6.1.18	2-ET/15049	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 26m (Plant 3.2m - Bottom Attachement 16.0m)	ea	cost plus fee	
6.1.19	2-ET/15049	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 28m (Plant 3.4m - Bottom Attachement 17.8m)	ea	cost plus fee	
6.1.20	2-ET/15049	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 30m (Plant 3.6m - Bottom Attachement 19.6m)	ea	cost plus fee	
			Sub-Total 2-WT/15059		

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2

Twin Kingbird/Bersfort Single Circuit Mono-Pole Structures
2-WT/1294 Intermediate 0 - 2º Suspension
2-WT/1295 Strain 2º - 90º
2-WT/1296 Angle Strain 3-Pole 2º-90º
2-WT/1297 3-Pole Terminal
2-WT/1298 Inline Strain

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
2-WT/1294 Intermediate 0 - 2º Suspension					
6.1.21	2-WT/1294	Pole, St 132kV Susp 21m	ea	cost plus fee	
6.1.22		Pole, St 132kV Susp 22m	ea	cost plus fee	
6.1.23		Pole, St 132kV Susp 23m	ea	cost plus fee	
6.1.24		Pole, St 132kV Susp 24m	ea	cost plus fee	
6.1.25		Pole, St 132kV Susp 25m	ea	cost plus fee	
6.1.26		Pole, St 132kV Susp 26m	ea	cost plus fee	
6.1.27		Pole, St 132kV Susp 29m	ea	cost plus fee	
2-WT/1295 Strain 2º - 90º					
6.1.28	2-WT/1295	Pole, St 132kV Angle Strain (0°-90°) 20m	ea	cost plus fee	
6.1.29		Pole, St 132kV Angle Strain (0°-90°) 22m	ea	cost plus fee	
6.1.30		Pole, St 132kV Angle Strain (0°-90°) 23m	ea	cost plus fee	
6.1.31		Pole, St 132kV Angle Strain (0°-90°) 24m	ea	cost plus fee	
6.1.32		Pole, St 132kV Angle Strain (0°-90°) 28m	ea	cost plus fee	
6.1.33		Pole, St 132kV Angle Strain (0°-90°) 30m	ea	cost plus fee	
2-WT/1296 Angle Strain 3-Pole 2º-90º					
6.1.34	2-WT/1296	3- Pole, St 132kV Strain 11.1m (2 x 11.1m & 1 x 9.1m)	ea	cost plus fee	
6.1.35		3- Pole, St 132kV Strain 13.1m (2 x 13.1m & 1 x 11.1m)	ea	cost plus fee	
6.1.36		3- Pole, St 132kV Strain 14m (2 x 14.1m & 1 x 12.1m)	ea	cost plus fee	

6.1.37		3- Pole, St 132kV Strain 16.1m (2 x 16.1m & 1 x 14.1m)	ea	cost plus fee	
2-WT/1297 3-Pole Terminal					
6.1.38	2-WT/1297	3- Pole Term St 132kV 14m (Include 3 poles of 14m long)	ea	cost plus fee	
6.1.39		3- Pole Term St 132kV 16m (Include 3 poles of 16m long)	ea	cost plus fee	
Sub-Total Twin Configurations					

6.1	**Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2**				
Bersfort Single Circuit Mono-Pole Guided Structures **2-WT/1281 Guided Braced Intermediate / Suspension** **2-WT/1284 Angle Strain 0 - 90º** **2-WT/1285 Guided Inline Strain 3-Pole Structore 0 - 5º** **2-WT/1286 Guided Inline Strain 3-Pole Structore 5 - 90º**					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
2-WT/1281 Guided Braced Intermediate / Suspension					
6.1.40	2-WT/1281	Pole , St 132kV Guyed Susp 16.1m Bottom Attachment 10.7)	ea	cost plus fee	
6.1.41		Pole , St 132kV Guyed Susp 18.2m Bottom Attachment 12.8)	ea	cost plus fee	
6.1.42		Pole , St 132kV Guyed Susp 21.2m Bottom Attachment 15.8)	ea	cost plus fee	
6.1.43		Pole, St 132kV Guyed Susp 24.2m (Bottom Attachment 18.8)	ea	cost plus fee	
2-WT/1284 Angle Strain 0 - 90º					
6.1.44	2-WT/1284	Pole, St 132kV Guyed Angle Strain (0°-90°) 18.2m (Bottom Attachement 11.2m)	ea	cost plus fee	
6.1.45		Pole, St 132kV Guyed Angle Strain (0°-90°) 21.2m (Bottom Attachement 14.2m)	ea	cost plus fee	

6.1.46		Pole, St 132kV Guyed Angle Strain (0°-90°) 24.2m (Bottom Attachement 17.2m)	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
2-WT/1285 Guided Inline Strain 3-Pole Structore 0 - 5º					
6.1.47	2-WT/1285	Pole, St 132kV Guyed Angle Strain 3-pole structure (0°–5°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea	cost plus fee	
6.1.48		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea	cost plus fee	
6.1.49		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea	cost plus fee	
6.1.50		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea	cost plus fee	
6.1.51		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labor Rate**

C		**Line Construction**			
C.3		**Assembly and Erection of Structures**			
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
2-WT/1286 Guided Strain 3-Pole Structore 5 - 90º					
6.1.52	2-WT/1286	Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea	cost plus fee	
6.1.53		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea	cost plus fee	
6.1.54		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea	cost plus fee	
6.1.55		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea	cost plus fee	
6.1.56		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°-90°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea	cost plus fee	
				Sub-Total Bersfort Monopole	

6.1	**Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2**

Chikadee / Kingbird Single Circuit Mono-Pole Structures
D-DT-7611 Intermediate / Suspension
D-DT-7615 Angle Strain 0 - 90º
D-DT-7618 3-Pole Strain Structore 0 - 90º
2-WT/1213 3-Pole Terminal Structore 0 - 90º

Item	Reference Drawing	Description	Unit	Material Rate	Labor Rate

Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
D-DT-7611 Intermediate / Suspension					
6.1.57	D-DT-7611	Pole, St 132kV Susp 20 m 23kN (Plant 2.6m, Bottom Att 13 m)	ea	cost plus fee	
6.1.58	D-DT-7611	Pole, St 132kV Susp 21 m 23kN (Plant 2.7m, Bottom Att 13.9 m)	ea	cost plus fee	
6.1.59	D-DT-7611	Pole, St 132kV Susp 22 m 23kN (Plant 2.8m, Bottom Att 14.8 m)	ea	cost plus fee	
6.1.60	D-DT-7611	Pole, St 132kV Susp 22 m 23kN (Plant 2.9m, Bottom Att 15.7 m)	ea	cost plus fee	
6.1.61	D-DT-7611	Pole, St 132kV Susp 22 m 23kN (Plant 3m, Bottom Att 16.6 m)	ea	cost plus fee	
D-DT-7615 Angle Strain 0 - 90º					
6.1.62	D-DT-7615	Pole, St 132kV Strain 0-90° 20 m (Bottom Attachement 13 m)	ea	cost plus fee	
6.1.63	D-DT-7615	Pole, St 132kV Strain 0-90° 21 m (Bottom Attachement 14 m)	ea	cost plus fee	
6.1.64	D-DT-7615	Pole, St 132kV Strain 0-90° 24 m (Bottom Attachement 17 m)	ea	cost plus fee	
6.1.65	D-DT-7615	Pole, St 132kV Strain 0-90° 30 m (Bottom Attachement 23 m)	ea	cost plus fee	

6.1	**Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**

Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
D-DT-7618 3-Pole Strain Structore 0 - 90º					
6.1.66	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 8 m and 1 x 10 m poles (Plant 1.6m, Bottom Attachement 6.2 m)	ea	cost plus fee	
6.1.67	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 9 m and 1 x 11 m poles (Plant 1.7m, Bottom Attachement 7.1 m)	ea	cost plus fee	
6.1.68	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 10 m and 1 x 12 m poles (Plant 1.8m, Bottom Attachement 8 m)	ea	cost plus fee	
6.1.69	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 11 m and 1 x 13 m poles (Plant 1.9m, Bottom Attachement 8.9 m)	ea	cost plus fee	
6.1.70	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 12 m and 1 x 14 m poles (Plant 2m, Bottom Attachement 9.8m)	ea	cost plus fee	
6.1.71	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 13 m and 1 x 15 m poles (Plant 2.1m, Bottom Attachement 10.7m)	ea	cost plus fee	
6.1.72	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 14 m and 1 x 16 m poles (Plant 2.2m, Bottom Attachement 11.6m)	ea	cost plus fee	
6.1.73	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 15 m and 1 x 17 m poles (Plant 2.3m, Bottom Attachement 12.5m)	ea	cost plus fee	
6.1.74	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 16 m and 1 x 18 m poles (Plant 2.4m, Bottom Attachement 13.4m)	ea	cost plus fee	
6.1.75	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 17 m and 1 x 19 m poles (Plant 2.4m, Bottom Attachement 14.3m)	ea	cost plus fee	

6.1.76	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 18 m and 1 x 20 m poles (Plant 2.6m, Bottom Attachement 15.2m)	ea	cost plus fee	
6.1.77	D-DT-7618	Pole, 3-Pole Strain Structure 0-90° 2 x 19 m and 1 x 21 m poles (Plant 2.7m, Bottom Attachement 16.1m)	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
2-WT-1213 3-Pole Terminal Structore					
6.1.78	2-WT-1213 Sheet 3 & 4	Pole, 3-Pole Term Structure 0-90° 3 x 11.6 poles (Plant 2m, Bottom Attachement 9.6m)	ea	cost plus fee	
6.1.79	2-WT-1213 Sheet 3 & 4	Pole, 3-Pole Term Structure 0-90° 3 x 12.6 poles (Plant 2m, Bottom Attachement 10.6m)	ea	cost plus fee	
6.1.80	2-WT-1213 Sheet 3 & 4	Pole, 3-Pole Term Structure 0-90° 3 x 13.6 poles (Plant 2m, Bottom Attachement 11.6m)	ea	cost plus fee	
6.1.81	2-WT-1213 Sheet 3 & 4	Pole, 3-Pole Term Structure 0-90° 3 x 14.6 poles (Plant 2m, Bottom Attachement 12.6m)	ea	cost plus fee	
6.1.82	2-WT-1213 Sheet 3 & 4	Pole, 3-Pole Term Structure 0-90° 3 x 15.6 poles (Plant 2m, Bottom Attachement 13.6m)	ea	cost plus fee	
6.1.83	2-WT-1213 Sheet 3 & 4	Pole, 3-Pole Term Structure 0-90° 3 x 16.6 poles (Plant 2m, Bottom Attachement 14.6m)	ea	cost plus fee	

6.1.84	2-WT-1213 Sheet 3 & 4	Pole, 3-Pole Term Structure 0-90° 3 x 17.6 poles (Plant 2m, Bottom Attachement 15.6m)	ea	cost plus fee	
Sub-Total Kingbird Chikadee Single Circuit Monopole					

6.1	**Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2**				
Chikadee / Kingbird Single Circuit H-Pole Structure **D-DT-7800 H-Pole Intermediate Structure 8m X-arm** **D-DT-7801 H-Pole Structure 8m X-Arm In-Line Strain 0-70kN Range** **D-DT-7802 H-Pole Structure 8m X-Arm In-Line Strain 70-120kN Range** **D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-120kN Range** **D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range** **D-DT-7810 H-Pole Intermediate Structure 10m X-Arm** **D-DT-7811 H-Pole Structure 10m X-Arm In-Line Strain 0-70kN Range** **D-DT-7812 H-Pole Structure 10m X-Arm In-Line Strain 70-120kN Range** **D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range** **D-DT-7818 H-Pole Structure 10m X-Arm Terminal 70-120kN Range**					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
D-DT-7800 H-Pole Intermediate Structure 8m X-arm					
6.1.85	D-DT-7800	Pole, H-Pole Intermediate Freestanding Structure 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2.1m, Conductor Attachement 9.2m)	ea	cost plus fee	
6.1.86	D-DT-7800	Pole, H-Pole Intermediate Freestanding Structure 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2.2m, Conductor Attachement 10.1m)	ea	cost plus fee	
6.1.87	D-DT-7800	Pole, H-Pole Intermediate Freestanding Structure 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2.3m, Conductor Attachement 11.0m)	ea	cost plus fee	

6.1.88	D-DT-7800	Pole, H-Pole Intermediate Freestanding Structure 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2.4m, Conductor Attachement 12.0m)	ea	cost plus fee	
6.1.89	D-DT-7800	Pole, H-Pole Intermediate Freestanding Structure 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2.5m, Conductor Attachement 12.9m)	ea	cost plus fee	
6.1.90	D-DT-7800	Pole, H-Pole Intermediate Freestanding Structure 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2.6m, Conductor Attachement 13.7m)	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labor Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
D-DT-7801 H-Pole Structure 8m X-Arm In-Line Strain 0-70kN Range					
6.1.91	D-DT-7801	Pole, In-Line Strain 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea	cost plus fee	
6.1.92	D-DT-7801	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea	cost plus fee	
6.1.93	D-DT-7801	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea	cost plus fee	
6.1.94	D-DT-7801	Pole, In-Line Strain 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea	cost plus fee	

6.1.95	D-DT-7801	Pole, In-Line Strain 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea	cost plus fee	
6.1.96	D-DT-7801	Pole, In-Line Strain 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labor Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
D-DT-7802 H-Pole Structure 8m X-Arm In-Line Strain 70-120kN Range					
6.1.97	D-DT-7802	Pole, In-Line Strain 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea	cost plus fee	
6.1.98	D-DT-7802	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea	cost plus fee	
6.1.99	D-DT-7802	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea	cost plus fee	
6.1.100	D-DT-7802	Pole, In-Line Strain 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea	cost plus fee	
6.1.101	D-DT-7802	Pole, In-Line Strain 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea	cost plus fee	
6.1.102	D-DT-7802	Pole, In-Line Strain 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-120kN Range					
6.1.103	D-DT-7807	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea	cost plus fee	
6.1.104	D-DT-7807	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea	cost plus fee	
6.1.105	D-DT-7807	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea	cost plus fee	
6.1.106	D-DT-7807	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea	cost plus fee	
6.1.107	D-DT-7807	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea	cost plus fee	
6.1.108	D-DT-7807	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**

Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range					
6.1.109	D-DT-7808	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea	cost plus fee	
6.1.110	D-DT-7808	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea	cost plus fee	
6.1.111	D-DT-7808	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea	cost plus fee	
6.1.112	D-DT-7808	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea	cost plus fee	
6.1.113	D-DT-7808	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea	cost plus fee	
6.1.114	D-DT-7808	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
D-DT-7810 H-Pole Intermediate Structure 10m X-Arm					
6.1.115	D-DT-7810	Pole, H-Pole Intermediate Freestanding Structure 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2.1m, Conductor Attachement 9.2m)	ea	cost plus fee	

6.1.116	D-DT-7810	Pole, H-Pole Intermediate Freestanding Structure 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2.2m, Conductor Attachement 10.1m)	ea	cost plus fee	
6.1.117	D-DT-7810	Pole, H-Pole Intermediate Freestanding Structure 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2.3m, Conductor Attachement 11.0m)	ea	cost plus fee	
6.1.118	D-DT-7810	Pole, H-Pole Intermediate Freestanding Structure 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2.4m, Conductor Attachement 12.0m)	ea	cost plus fee	
6.1.119	D-DT-7810	Pole, H-Pole Intermediate Freestanding Structure 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2.5m, Conductor Attachement 12.9m)	ea	cost plus fee	
6.1.120	D-DT-7810	Pole, H-Pole Intermediate Freestanding Structure 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2.6m, Conductor Attachement 13.7m)	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
D-DT-7811 H-Pole Structure 10m X-Arm In-Line Strain 0-70kN Range					
6.1.122	D-DT-7811	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea	cost plus fee	
6.1.123	D-DT-7811	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea	cost plus fee	
6.1.124	D-DT-7811	Pole, In-Line Strain 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea	cost plus fee	

6.1.125	D-DT-7811	Pole, 2 x 19.2 m poles and 8m or 10m In-Line Strain crossarm (Plant 2m, Bottom Attachement 14.7m)	ea	cost plus fee	
6.1.126	D-DT-7811	Pole, 2 x 20.1 m poles and 8m or 10m In-Line Strain crossarm (Plant 2m, Bottom Attachement 15.6m)	ea	cost plus fee	
D-DT-7812 H-Pole Structure 10m X-Arm In-Line Strain 70-120kN Range					
6.1.122	D-DT-7812	Pole, 2 x 16.1 m poles and 8m or 10m In-Line Strain crossarm (Plant 2m, Bottom Attachement 11.6m)	ea	cost plus fee	
6.1.123	D-DT-7812	Pole, 2 x 17.1 m poles and 8m or 10m In-Line Strain crossarm (Plant 2m, Bottom Attachement 12.6m)	ea	cost plus fee	
6.1.124	D-DT-7812	Pole, 2 x 18.1 m poles and 8m or 10m In-Line Strain crossarm (Plant 2m, Bottom Attachement 13.7m)	ea	cost plus fee	
6.1.125	D-DT-7812	Pole, 2 x 19.2 m poles and 8m or 10m In-Line Strain crossarm (Plant 2m, Bottom Attachement 14.7m)	ea	cost plus fee	
6.1.126	D-DT-7812	Pole, 2 x 20.1 m poles and 8m or 10m In-Line Strain crossarm (Plant 2m, Bottom Attachement 15.6m)	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range					
6.1.127	D-DT-7817	Pole, 2 x 15.1 m H-Pole poles and 8m or 10m Term Structure 0-90° crossarm (Plant 2m, Bottom Attachement 10.6m)	ea	cost plus fee	

6.1.128	D-DT-7817	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea	cost plus fee	
6.1.129	D-DT-7817	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea	cost plus fee	
6.1.130	D-DT-7817	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea	cost plus fee	
6.1.131	D-DT-7817	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea	cost plus fee	
6.1.132	D-DT-7817	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea	cost plus fee	

6.1	Assembly and erection of all structures continue: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Include costs for safe stock-piling/ storage before transportation to pole / structure position. Transport to tower/pole position, assemble and erect the steel poles and lattice structures at specified positions.					
D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range					
6.1.134	D-DT-7818	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea	Cost plus fee	
6.1.135	D-DT-7818	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea	Cost plus fee	
6.1.136	D-DT-7818	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea	Cost plus fee	

6.1.137	D-DT-7818	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea	Cost plus fee	
6.1.138	D-DT-7818	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea	Cost plus fee	
Sub-Total H-Pole Single Circuit					

6.2	**Assembly and installation of stay assemblies: VOLUME 3 PART 2 - Activity Stage 6.1 & 6.2**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Transport to each stay position, install and dispose excess material complete stay assemblies:					
19/2.65 1100MPa 115kN Steel Wire Stay assemblies:					
6.2.1	D-DT-7325s2	Transport material to site and install complete 19/2.65 1100MPa 115kN Steel Wire Stay assembly.	ea		
Temporary Stays: 19/2.65 1100MPa 115kN Steel Wire Stay rod and assemblies:					
6.2.2		Transport material to site and install complete 115kN temporary stay assembly.	ea		
6.2.3		Complete removal all temporary stays after completion of stringing activities and re-instate sites.	ea		
16mm 1400MPa 215kN Steel Rope Stay assemblies:					
6.2.4	2-WT/1288	Transport material to site and install complete 16mm 1400MPa 215kN Steel Rope Stay assembly.	ea		
Temporary Stays: 16mm 1400MPa 215kN Steel Rope Stay rod and assemblies:					
6.2.5		Transport material to site and install complete 215kN temporary stay assembly.	ea		
6.2.6		Complete removal all temporary stays after completion of stringing activities and re-instate sites.	ea		
19mm 1400MPa 272kN Steel Rope Stay assemblies:					
6.2.7	2-WT/1299	Transport material to site and install complete 19mm 1400MPa 272kN Steel Rope Stay assembly.	ea		

Temporary Stays: 16mm 1400MPa 272kN Steel Rope Stay rod and assemblies:					
6.2.8		Transport material to site and install complete 272kN temporary stay assembly.	ea		
6.2.9		Complete removal all temporary stays after completion of stringing activities and re-instate sites.	ea		
Sub-Total Stay Assembly Installations					
Total 6 Total Assembly and Erection of Power Line Structures Carried to BoQ Summary					

Activity Stage 7: Power Line Earthing

NOTE: Although the additional earthing is catered for in this quotation, only the actual installed additional earthing will be invoiced. All soil resistivity tests and earth electrod resistance tests and results will be monitored by the Clerk of works and will be submitted to the engineer. Should the soil conditions be such that the installation of additional earthing does not adequately remedy the tower footing resistance, the engineer should be contacted immediately.
Install and bond the following tower earthing for the structures:

The earth electrode material will be provided by Eskom. Quote on soil to be imported in the material column.

Note: Earths must be installed and towers must be connected to each other before the concrete cap is casted. The Cu strap should thus be encased in the concrete cap.

7.1 Transport and installation of power line structure earthing: VOLUME 3 PART 2 - Activity Stage 7.1

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
Excavate, barricade, dispose of excavated material, supply and transport to pole position imported soil material, transport earthing material and install complete earthing in soil TYPE 1 on the following structures:					
7.1.1	SCSASABF9	Bond the 3-Poles of the terminal structures together and to the substation earth mat by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		
7.1.2	SCSASABF9	Bond the 3 poles of 3-Pole structures to each other by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		

7.1.3	SCSASABF9	Install a 40 x 3 mm galvanised steel strap within eatch lattice tower foundation to connect the steel stub to the foundation re-inforcement	ea		
7.1.4	SCSASABF9	Install 25mm² Bare Conductor for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		
7.1.5	SCSASABF9	Install 10mm copper claded steel for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		

7.1	**Transport and installation of power line structure earthing Cont: VOLUME 3 PART 2 - Activity Stage 7.1**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, supply and transport to pole position imported soil material, transport earthing material and install complete earthing in soil TYPE 1 on the following structures:					
7.1.6	2-WT/763 D-DT-0642	Excavate, install complete 3 point star earth electrode	ea		
7.1.7	-	Excavate, install 1.6m x 16mm dia coper claded singel spike earth electrode	ea		
7.1.8	-	Backfill and compact earth spike holes, with 1:3 Agricultural gypsum/top soil mixture	m³		
7.1.9	-	Backfill and compact first ±100mm thick layer in earth trenches, with 1:3 Agricultural gypsum/top soil mixture, around earth rod	m³		
7.1.10	-	Backfill and compact top layers in earth trenches, with excavated top soil material	m³		

7.1	Transport and installation of power line structure earthing cont: VOLUME 3 PART 2 - Activity Stage 7.1				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, supply and transport to pole position imported soil material, transport earthing material and install complete earthing in soil TYPE 2 on the following structures:					
7.1.11	SCSASABF9	Bond the 3-Poles of the terminal structures together and to the substation earth mat by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		
7.1.12	SCSASABF9	Bond the 3 poles of 3-Pole structures to each other by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		
7.1.13	SCSASABF9	Install a 40 x 3 mm galvanised steel strap within each lattice tower foundation to connect the steel stub to the foundation re-inforcement	ea		
7.1.14	SCSASABF9	Install 25mm² Bare Conductor for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		
7.1.15	SCSASABF9	Install 10mm copper claded steel for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		
7.1.16	2-WT/763 D-DT-0642	Excavate, install complete 3 point star earth electrode	ea		
7.1.17	-	Excavate, install 1.5m x 16mm dia coper claded singel spike earth electrode	ea		
7.1.18	-	Backfill and compact earth spike holes, with 1:3 Agricultural gypsum/top soil mixture	m³		
7.1.19	-	Backfill and compact first ±100mm thick layer in earth trenches, with 1:3 Agricultural gypsum/top soil mixture, around earth rod	m³		

7.1.20	-	Backfill and compact top layers in earth trenches, with excavated top soil material	m³		

7.1	Transport and installation of power line structure earthing cont: VOLUME 3 PART 2 - Activity Stage 7.1				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, supply and transport to pole position imported soil material, transport earthing material and install complete earthing in soil TYPE 3 on the following structures:					
7.1.21	SCSASABF9	Bond the 3-Poles of the terminal structures together and to the substation earth mat by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		
7.1.22	SCSASABF9	Bond the 3 poles of 3-Pole structures to each other by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		
7.1.23	SCSASABF9	IInstall a 40 x 3 mm galvanised steel strap within each lattice tower foundation to connect the steel stub to the foundation re-inforcement	ea		
7.1.24	SCSASABF9	Install 25mm² Bare Conductor for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		
7.1.25	SCSASABF9	Install 10mm copper claded steel for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		
7.1.26	2-WT/763 D-DT-0642	Excavate, install complete 3 point star earth electrode	ea		
7.1.27	-	Excavate, install 1.5m x 16mm dia coper claded singel spike earth electrode	ea		

7.1.28	-	Backfill and compact earth spike holes, with 1:3 Agricultural gypsum/top soil mixture	m³		
7.1.29	-	Backfill and compact first ±100mm thick layer in earth trenches, with 1:3 Agricultural gypsum/top soil mixture, around earth rod	m³		
7.1.30	-	Backfill and compact top layers in earth trenches, with excavated top soil material	m³		

7.1	**Transport and installation of power line structure earthing cont: VOLUME 3 PART 2 - Activity Stage 7.1**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, supply and transport to pole position imported soil material, transport earthing material and install complete earthing in soil TYPE 4 on the following structures:					
7.1.21	SCSASABF9	Bond the 3-Poles of the terminal structures together and to the substation earth mat by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		
7.1.22	SCSASABF9	Bond the 3 poles of 3-Pole structures to each other by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		
7.1.23	SCSASABF9	Install a 40 x 3 mm galvanised steel strap within each lattice tower foundation to connect the steel stub to the foundation re-inforcement	ea		
7.1.24	SCSASABF9	Install 25mm² Bare Conductor for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		
7.1.25	SCSASABF9	Install 10mm copper claded steel for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		

7.1.26	2-WT/763 D-DT-0642	Excavate, install complete 3 point star earth electrode	ea		
7.1.27	-	Excavate, install 1.5m x 16mm dia coper claded single spike earth electrode	ea		
7.1.28	-	Backfill and compact earth spike holes, with 1:3 Agricultural gypsum/top soil mixture	m³		
7.1.29	-	Backfill and compact first ±100mm thick layer in earth trenches, with 1:3 Agricultural gypsum/top soil mixture, around earth rod	m³		
7.1.30	-	Backfill and compact top layers in earth trenches, with excavated top soil material	m³		

7.1	**Transport and installation of power line structure earthing cont: VOLUME 3 PART 2 - Activity Stage 7.1**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, supply and transport to pole position imported soil material, transport earthing material and install complete earthing in soil TYPE SOFT ROCK on the following structures:					
7.1.31	SCSASABF9	Bond the 3-Poles of the terminal structures together and to the substation earth mat by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		
7.1.32	SCSASABF9	Bond the 3 poles of 3-Pole structures to each other by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		
7.1.33	SCSASABF9	Install a 40 x 3 mm galvanised steel strap within each lattice tower foundation to connect the steel stub to the foundation re-inforcement	ea		
7.1.34	SCSASABF9	Install 25mm² Bare Conductor for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		

7.1.35	SCSASABF9	Install 10mm copper claded steel for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		
7.1.36	2-WT/763 D-DT-0642	Excavate, install complete 3 point star earth electrode	ea		
7.1.37	-	Excavate, install 1.5m x 16mm dia coper claded singel spike earth electrode	ea		
7.1.38	-	Backfill and compact earth spike holes, with 1:3 Agricultural gypsum/top soil mixture	m³		
7.1.39	-	Backfill and compact first ±100mm thick layer in earth trenches, with 1:3 Agricultural gypsum/top soil mixture, around earth rod	m³		
7.1.40	-	Backfill and compact top layers in earth trenches, with excavated top soil material	m³		

7.1	Transport and installation of power line structure earthing cont: VOLUME 3 PART 2 - Activity Stage 7.1				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Excavate, barricade, dispose of excavated material, supply and transport to pole position imported soil material, transport earthing material and install complete earthing in soil TYPE HARD ROCK on the following structures:					
7.1.41	SCSASABF9	Bond the 3-Poles of the terminal structures together and to the substation earth mat by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		
7.1.42	SCSASABF9	Bond the 3 poles of 3-Pole structures to each other by using 50 x 3mm flat Cu strap buried 1m deep, including excavation, supply, installation and backfilling.	m		
7.1.43	SCSASABF9	Install a 40 x 3 mm galvanised steel strap within each lattice tower foundation to connect the steel stub to the foundation re-inforcement	ea		

7.1.44	SCSASABF9	Install 25mm² Bare Conductor for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		
7.1.45	SCSASABF9	Install 10mm copper claded steel for counterpoise earthing of towers. Install a 15m radial counterpoises at each tower leg until the tower footing resistance is below 20Ω	m		
7.1.46	2-WT/763 D-DT-0642	Excavate, install complete 3 point star earth electrode	ea		
7.1.47	-	Excavate, install 1.5m x 16mm dia coper claded singel spike earth electrode	ea		
7.1.48	-	Backfill and compact earth spike holes, with 1:3 Agricultural gypsum/top soil mixture	m³		
7.1.49	-	Backfill and compact first ±100mm thick layer in earth trenches, with 1:3 Agricultural gypsum/top soil mixture, around earth rod	m³		
7.1.50	-	Backfill and compact top layers in earth trenches, with excavated top soil material	m³		

7.1	**Transport and installation of power line structure earthing cont: VOLUME 3 PART 2 - Activity Stage 7.1**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Extra-over items for C.2: (Rates are only for excavation of the earth electrode trenches)					
7.1.51		Intermediate material excavation	m³		
7.1.52		Hard Rock excavation	m³		
7.1.53		Boulder excavation - Class A	m³		
7.1.54		Boulder excavation - Class B	m³		
7.1.55		Backfill soil 1:3 Agricultural gypsum/top soil mixture	m³		
7.1.56		Backfill Type 2 soil soil	m³		
Sub-Total - Transport and installation of power line structure earthing					

7.2	Measure Structure Footing Resistanse and Record: VOLUME 3 PART 2 - Activity Stage 7.2				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Measure structure footing resistances, with installed additional/counter poise earthing systems					
7.2.1		Measure all suspension and strain structure footing resistances	ea		
7.2.2		Measure all resistances of additional electrodes	ea		
7.2.3		Submission of "Structure Footing Resistance" test results for approval	ea		
Sub-Total - Measure Structure Footing Resistanse and Records					
Total Activity 7 - Power Line Earthing Carried to BoQ Summary					

Activity Stage 8: Dressing of Structures					
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following. Insulators and conductor shall be supplied by Eskom. Contractor to provide rate for supply and installation of all other hardware items in the assembly:					
8.1	**Dressing of Structures: VOLUME 3 PART 2 - Activity Stage 8.1**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Intermediate Suspension Lattice Structures 247A					
8.1.1	247A 2-WT/1414s2	247A 0 degree suspension structure, 132kV lattice steel. 14.1m CAH	ea		
8.1.2	247A 2-WT/1414s2	247A 0 degree suspension structure, 132kV lattice steel. 17.1m CAH	ea		
8.1.3	247A 2-WT/1414s2	247A 0 degree suspension structure, 132kV lattice steel. 18.1m CAH	ea		

8.1.4	247A 2-WT/1414s2	247A 0 degree suspension structure, 132kV lattice steel. 19.1m CAH	ea		
0-30 degree Strain Lattice Structures 247B					
8.1.5	247B 2-WT/1292s2	247B 0-40 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		
8.1.6	247B 2-WT/1292s2	247B 0-40 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
8.1.7	247B 2-WT/1292s2	247B 0-40 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
40-90 degree Strain Lattice Structures 247C					
8.1.8	247C 2-WT/1292s2	247C 40-90 degree strain structure, 132kV lattice steel. 14.1m CAH	ea		
8.1.9	247C 2-WT/1292s2	247C 40-90 degree strain structure, 132kV lattice steel. 17.1m CAH	ea		
8.1.10	247C 2-WT/1292s2	247C 40-90 degree strain structure, 132kV lattice steel. 19.1m CAH	ea		
0-40 degree Terminal Lattice Structures 247C					
8.1.11	247C terminal 2-WT/1292s2	2-WT/1292s2	ea		
Sub-Total - 247 Lattice Structures					

8.1	**Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1**				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
258C Intermediate Suspension Braced Double Circuit Structures					
8.1.12	258C 2-WT/1291s1	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 20m (Bottom Attachment 11.2m)	ea		
8.1.13	258C 2-WT/1291s1	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 22m (Bottom Attachment 13.2m)	ea		

8.1.14	258C 2-WT/1291s1	Structure 258C Intermediate 0º H-Structure 132kV Twin Tern 24m (Bottom Attachment 15.2m)	ea		
Sub-Total - 258C Structures					

8.1	**Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1**				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
2-WT/15049 Intermediate 0 - 2º Suspension Mono-Pole Double Circuit Structures					
8.1.15	2-WT/15049 2-WT/1291s1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 20m (Plant 2.6m - Bottom Attachement 10.5m)	ea		
8.1.16	2-WT/15049 2-WT/1291s1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 22m (Plant 2.8m - Bottom Attachement 12.4m)	ea		
8.1.17	2-WT/15049 2-WT/1291s1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 24m (Plant 3m - Bottom Attachement 14.2m)	ea		
8.1.18	2-WT/15049 2-WT/1291s1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 26m (Plant 3.2m - Bottom Attachement 16.0m)	ea		
8.1.19	2-WT/15049 2-WT/1291s1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 28m (Plant 3.4m - Bottom Attachement 17.8m)	ea		
8.1.20	2-WT/15049 2-WT/1291s1	Pole, Int (0°-2°) Double Circuit Twin Tern Conductor 30m (Plant 3.6m - Bottom Attachement 19.6m)	ea		
Sub-Total - 2-WT/15049 Intermediate 0 - 2º Suspension Structures					

8.1	**Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1**

Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Twin Kingbird/Bersfort Single Circuit Mono-Pole Structures **2-WT/1294 Intermediate 0 - 2º Suspension** **2-WT/1295 Strain 2º - 90º** **2-WT/1296 Angle Strain 3-Pole 2º-90º** **2-WT/1297 3-Pole Terminal** **2-WT/1298 Inline Strain**					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
2-WT/1294 Intermediate 0 - 2º Suspension					
8.1.21	2-WT/1294 2-WT/1291s1	Pole, St 132kV Susp 21m	ea		
8.1.22		Pole, St 132kV Susp 22m	ea		
8.1.23		Pole, St 132kV Susp 23m	ea		
8.1.24		Pole, St 132kV Susp 24m	ea		
8.1.25		Pole, St 132kV Susp 25m	ea		
8.1.26		Pole, St 132kV Susp 26m	ea		
8.1.27		Pole, St 132kV Susp 29m	ea		
2-WT/1295 Strain 2º - 90º					
8.1.28	2-WT/1295 2-WT/1292s2	Pole, St 132kV Angle Strain (0°-90°) 20m	ea		
8.1.29		Pole, St 132kV Angle Strain (0°-90°) 22m	ea		
8.1.30		Pole, St 132kV Angle Strain (0°-90°) 23m	ea		
8.1.31		Pole, St 132kV Angle Strain (0°-90°) 24m	ea		
8.1.32		Pole, St 132kV Angle Strain (0°-90°) 28m	ea		
8.1.33		Pole, St 132kV Angle Strain (0°-90°) 30m	ea		
2-WT/1296 Angle Strain 3-Pole 2º-90º					
8.1.34	2-WT/1296 2-WT/1292s2	3- Pole, St 132kV Strain 11.1m (2 x 11.1m & 1 x 9.1m)	ea		
8.1.35		3- Pole, St 132kV Strain 13.1m (2 x 13.1m & 1 x 11.1m)	ea		
8.1.36		3- Pole, St 132kV Strain 14m (2 x 14.1m & 1 x 12.1m)	ea		
8.1.37		3- Pole, St 132kV Strain 16.1m (2 x 16.1m & 1 x 14.1m)	ea		
2-WT/1297 3-Pole Terminal					
8.1.38	2-WT/1297	3- Pole Term St 132kV 14m (Include 3 poles of 14m long)	ea		

8.1.39	2-WT/1292s2	3- Pole Term St 132kV 16m (Include 3 poles of 16m long)	ea		
Sub-Total - Twin Kingbird/Bersfort Single Circuit Mono-Pole Structures					

8.1	**Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1**				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Bersfort Single Circuit Mono-Pole Guided Structures **2-WT/1281 Guided Braced Intermediate / Suspension** **2-WT/1284 Angle Strain 0 - 90º** **2-WT/1285 Guided Inline Strain 3-Pole Structore 0 - 5º** **2-WT/1286 Guided Inline Strain 3-Pole Structore 5 - 90º**					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
2-WT/1281 Guided Braced Intermediate / Suspension					
8.1.40	2-WT/1281 2-WT/1291s1	Pole , St 132kV Guyed Susp 16.1m Bottom Attachment 10.7)	ea		
8.1.41		Pole , St 132kV Guyed Susp 18.2m Bottom Attachment 12.8)	ea		
8.1.42		Pole , St 132kV Guyed Susp 21.2m Bottom Attachment 15.8)	ea		
8.1.43		Pole, St 132kV Guyed Susp 24.2m (Bottom Attachment 18.8)	ea		
2-WT/1284 Angle Strain 0 - 90º					
8.1.44	2-WT/1284 2-WT/1292s2	Pole, St 132kV Guyed Angle Strain (0°-90°) 18.2m (Bottom Attachement 11.2m)	ea		
8.1.45		Pole, St 132kV Guyed Angle Strain (0°-90°) 21.2m (Bottom Attachement 14.2m)	ea		
8.1.46		Pole, St 132kV Guyed Angle Strain (0°-90°) 24.2m (Bottom Attachement 17.2m)	ea		
2-WT/1285 Guided Inline Strain 3-Pole Structore 0 - 5º					

8.1.47	2-WT/1285 2-WT/1292s2	Pole, St 132kV Guyed Angle Strain 3-pole structure (0°–5°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea		
8.1.48		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea		
8.1.49		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea		
8.1.50		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea		
8.1.51		Pole, St 132kV Guyed Angle Strain 3-pole structure (0°-5°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea		

8.1	**Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1**				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
2-WT/1286 Guided Inline Strain 3-Pole Structore 5 - 90º					
8.1.52	2-WT/1286 2-WT/1292s2	Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 11.1m (includes 3 poles) (Bottom Attachment 9.6m)	ea		
8.1.53		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 16.1m (includes 3 poles) (Bottom Attachment 14.6m)	ea		
8.1.54		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 18.2m (includes 3 poles) (Bottom Attachment 16.7m)	ea		
8.1.55		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°–90°) 21.2m (includes 3 poles) (Bottom Attachment 19.7m)	ea		
8.1.56		Pole, St 132kV Guyed Angle Strain 3-pole structure (5°-90°) 24.2m (includes 3 poles) (Bottom Attachment 22.7)	ea		

Sub-Total - Bersfort Single Circuit Mono-Pole Guided Structures					

8.1	**Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1**				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Chikadee / Kingbird Single Circuit Mono-Pole Structures **D-DT-7611 Intermediate / Suspension** **D-DT-7615 Angle Strain 0 - 90º** **D-DT-7618 3-Pole Strain Structore 0 - 90º** **2-WT/1213 3-Pole Terminal Structore 0 - 90º**					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
D-DT-7611 Intermediate / Suspension					
8.1.57	D-DT-7611 D-DT-7321	Pole, St 132kV Susp 20 m 23kN (Plant 2.6m, Bottom Att 13 m)	ea		
8.1.58	D-DT-7611 D-DT-7321	Pole, St 132kV Susp 21 m 23kN (Plant 2.7m, Bottom Att 13.9 m)	ea		
8.1.59	D-DT-7611 D-DT-7321	Pole, St 132kV Susp 22 m 23kN (Plant 2.8m, Bottom Att 14.8 m)	ea		
8.1.60	D-DT-7611 D-DT-7321	Pole, St 132kV Susp 22 m 23kN (Plant 2.9m, Bottom Att 15.7 m)	ea		
8.1.61	D-DT-7611 D-DT-7321	Pole, St 132kV Susp 22 m 23kN (Plant 3m, Bottom Att 16.6 m)	ea		

D-DT-7615 Angle Strain 0 - 90º						
8.1.62	D-DT-7615 D-DT-7311	Pole, St 132kV Strain 0-90° 20 m (Bottom Attachement 13 m)	ea			
8.1.63	D-DT-7615 D-DT-7311	Pole, St 132kV Strain 0-90° 21 m (Bottom Attachement 14 m)	ea			
8.1.64	D-DT-7615 D-DT-7311	Pole, St 132kV Strain 0-90° 24 m (Bottom Attachement 17 m)	ea			
8.1.65	D-DT-7615 D-DT-7311	Pole, St 132kV Strain 0-90° 30 m (Bottom Attachement 23 m)	ea			
Sub-Total - Chikadee / Kingbird Single Circuit Mono-Pole Structures						

8.1	**Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1**				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
D-DT-7618 3-Pole Strain Structore 0 - 90º					
8.1.66	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 8 m and 1 x 10 m poles (Plant 1.6m, Bottom Attachement 6.2 m)	ea		
8.1.67	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 9 m and 1 x 11 m poles (Plant 1.7m, Bottom Attachement 7.1 m)	ea		
8.1.68	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 10 m and 1 x 12 m poles (Plant 1.8m, Bottom Attachement 8 m)	ea		
8.1.69	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 11 m and 1 x 13 m poles (Plant 1.9m, Bottom Attachement 8.9 m)	ea		
8.1.70	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 12 m and 1 x 14 m poles (Plant 2m, Bottom Attachement 9.8m)	ea		

8.1.71	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 13 m and 1 x 15 m poles (Plant 2.1m, Bottom Attachement 10.7m)	ea		
8.1.72	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 14 m and 1 x 16 m poles (Plant 2.2m, Bottom Attachement 11.6m)	ea		

8.1	Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
D-DT-7618 3-Pole Strain Structore 0 - 90º cont					
8.1.73	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 15 m and 1 x 17 m poles (Plant 2.3m, Bottom Attachement 12.5m)	ea		
8.1.74	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 16 m and 1 x 18 m poles (Plant 2.4m, Bottom Attachement 13.4m)	ea		
8.1.75	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 17 m and 1 x 19 m poles (Plant 2.4m, Bottom Attachement 14.3m)	ea		
8.1.76	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 18 m and 1 x 20 m poles (Plant 2.6m, Bottom Attachement 15.2m)	ea		
8.1.77	D-DT-7618 D-DT-7311	Pole, 3-Pole Strain Structure 0-90° 2 x 19 m and 1 x 21 m poles (Plant 2.7m, Bottom Attachement 16.1m)	ea		
Sub-Total - Chikadee / Kingbird Single Circuit 3-Pole 0 - 90º strain Structures					

8.1	Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1

Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
2-WT-1213 3-Pole Terminal Structore					
8.1.78	2-WT-1213 Sheet 3 & 4 D-DT-7311	Pole, 3-Pole Term Structure 0-90° 3 x 11.6 poles (Plant 2m, Bottom Attachement 9.6m)	ea		
8.1.79	2-WT-1213 Sheet 3 & 4 D-DT-7311	Pole, 3-Pole Term Structure 0-90° 3 x 12.6 poles (Plant 2m, Bottom Attachement 10.6m)	ea		
8.1.80	2-WT-1213 Sheet 3 & 4 D-DT-7311	Pole, 3-Pole Term Structure 0-90° 3 x 13.6 poles (Plant 2m, Bottom Attachement 11.6m)	ea		
8.1.81	2-WT-1213 Sheet 3 & 4 D-DT-7311	Pole, 3-Pole Term Structure 0-90° 3 x 14.6 poles (Plant 2m, Bottom Attachement 12.6m)	ea		
8.1.82	2-WT-1213 Sheet 3 & 4 D-DT-7311	Pole, 3-Pole Term Structure 0-90° 3 x 15.6 poles (Plant 2m, Bottom Attachement 13.6m)	ea		
8.1.83	2-WT-1213 Sheet 3 & 4 D-DT-7311	Pole, 3-Pole Term Structure 0-90° 3 x 16.6 poles (Plant 2m, Bottom Attachement 14.6m)	ea		
8.1.84	2-WT-1213 Sheet 3 & 4 D-DT-7311	Pole, 3-Pole Term Structure 0-90° 3 x 17.6 poles (Plant 2m, Bottom Attachement 15.6m)	ea		
Sub-Total - Chikadee / Kingbird Single Circuit 3-Pole Terminal Structures					

8.1	**Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1**		
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:			

Chikadee / Kingbird Single Circuit H-Pole Structure
D-DT-7800 H-Pole Intermediate Structure 8m X-arm
D-DT-7801 H-Pole Structure 8m X-Arm In-Line Strain 0-70kN Range
D-DT-7802 H-Pole Structure 8m X-Arm In-Line Strain 70-120kN Range
D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-120kN Range
D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range
D-DT-7810 H-Pole Intermediate Structure 10m X-Arm
D-DT-7811 H-Pole Structure 10m X-Arm In-Line Strain 0-70kN Range
D-DT-7812 H-Pole Structure 10m X-Arm In-Line Strain 70-120kN Range
D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range
D-DT-7818 H-Pole Structure 10m X-Arm Terminal 70-120kN Range

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
D-DT-7800 H-Pole Intermediate Structure 8m X-arm					
8.1.85	D-DT-7800 D-DT-7304	Pole, H-Pole Intermediate Freestanding Structure 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2.1m, Conductor Attachement 9.2m)	ea		
8.1.86	D-DT-7800 D-DT-7304	Pole, H-Pole Intermediate Freestanding Structure 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2.2m, Conductor Attachement 10.1m)	ea		
8.1.87	D-DT-7800 D-DT-7304	Pole, H-Pole Intermediate Freestanding Structure 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2.3m, Conductor Attachement 11.0m)	ea		
8.1.88	D-DT-7800 D-DT-7304	Pole, H-Pole Intermediate Freestanding Structure 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2.4m, Conductor Attachement 12.0m)	ea		
8.1.89	D-DT-7800 D-DT-7304	Pole, H-Pole Intermediate Freestanding Structure 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2.5m, Conductor Attachement 12.9m)	ea		
8.1.90	D-DT-7800 D-DT-7304	Pole, H-Pole Intermediate Freestanding Structure 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2.6m, Conductor Attachement 13.7m)	ea		

8.1	Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
D-DT-7801 H-Pole Structure 8m X-Arm In-Line Strain 0-70kN Range					
8.1.91	D-DT-7801 D-DT-7311	Pole, In-Line Strain 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
8.1.92	D-DT-7801 D-DT-7311	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
8.1.93	D-DT-7801 D-DT-7311	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
8.1.94	D-DT-7801 D-DT-7311	Pole, In-Line Strain 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
8.1.95	D-DT-7801 D-DT-7311	Pole, In-Line Strain 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
8.1.96	D-DT-7801 D-DT-7311	Pole, In-Line Strain 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

8.1	Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
D-DT-7802 H-Pole Structure 8m X-Arm In-Line Strain 70-120kN Range					

8.1.97	D-DT-7802 D-DT-7311	Pole, In-Line Strain 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
8.1.98	D-DT-7802 D-DT-7311	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
8.1.99	D-DT-7802 D-DT-7311	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
8.1.100	D-DT-7802 D-DT-7311	Pole, In-Line Strain 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
8.1.101	D-DT-7802 D-DT-7311	Pole, In-Line Strain 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
8.1.102	D-DT-7802 D-DT-7311	Pole, In-Line Strain 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

8.1	Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
D-DT-7807 H-Pole Structure 8m X-Arm Terminal 0-120kN Range					
8.1.103	D-DT-7807 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
8.1.104	D-DT-7807 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		

8.1.105	D-DT-7807 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
8.1.106	D-DT-7807 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
8.1.107	D-DT-7807 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
8.1.108	D-DT-7807 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

8.1	**Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1**				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
D-DT-7808 H-Pole Structure 8m X-Arm Terminal 70-120kN Range					
8.1.109	D-DT-7808 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
8.1.110	D-DT-7808 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
8.1.111	D-DT-7808 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
8.1.112	D-DT-7808 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		

8.1.113	D-DT-7808 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
8.1.114	D-DT-7808 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

8.1	Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
D-DT-7810 H-Pole Intermediate Structure 10m X-Arm					
8.1.115	D-DT-7810 D-DT-7311	Pole, H-Pole Intermediate Freestanding Structure 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2.1m, Conductor Attachement 9.2m)	ea		
8.1.116	D-DT-7810 D-DT-7311	Pole, H-Pole Intermediate Freestanding Structure 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2.2m, Conductor Attachement 10.1m)	ea		
8.1.117	D-DT-7810 D-DT-7311	Pole, H-Pole Intermediate Freestanding Structure 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2.3m, Conductor Attachement 11.0m)	ea		
8.1.118	D-DT-7810 D-DT-7311	Pole, H-Pole Intermediate Freestanding Structure 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2.4m, Conductor Attachement 12.0m)	ea		
8.1.119	D-DT-7810 D-DT-7311	Pole, H-Pole Intermediate Freestanding Structure 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2.5m, Conductor Attachement 12.9m)	ea		
8.1.120	D-DT-7810 D-DT-7311	Pole, H-Pole Intermediate Freestanding Structure 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2.6m, Conductor Attachement 13.7m)	ea		

8.1	Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
D-DT-7811 H-Pole Structure 10m X-Arm In-Line Strain 0-70kN Range					
8.1.121	D-DT-7811 D-DT-7311	Pole, In-Line Strain 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
8.1.122	D-DT-7811 D-DT-7311	Pole, In-Line Strain 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
8.1.123	D-DT-7811 D-DT-7311	Pole, In-Line Strain 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
8.1.124	D-DT-7811 D-DT-7311	Pole, In-Line Strain 2 x 18.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
8.1.125	D-DT-7811 D-DT-7311	Pole, In-Line Strain 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
8.1.126	D-DT-7811 D-DT-7311	Pole, In-Line Strain 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

8.1	Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
D-DT-7817 H-Pole Structure 10m X-Arm Terminal 0-70kN Range					

8.1.127	D-DT-7817 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
8.1.128	D-DT-7817 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		
8.1.129	D-DT-7817 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
8.1.130	D-DT-7817 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
8.1.131	D-DT-7817 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
8.1.132	D-DT-7817 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		

8.1	**Dressing of Structures Cont: VOLUME 3 PART 2 - Activity Stage 8.1**				
Dressing include the transport to specific tower/pole position and installation of phase & earth wire hardware assemblies and anti climbing devices for the following structures:					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
D-DT-7818 H-Pole Structure 10m X-Arm Terminal 70-120kN Range					
8.1.133	D-DT-7818 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 15.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 10.6m)	ea		
8.1.134	D-DT-7818 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 16.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 11.6m)	ea		

8.1.135	D-DT-7818 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 17.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 12.6m)	ea		
8.1.136	D-DT-7818 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 18.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 13.7m)	ea		
8.1.137	D-DT-7818 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 19.2 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 14.7m)	ea		
8.1.138	D-DT-7818 D-DT-7311	Pole, H-Pole Term Structure 0-90° 2 x 20.1 m poles and 8m or 10m crossarm (Plant 2m, Bottom Attachement 15.6m)	ea		
Sub-Total - Chikadee / Kingbird Single Circuit H-Pole Structure Structures					
Sub-Total Activity 8 - Dressing of Structures Carried to BoQ Summary					

Activity Stage 9: Stringing, Regulation & Making off					
Stringing include the transport of phase conductor, shield wire conductor and stringing hardware to the sites. It also includes the complete installation of harware and the regulation / tensioning phase & earth wire conductor. Contractor to ensure the necessary strength and size of Pilot wire for the purpose of stringing.					
9.1	**Test Joints: VOLUME 3 PART 2 - Activity Stage 9.1**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Perform tests at an approved body as indicated below. Refer to Volume 4 for the required material. Should the Test Joint fail, the Contractor will re-test at his own cost. Before construction commences, the crimper/s and presses to be used on the line shall be used to crimp the test joints. It shall be done by an authorised person who will perform joints on the line during construction. This must be witnessed by Clerk of Works and test certificates to be provided as part of the Hand Over Documentation.					
9.1.1	**Test Joints ACSR Phase Conductor: VOLUME 3 PART 2 - Activity Stage 9.1**				

9.1.1.1	04TB-040	Test complete Chikadee assembly in accordance with Eskom technical bulletin 04TB-040	each		
9.1.1.2	04TB-040	Test complete Kingbird assembly in accordance with Eskom technical bulletin 04TB-040	each		
9.1.1.3	04TB-040	Test complete Tern assembly in accordance with Eskom technical bulletin 04TB-040	each		
9.1.1.4	04TB-040	Test complete Bersfort assembly in accordance with Eskom technical bulletin 04TB-040	each		
9.1.2	**Test Joints ACSR Earth Wires: VOLUME 3 PART 2 - Activity Stage 9.1**				
9.1.2.1	04TB-040	Test complete Wolf assembly in accordance with Eskom technical bulletin 04TB-040	each		
9.1.2.2	04TB-040	Test complete Lynx assembly in accordance with Eskom technical bulletin 04TB-040	each		
9.1.2.3	04TB-040	Test complete Panther assembly in accordance with Eskom technical bulletin 04TB-040	each		
			Sub-Total 9.1		

9.2	**Stringing: VOLUME 3 PART 2 - Activity Stage 9.2**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	
String the following Phase Conductor (length is for all three phases):					
9.2.1		Chikadee	m		
9.2.2		Kingbird	m		
9.2.3		Tern	m		
9.2.4		Bersford	m		
9.2.5		Twin Kingbird	m		
9.2.6		Twin Tern	m		
9.2.7		Twin Bersford	m		
String the following Earth wires:					
9.2.8		7/3.35 Steel Wire	m		
9.2.9		19/2.65 Steel Wire	m		
9.2.10		Wolf	m		

9.2.11		Lynx	m		
9.2.12		Panther	m		
Sub-Total Stringing					

9.3	**Making off and Regulation: VOLUME 3 PART 2 - Activity Stage 9.3**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Install the following Dead end Terminations and regulate tension of conductor:					
Phase Conductor					
9.3.1		Dead-End Termination Chikadee	ea		
9.3.2		Dead-End Termination Kingbird	ea		
9.3.3		Dead-End Termination Tern	ea		
9.3.4		Dead-End Termination Bersford	ea		
9.3.5		Dead-End Termination Twin Kingbird	ea		
9.3.6		Dead-End Termination Twin Tern	ea		
9.3.7		Dead-End Termination Twin Bersford	ea		
Earth Wire Steel					
9.3.8		7/3.35 Steel Wire	ea		
9.3.9		19/2.65 Steel Wire	ea		
9.3.10		Insulated 7/3.35 Steel Wire - Pistol Clamps	ea		
9.3.11		Insulated 19/2.65 Steel Wire - Pistol Clamps	ea		
Earth Conductor					
9.3.12		Dead-End Termination Wolf	ea		
9.3.13		Dead-End Termination Lynx	ea		
9.3.14		Dead-End Termination Panther	ea		
9.3.15		InsulatedDead-End Termination Wolf	ea		
9.3.16		Insulated Dead-End Termination Lynx	ea		
9.3.17		InsulatedDead-End Termination Panther	ea		
Sub-Total Making off and Regulation					

9.4	Mid Span Joints: VOLUME 3 PART 2 - Activity Stage 9.4				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Install the following midspan joints:					
9.4.1		Midspan Joint Chikadee	ea		
9.4.2		Midspan Joint Kingbird	ea		
9.4.3		Midspan Joint Tern	ea		
9.4.4		Midspan Joint Bersford	ea		
9.4.5		Midspan Joint Wolf	ea		
9.4.6		Midspan Joint Lynx	ea		
9.4.7		Midspan Joint Panther	ea		
Sub-Total Midspan joints					

9.5	Repair Sleeves: VOLUME 3 PART 2 - Activity Stage 9.5				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Supply and install repair sleeves for damaged conductors:					
9.5.1		Mid Span Repair Sleeve Chikadee	ea		
9.5.2		Mid Span Repair Sleeve Kingbird	ea		
9.5.3		Mid Span Repair Sleeve Tern	ea		
9.5.4		Mid Span Repair Sleeve Bersford	ea		
9.5.5		Mid Span Repair Sleeve Wolf	ea		
9.5.6		Mid Span Repair Sleeve Lynx	ea		
9.5.7		Mid Span Repair Sleeve Panther	ea		
Sub-Total Repair Sleeves					

9.6	Clamping In: VOLUME 3 PART 2 - Activity Stage 9.6				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Phase Conductor					

9.6.1	D-DT-7321	Clamping-in Chikadee	ea		
9.6.2	D-DT-7321	Clamping-in Kingbird	ea		
9.6.3	D-DT-7321	Clamping-in Tern	ea		
9.6.4	2-WT/1282	Clamping-in Bersford	ea		
9.6.5	2-WT/1291 s1	Clamping-in Twin Kingbird	ea		
9.6.6	2-WT/1291 s1	Clamping-in Twin Tern	ea		
9.6.7	2-WT/1291 s1	Clamping-in Twin Bersford	ea		
Earth Wire					
9.6.8	D-DT-7331	Clamping-in 7/3.35 Steel Wire	ea		
9.6.9	D-DT-7331	Clamping-in 19/2.65 Steel Wire	ea		
9.6.10	D-DT-7327	Clamping-in 7/3.35 Steel Wire	ea		
9.6.11	D-DT-7327	Clamping-in 19/2.65 Steel Wire	ea		
Earth Conductor					
9.6.12	2WT/1421 S1	Clamping-in Wolf	ea		
9.6.13	2WT/1421 S1	Clamping-in Lynx	ea		
9.6.14	2WT/1421 S1	Clamping-in Panther	ea		
9.6.15	2WT/1421 S2	Insulated Clamping-in Wolf	ea		
9.6.16	2WT/1421 S2	Insulated Clamping-in Lynx	ea		
9.6.17	2WT/1421 S2	Insulated Clamping-in Panther	ea		
9.6.18	2-NT/627 S5	Insulated Suspension Clamping-in Wolf	ea		
9.6.19	2-NT/627 S5	Insulated Suspension Clamping-in Lynx	ea		
9.6.20	2-NT/627 S5	insulated Suspension Clamping-in Panther	ea		
9.6.21	2-NT/627 S6	Suspension Clamping-in Wolf	ea		
9.6.22	2-NT/627 S6	Suspension Clamping-in Lynx	ea		
9.6.23	2-NT/627 S6	Suspension Clamping-in Panther	ea		
Sub-Total Clamping In					

9.7	**Vibration Dampers: VOLUME 3 PART 2 - Activity Stage 9.7**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
Install asymmetrical dampers on the phase conductors as indicated in Volume 2					

9.7.1		Chikadee	ea		
9.7.2		Kingbird	ea		
9.7.3		Tern	ea		
9.7.4		Bersford	ea		
Install spiral vibration dampers on Earth Wire as indicated in Volume 2					
9.7.5		7/3.35 Steel Wire	ea		
9.7.6		19/2.65 Steel Wire	ea		
Install asymmetrical dampers on the Earth conductors as indicated in Volume 2					
9.7.7		Wolf	ea		
9.7.8		Lynx	ea		
9.7.9		Panther	ea		
Sub-Total Vibration Dampers					
9.8	**Bird Flight Diverters: VOLUME 3 PART 2 - Activity Stage 9.8**				
Install as specified by the Environmental Report					
9.8.1		Supply and Install EBM bird flappers on shielding wire	ea		
Sub-Total Bird Flappers					
9.9	**5**				
Install on spans crossing the cliffs deeper than 60m					
9.9.1	D-DT-7028	Supply and Install aircraft warning spheres on shielding wire (D-DT-7028 – SAP: 0174771) Cloud White - G80	ea		
9.9.2	D-DT-7028	Supply and Install aircraft warning spheres on shielding wire (D-DT-7028 – SAP: 0174771) International Orange A15	ea		
Sub-Total Aircraft Warning Spheres					
9.10	**Temporary Structures - Crossings: VOLUME 3 PART 2 - Activity Stages 7, 8, & 9.2**				

9.10.1		Prepare temporary structures and do stringing for the following type of crossings: Allow for all HV and MV lines, roads, telcom, rail, etc. crossing as per the profile	sum	cost plus fee	
Sub-Total Aircraft Warning Spheres					

9.11	**Closing Spans to Substations: VOLUME 3 PART 2 - Activity Stages 8 & 9**				
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
String the closing span to the line lander inside the substation. Quotations must be obtained from Transmission for the stringing closing spans to Main Transmission Substations.					
String the following Phase Conductor (length is for all three phases):					
9.11.1		Chikadee	m		
9.11.2		Kingbird	m		
9.11.3		Tern	m		
9.11.4		Bersford	m		
9.11.5		Twin Kingbird	m		
9.11.6		Twin Tern	m		
9.11.7		Twin Bersford	m		
String the following Earth wires:					
9.11.8		7/3.35 Steel Wire	m		
9.11.9		19/2.65 Steel Wire	m		
9.11.10		Wolf	m		
9.11.11		Lynx	m		
9.11.12		Panther	m		
Sub-Total Closing Spans					
Total Activity 9 - Stringing, Regulation & Making off Carried to BoQ Summary					

Activity Stage 10: Labelling VOLUME 3 PART 2 - Activity Stage 10					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
10.1	**Structure/Pole Identification Labels: VOLUME 3 PART 2 - Activity Stage 10.1**				
Supply, store and transport to site of line and install Structure/Pole Identification Labels and accessories: ESKASAANO Rev 1, 2-WT/1148					
10.1.1	D-DT-5050 s1	"Structure/Pole Identification Lables" 132kV line	ea		
10.2	**Line Designation labels: VOLUME 3 PART 2 - Activity Stage 10.1**				
Supply, store and transport to site of line and installLine Designation labels and accessories: ESKASAANO Rev 1, 2-WT/1148					
10.2.1	D-DT-5050 s3	"Line designation Label" - 132kV line (On 3rd structure from each substation)	ea		
10.3	**Line Crossing Labels: VOLUME 3 PART 2 - Activity Stage 10.1**				
Supply, store and transport to site of line and install "Line crossing Lables" - 132kV line poles: ESKASAANO Rev 1, 2-WT/1148					
10.3.1	D-DT-5050 s2	"Line crossing Lables" - 132kV line poles	ea		
10.4	**Phase Disks: VOLUME 3 PART 2 - Activity Stage 10.1**				
Supply, store and transport to site of line and install Phase Disks					
10.4.1	D-DT-6114	"Phase Disks" - 132kV Terminal structures	ea		
Total Activity 10 - Labelling Carried to BoQ Summary					

Activity Stage 11: Dismantling VOLUME 3 PART 2 - Activity Stage 11.					
Item	**Reference Drawing**	**Description**	**Unit**	**Material Rate**	**Labour Rate**
11.1		**Structures & Poles**			
Dismantle the structure, move structure to the specified site and rehabilitate the structure sites of the following structures (PM to arrange with asset disposal department):					

11.1.1		Structure/ Pole Description and Name 1	ea		
11.1.2		Structure/ Pole Description and Name 2	ea		
11.1.3		Structure/ Pole Description and Name 3	ea		
11.1.4		Structure/ Pole Description and Name 4	ea		
11.2		**Foundation Structures & Poles**			
Remove the foundations, dispose of foundation material and rehabilitate the sites of the following foundation (PM to arrange with asset disposal department): A certificate must be obtained for the disposal of concrete and foundation material. Disposal must be in accordance to the environmental management plan.					
11.2.1		Foundation Structure/ Pole Description and Name 1	ea		
11.2.2		Foundation Structure/ Pole Description and Name 2	ea		
11.2.3		Foundation Structure/ Pole Description and Name 3	ea		
11.2.4		Foundation Structure/ Pole Description and Name 4	ea		
11.3		**Conductor**			
Remove the phase conductor & hardware and transporty all material to the specified site (PM to arrange with asset disposal department):					
11.3.1		Conductor type 1	m		
11.3.2		Conductor type 2	m		
11.3.3		Conductor type 3	m		
11.3.4		Conductor type 4	m		
11.4		**Steel Shield Wire**			
Remove the shield wire & hardware and transport all material to the specified site (PM to arrange with asset disposal department):					
11.4.1		Shield Wire type 1	m		
11.4.2		Shield Wire type 2	m		
11.4.3		Shield Wire type 3	m		
11.4.4		Shield Wire type 4	m		
Total Activity 11 - Dismantling Carried to BoQ Summary					

Activity Stage 12: Taking over of the Works and Clearance of site VOLUME 3 PART 2 - Activity Stage 12.

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
12.1	**Re-instate entire construction site and roads: VOLUME 3 PART 2 - Activity Stage 12.1**				
12.1.1		Complete re-instatement of all new structure sites, which includes removal from site of all rubbish, conductor off-cuts, excess construction material and excavated material to be spoiled, to a pre-approved dumping site	ea		
12.1.2		Removal of all access indicators and notice boards	sum		
			Sub-Total 12.1		
12.2	**Final inspection of the line: VOLUME 3 PART 2 - Activity Stage 12.2**				
12.2.1		Conducting of pre-commissioning "pole-to-pole" final inspection, in conjunction with Project Engineer, Clerk of Works and Field Services Engineer	km		
12.2.2		Completion and submission of all "Quality Inspection & Defect Correction" sheets for 'Handing Over' documentation	sum		
			Sub-Total 12.2		
12.3	**Handing over, test & commissioning: VOLUME 3 PART 2 - Activity Stage 12.3**				
12.3.1		Completion and submission of all 'Handing Over' documentation	sum		
			Sub-Total 12.3		
12.4	**Submission of "As Built' Information: VOLUME 3 PART 2 - Activity Stage 12.4**				
12.4.1		Preparation of all "As Built" drawings and "Line Data" sheets	sum		
12.4.2		Completion and submission of Four copies of a complete "Line Inventory/Line Data" of the new line to the Employer, as specified in Activity Stage 12.4	sum		
			Sub-Total 12.4		
Activity Stage 12: Taking over of the Works and Clearance of site cont					

Item	Reference Drawing	Description	Unit	Material Rate	Labour Rate
12.5	**Site clearance: VOLUME 3 PART 2 - Activity Stage 12.5**				
12.5.1		Clearing of site, removal of site office, stores, rubbish, excess construction material and re-instatement of construction camp and material yard	sum		
12.5.2		Removal upon completion of all items established in terms of Activity Stage 1.4 and the making good and restoring of the site to the satisfaction of the Clerk of Works.	sum		
12.5.3		Removal of excess line material supplied by the Employer and return it to the nearest Eskom CNC	sum		
			Sub-Total 12.5		
Activity 12 - Taking over of the Works and Clearance of site carried to BoQ Summary					

HV Lines Bill of Quantities		
Item No.	**Description of the Item**	**Price**
1	Activity Stage 1: Preliminary & General, Environmental, Health & Safety and Site establishment	
2	Activity Stage 2: Establish construction access	
3	Activity Stage 3: Survey activities (Survey Activities to be done by Employer's Land Development Department)	
4	Activity Stage 4: Construction of temporary By-pass Lines	
5	Activity Stage 5: Foundations	
6	Activity Stage 6: Assembly and Erection of Power Line Structures	
7	Activity Stage 7: Power Line Earthing	
8	Activity Stage 8: Dressing of Structures	
9	Activity Stage 9: Stringing, Regulation & Making off	
10	Activity Stage 10: Labelling VOLUME 3 PART 2 - Activity Stage 10	
11	Activity Stage 11: Dismantling VOLUME 3 PART 2 - Activity Stage 11.	
12	Activity Stage 12: Taking over of the Works and Clearance of site VOLUME 3 PART 2 - Activity Stage 12.	
13	Transport	
HV Lines Bill of Quantities TOTAL		

PART 3: SCOPE OF WORK

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C3.1: EMPLOYER'S WORKS INFORMATION

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1 Description of the *works*

1.1 Executive overview

Activity Stage 1: Preliminary & General, Environmental, Health & Safety and Site establishment

- The preliminaries / P&G section will be included by "Contracts Management" as per instruction by Contracts Manager.
    - Preliminary and General cost;
    - Environmental requirements;
    - Health & Safety requirements;
    - Site establishment.
- Activity Stage 2: Establish construction access
- Supply, Transport and Installation of new power line servitude gates;
- Complete replacement of existing power line servitude gates;
- Closure of construction access
- Bush clearing and cutting of trees.

Activity Stage 3: Survey activities

- Structure setting-out & stays positions;
- Marking of servitude and access gates;
- Scanning of Services at specific structure positions

Activity Stage 4: Construction of temporary By-passes Lines

- Complete installation of temporary By-pass lines, refer to Project specific.
- Complete removal of temporary Project specific.

Activity Stage 5: Foundations

- Geotechnical investigation and soil/foundation type nominations;
- Foundation Design Verification
- Foundation installation
- Stay Rod & Foundations Design or Verification;
- Stay Rod and Foundation Installation;
- Barricading/Protecting of all open excavations.

Activity Stage 6: Assembly and Erection of power line structures

- Assembly and erection of all structures;
- Assembly and installation of stay assemblies;

Activity Stage 7: Power line earthing

- Transport and installation of power line structure earthing material;
- Measure Structure Footing Resistance and Record;

Activity Stage 8: Dressing of all structures

- Dressing of all structures
- Dressing includes the transport to specific tower/pole position and installation of phase earth wire hardware assemblies and anti-climbing devices, etc. are connected to the tower in preparation for stringing.

Activity Stage 9: Stringing, Regulation & Making off

- Test Joints;
- Stringing;
- Making off and Regulation.
- Mid span joints

- Repair sleeves

- Clamping in
- Vibration dampers
- Bird flappers
- Aircraft warning spheres
- Temporary structures
- Closing spans to substations

Activity Stage 10: Labelling
- Structure/Pole Identification Labels
- Line Designation labels;
- Line Crossing labels;
- Phase Disks.
- Activity Stage 11: Dismantling
- Structures & Poles;
- Foundation Structures & Poles;
- Conductor;
- Steel Shield Wire;

Activity Stage 12: Taking over of the works and clearance of site
- Re-instate entire construction site;
- Final inspection of the line;
- Handing over, test & commissioning;
- Submission of 'As Built' Information;
- Site clearance.

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

The Eskom Project Manager will contact the allocated Contractor and issue the Contractor with the design package for the project to be executed. A Task Order will be issued as well, which will detail all the project-specific requirements for execution of the project. The Task Order issued will form the basis of the agreement between Eskom and the Contractor for each project to be executed in terms of this contract.

The terms and conditions contained in the Task Order will be in accordance with the terms and conditions of this contract but specific to the requirements of the project to be executed.

The allocated Contractor will conduct a site visit with the Eskom Project Representatives and verify the scope of work to be executed contained in the design package, assess the Site conditions, the Project Specific SHEQ requirements and SD&L requirements before the quotation for the works is finalised. The Project Manager will then request a quotation from the Contractor for the execution of the works as verified. The quotation must be submitted to the Project Manager by the Contractor within 7 days. The Project Manager will request the Quantity Surveyor to verify the quotation for correctness and confirm the cost according to the agreed negotiated rates.

Should the quotation require adjustment, the Project Manager will request the allocated Contractor to amend the quotation. Once the quotation has been accepted by Eskom, the Project Manager will issue the allocated Contractor with a Task Order for the project which will contain a Task Order Number. The Task Order will then be signed off by the Project Manager and the Contractor, and work may then commence on the project. No work may commence on a project unless the Task Order has been issued and signed, the Contractor Safety File has been approved by Eskom, the 37(2) agreements has been signed and Site Access has been granted to the allocated Contractor. Eskom will not be liable to pay for any work unless a valid Task Order Number has been issued.

The Contractor is to submit the Project Specific Safety File within seven days upon being requested to do so by the Project Manager for approval by Eskom. The Safety File is to conform to all Eskom and OHS requirements. Should there be a need to rectify the Safety File, an additional opportunity will be granted to conform to the recommendations made by the Eskom SHE representative, and it must be resubmitted within seven days for approval. Should the Project Specific Safety File fail upon resubmission, the works will be allocated to another Contractor.

The Contractor will compile a Risk Register as per the terms and conditions of the ECC for discussion at regular Risk Reduction Meetings or as per agreement with the Project Manager.
It is expected from the Contractor to do the whole of the work as per the timeframe set in the Task Order and agreed Programme of the Works.

The Contractor will be responsible for the collection and transporting of all necessary material from any and/or all Eskom warehouses and delivery of the material to site, as well as returning any material to Eskom stores from the site upon instruction from the Project Manager. Payments will be made based on the distance from the site to the relevant Eskom store and back to site.

Minimum recommended working hours to be observed on site are from 07h30 to 16h00.
The Contractor is to ensure that all required documentation prescribed by law is kept on file at the site office.
All OHS and Construction Regulation requirements are to be adhered to by the Contractor.

The Contractor will also ensure that all plant and equipment dedicated to the project will not be removed from site until there is no use for the intended plant and equipment. No moving of plant and equipment between projects will be allowed as it will have an impact on completion of the project and lead to delays in completion. The Contractor is to ensure that all Site Managers are competent and trained in the use of the ECC and are fully conversant and familiar with the usage and procedures thereof. Adherence to the terms and conditions of the ECC is essential and a requirement of all Contractor Site Managers dedicated to each project as per the Construction Regulations.

Payment Assessments will only be done for work done to date. No material on site will be paid for. Records of Defined Costs are to be kept on file on site whereby the Project Manager always has access to this file.
Retention shall be charged on the total value of all work executed and materials supplied under the Contract. The percentage of retention shall be 8.5%

1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
AAIA	Approved Asbestos Inspection Authority
ACM	Asbestos Containing Materials
AFSA	Arbitration Foundation of Southern Africa
AL	Action Level
B-BBEE	Broad Based Black Economic Empowerment
CAT	Central Africa Time*
CIDB	Construction Industry Development Board*
deg.C	Degrees Celsius*
ECC3	NEC3 Engineering and Construction Contract (April 2013)
Fax	Facsimile*
GNR	Government Notice Regulation*
HSG173 / HSG248	Health and Safety Guidance publications*
HV	High Voltage

ICE-SA	Institution of Civil Engineers South Africa*
KNPS	Koeberg Nuclear Power Station
kV	Kilovolt*
Ltd	Limited*
mm	Millimetre*
NEC3	New Engineering Contract, 3rd edition*
No.	Number*
OEL	Occupational Exposure Limit
P&Gs	Preliminary and General items*
Reg No.	Registration Number*
SA	South Africa / South African*
SANAS	South African National Accreditation System
SEIFSA	Steel and Engineering Industries Federation of Southern Africa*
SMME	Small, Medium and Micro Enterprise*
SOC Ltd	State-Owned Company Limited*
TBA / TBC	To Be Advised / To Be Confirmed*
Tel	Telephone*
TWA	Time-Weighted Average
VAT	Value Added Tax

TBC	To Be Confirmed
PM	Project Manager
QS	Quantity Surveyor
B-BBEE	Broad Based Black Economic Empowerment
PPPFA	Procurement Preferential Policy Framework Act

1.4 Acceptance of Eskom SHEQ Policies, Specifications and Procedures

The attached documents form part of this legal binding contract, the Contractor confirms that he has familiarized himself with all the embedded documents from xx to xx as indicated.

No.	Unique Identifier	Revision	Document Title
1	**240-68099512**	9	Form a HV Cable System  240-68099512 (Rev 9) Form A HV cable s
2	**240-12248652**	7	List of Tender Returnables HV Cable System

			240-12248652 (Rev 7)_List of Tender Ret
3	**240-73416879**	2	SHE specification for HV Cable Project 240-73416879 SHE specification for HV

2. Management and start up.

2.1 Management meetings

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

Title and purpose	**Approximate time & interval**	**Location**	**Attendance by:**
Pre-introductory meeting	Upon request of the Project Manager at an agreed date by all parties	Site	PM, QS, Site Supervisor, Safety and Environmental Representatives and the Contractor.
Introductory meeting	After safety and environmental files have been assessed and approved.	Site	PM, QS, Site Supervisor, Safety and Environmental Representatives and the Contractor.
Toolbox talk and risk assessment	Daily before work begins.	Site	Contractor and Site Supervisor.
Risk register and compensation events	As necessary.	Site	PM, Contractor and Site Supervisor.

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

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

2.2 Documentation control

All correspondence is to be addressed to the Project Manager with a chronological numbering system.

2.3 Health and safety risk management

The *Contractor* shall comply with the health and safety requirements contained in Invitation to Tender.

2.4 Environmental constraints and management

The *Contractor* shall comply with the environmental criteria and constraints contained in Invitation to Tender.

2.5 Quality assurance requirements

The Contractor shall comply with the quality management specification contained in the tender document for this Works Information.

2.6 Programming constraints

A comprehensive and fully detailed programme is to be submitted within the seven (7) days after the introductory meeting and should indicate all milestones and critical dates. This programme must first be approved by the Project Manager and must be updated on an as and when required basis by the Project Manager.

The following dates shall be clearly reflected on the programme:

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

Updated programmes must be available at all meetings reflecting progress to date and the date when delivery will take place through the use of task orders.

FORMAT OF THE PROGRAM

- The Contractor shall submit his construction program in terms of the conditions of contract.
- The Contractor is to submit a revised programme for acceptance at each site meeting.
- This program shall be in the form of an approved Gantt Chart containing the following information:
- All construction activities, including milestones, initial tasks, critical path, required Outages, and target Dates. All potential risk activities should be clearly indicated on the critical path.
- Every activity on the programme will be clearly linked to labour resources and equipment required to perform the specific activity.
- Projected weekly progress on site for the entire duration of the contract.
- Completion and hand-over Dates for formal inspection by the site supervisor must be indicated.
- A column showing the daily tempo of all the construction activities must be indicated next to the activity on the programme.
- Project expenditure on a monthly basis for the entire duration of the contract.
- The following project phases and activities are minimum requirements for the programme:
- Site Establishment and Material Delivery – Lead times to be specified.
- Preparation work – Work that can be completed without the necessity of power outages.
- Outage work – Work that must be completed under outage conditions.
- Here is the text from the image:
- Planned outages to be included in the programme
- Contractors float to be included in the programme
- The Contract Program will be on display in the Contractors Site Offices and will be updated weekly. In addition to the maintaining of this programme, the Contractor will report progress to the Project Manager at each site meeting or at request of the Project Manager.
- 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.

- Should any deviations to the program be found the Contractor shall submit a revised program to the Project Manager within one week of such deviations being brought to the Contractor's attention.
- The Outages must be arranged with Employer via the Outage arrangement procedures, as a pre-requisite for the acceptance of the programme by the Project Manager.
- Acceptance of any program by the Project Manager shall have no contractual status other than an indication that the Project Manager is satisfied as to the order in which the work is to be carried out, and that the Contractor undertakes to perform all work in accordance with the accepted program.
- The Project Manager retains the right to alter the accepted program should circumstances on site necessitate such a change.

OTHER INFORMATION TO BE SHOWN ON THE PROGRAM
The following Statutory non-working days are included within the contract period:

- All Public Holidays for the duration of the contract.
- The programme must clearly indicate the non-working days for the entire construction period.

2.7 Contractor's management, supervision and key people

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

2.8 Invoicing and payment

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

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

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

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

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)	

2.9 Insurance provided by the *Employer*

See Annexure A on page 48 of the Works Information.

2.10 Contract change management

All compensation events Notified and Accepted shall be done on standard forms. Compensation Events shall also follow the Eskom Governance processes for Approval.

2.11 Provision of bonds and guarantees

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

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

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

The *Contractor* will keep records of the documents for compensation events and allow the *Project Manager* access to those records when required.

2.13 Training workshops and technology transfer

The *Contractor* provides his employees with relevant training for them to execute the works in accordance with the contract.

3 Engineering and the *Contractor*'s design

3.1 Employer's design

The Employer will supply Contractor with a final design document compiled by the Project Engineer detailing the scope of work to be executed on the project as well as Project Drawings.

3.2 As-built drawings, operating manuals and maintenance schedules

The Contractor is required to provide the necessary drawings, operating manuals, test certificates and training program details, as well as a commitment letter for providing ongoing product support.

4. Procurement

4.1 People

4.1.1 Minimum requirements of people employed on the Site

All people employed by the Contractor for execution of the works should have Police Clearance before work can commence. The Contractor's employees shall be sober when carrying out their duties and may be subjected to random breathalyser tests. All the employees shall also adhere to Eskom Life Saving Rules while on Eskom premises.

4.1.2 BBBEE and preferencing scheme

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

4.1.3 Supplier Development Localisation & Industrialization

The Contractor complies with and fulfils the Contractor's obligations in respect of Supplier Development Localisation & Industrialization in accordance with and as provided for in the Contractor's SDL&I attached and stated in the ITT to this enquiry.

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

The Contractor's failure to comply with his SDL&I obligations constitutes substantial failure on the part of the Contractor to comply with his obligations under this contract.

4.2 Subcontracting

The target for subcontracting is a minimum of 30% of local content. Subcontracting or outsourcing of civil works (foundations) materials supply, bush clearing, site clearing, and security services shall be distributed across the preferred groups of Black People with Disability (BPwD), Black Youth Owned (BYO) and Black Woman Owned (BWO) as shown below.

Tenderers are required to identify, select and develop the BPwDs and BYOs to be their enterprise development candidates for the supply of goods and services.

Subcontract 30% of the contract value to the following designated groups:

I. an EME or QSE which is at least 51% owned by black people;
II. an EME or QSE which is at least 51% owned by black people who are youth;
III. an EME or QSE which is at least 51% owned by black people who are women;
IV. an EME or QSE which is at least 51% owned by black people with disabilities.

A detailed subcontracting proposal or plan shall be required as part of the tender returnable

4.2.1 Preferred subcontractors

The Contractor to submit the names of each proposed subcontractor to the Employer for acceptance. The Contractor does not appoint a subcontractor until the Employer has accepted such subcontractor.

4.2.2 Subcontract documentation, and assessment of subcontract tenders

The Contractor to indicate the percentage of subcontracting, the proposed subcontractors together with their BBBEE statuses, and the sources of assets, goods or services when local content and production criteria are

applicable. The proposed target will form part of the contractual obligation. The NEC system is compulsory for all subcontract documentation.

4.2.3 Limitations on subcontracting

The Contractor is not allowed to sub-contract more than 25% of the contract to another enterprise/supplier that does not have equal or higher BBBEE status, unless the intended subcontractor is an EME that has the capability and ability to execute the sub-contract, in order to claim the points for BBBEE.

4.2.4 Attendance on subcontractors

The Contractor is responsible for performing on the provided scope of work as if he had not subcontracted. The appointed Contractor will also be liable to the Subcontractors' employees, as he legally and liable to this contract.

4.3 Plant and Materials

4.3.1 Quality

The Contractor shall control his activities and processes in accordance with Eskom's Quality Requirements for Procurement of Assets, Goods & Services, QM-58 and ISO-9001

4.3.2 Contractor's procurement of Plant and Materials

The Employer requires warranties from the Contractor to be in favour of the Employer and not just to be Contractor during the life of the contract.

4.3.3 Spares and consumables

None

4.4 Tests and inspections before delivery

All materials shall be regularly tested at the manufacturers' factories. The Contractor shall make sure that regular quality control tests are carried out to ensure that good quality of the materials is maintained.

4.5 Cataloguing requirements by the *Contractor*

Refer to technical requirements.

5. Construction

5.1 Completion, testing, commissioning and correction of Defects

5.1.1 Work to be done by the Completion Date

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

	Item of work	**To be completed by**
	As built drawings of	Within days after Completion
	Performance testing of the *works* in use as specified in paragraph of this Works Information.	See performance testing requirements.

5.1.2 Use of the *works* before Completion has been certified

The Contractor will have to carry out the works, as per the instruction of the Project Manager.

5.1.3 Materials facilities and samples for tests and inspections

The Employer or Project Manager may request random tests and inspections from time to time. The purpose is to verify the quality of the goods being supplied.

5.1.3 Commissioning

Commissioning must be carried out either before or after Completion, depending on the programme issued by the Project Manager. The Project Manager determines the timing.

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

In order to put the works into operation the Project Manager may require the Contractor to either do this for him or be in attendance whilst he does it, depending on who is the responsible person.

5.1.5 Take over procedures

Take-over is after or at the same time as Completion. The Contractor is to arrange an inspection before completion of the installation to inspect and identify any outstanding or any defects. The Project Manager may require the Contractor to provide assistance, on an as and when required basis.

5.1.6 Access given by the *Employer* for correction of Defects

The Project Manager arranges access for the Contractor to use a part of the works which has been taken over if needed to correct any Defects. After the works have been put into operation, the Employer may require the Contractor to undertake certain procedures before such access can be granted. The Contractor will be responsible for ensuring that the area to be worked in is barricaded before correcting any defects.

5.1.7 Performance tests after Completion

The Contractor to demonstrate that the works can operate as guaranteed by the Contractor (in Contractor's Works Information) or specified by the Employer either here or elsewhere in this Works Information.

5.1.8 Training and technology transfer

The Employer requires the Contractor to provide training on the use of the access control or any associated transfer of technology from him to the Employer.

5.1.9 Operational maintenance after Completion

The Employer may require the Contractor, before the Defects Date, to perform certain duties after Completion and Take Over which relate to the maintenance of the works.

6. Plant and Materials standards and workmanship

Detailed specification and user requirements are on the attached document with unique Identifier.

6.1 Investigation, survey and Site clearance

Detailed specification and user requirements are on the attached document with unique Identifier.

6.2 Building works

The provisions will be according to Eskom design and Standards for Each project.

6.3 Civil engineering and structural works

The provisions will be according to Eskom design and Standards for Each project. Detailed specification and user requirements are on the attached document with unique Identifier.

6.4 Electrical & mechanical engineering works

Detailed specification and user requirements are on the attached document with unique Identifier

7. List of drawings

7.1 Drawings issued by the *Employer*

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

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

Drawing number	Revision	Title

C3.2 *CONTRACTOR*'S WORKS INFORMATION

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

Typical sub headings could be

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

This section could also be compiled as a separate file.

Annexure A: Eskom Escap

Eskom
Escap

To whom it may concern

This letter serves to confirm the insurance cover as follows:

Insurer	:	ESCAP SOC Ltd
Insured	:	Eskom SOC Ltd including National Transmission Company of South Africa (NTCSA) SOC Ltd, Eskom Rotek Industries SOC Ltd, and other its wholly owned subsidiaries
Additional Insureds	:	Entities dictated by financial or operational interest of the Insured, each for their respective rights and interest All contractors undertaking work for or on behalf of the Named Insured but only in respect of the execution of any contract(s) (the "Contracts") between the contractor and Named Insured (it being understood that where the Named Insured undertakes the work they shall be deemed to be the "Contractor" provided that their rights hereunder shall not exceed the rights of any independent contractor working on behalf of the Named Insured) (hereinafter called the "Contractor"). All subcontractors employed by the Contractor and all other subcontractors (whether nominated or otherwise engaged but only in respect of the fulfilment of the contract(s)) (hereinafter called the "Subcontractor") for their respective rights and interests. Any reference to Insured in this Policy shall apply to the Named Insured and where applicable the Additional Insured listed above. Cover in respect of contractors and subcontractors shall only be provided to the extent that the Named Insured undertakes in the contracts with the

PO Box 1091 Johannesburg 2000 SA
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Escap SOC Ltd Reg No 1993/003340/30

Additional Insured between the Named Insured and Contractor and/or Subcontractor to provide the

Insurance coverage found in this policy (hereinafter called the "Insurance Cover") for such parties

Policy name : Annual Construction All Risks

Period of insurance : 01 April 2026 – 31 March 2027

Policy limit : **Section I - Contract Works:**
Basic project value of **R 500 million** up to **R 1 billion and 60 months at inception**, thereafter unlimited in value and project time up to completion.

Section II - Contract Works Public Liability:
R25 million, any occurrence or series of occurrences arising out of one event

Policy coverage : Direct physical loss of or damage to any part of the Works and property insured including while in transit or at storage, including third party liability.

Policy deductibles : As per table below

Deductible	**Division / Coverage**
Section I – Contract Works	
R 500,000	Physical Damage to Property
R10 000 000	Transmission – Theft and Vandalism
R 5,000,000	Distribution - Theft & Vandalism
R1 000 000	Eskom Rotek Industries – Theft and Vandalism
R 50,000	Debris Removal
R 50,000	Debris Removal (No Damage)
R 25,000	Borrowing of plant for commission purposes
R 1,000	Documentation

Section II – Contractors' Public Liability	
R 50,000	Damage resulting from Fire and Spread of Fire
R 20,000	All other losses

Escap SOC Ltd Reg No 1993/003340/30

Note:
Cover is only limited to projects declared for the insurance period stipulated above and as verified and finalised by the Insurer.

Please refer your queries to your contact person at Eskom

Yours sincerely

Shadrack Sivhugwana
Escap SOC Ltd – Chief Executive Officer Date:
04 June 2026