

PART 2: PRICING DATA

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C2.1 Pricing instructions: Option B

1. The *conditions of contract*

1.1. How the contract prices work and assess it for progress payments

Clause 11 in NEC3 Engineering and Construction Contract, June 2005 and 2013 (ECC) Option B states:

Identified 11

**and defined
terms**

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.

(22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events.

(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.

1.2. Function of the Bill of Quantities

Clause 55.1 in Option B states, "Information in the Bill of Quantities is not Works Information or Site Information". This confirms that instructions to do work or 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.

1.3. Guidance before pricing and measuring

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract (June 2005) Guidance Notes before preparing the *bill of quantities* or before entering rates and lump sums into the *bill*.

Historically bill of quantities-based contracts in South Africa have been influenced by the different approaches of the civil engineering and building sectors of the industry through their respective discipline based standard forms of contract and methods of measurement. This is particularly apparent in the approach to the Preliminary and General bill. On the other hand, because ECC caters for several disciplines in the same contract, including electrical works, a different approach not currently found in local methods of measurement to the Preliminary & General bill items may have been used.

The NEC approach to the P & G bill assumes use will be made of method related charges for Equipment applied to Providing the Works based on durations shown in the Accepted Programme, fixed charges for the use of Equipment that is required throughout the construction phase, time related charges for people working in a supervisory capacity for the period required, and lump sum charges for other facilities or services not directly related to performing work items typically included in other parts of the bill.

2. Measurement and payment

2.1. Symbols

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

Abbreviation	Unit
%	percent
h	hour
ha	hectare
kg	kilogram
kl	kilolitre
km	kilometre
km-pass	kilometre-pass
kPa	kilopascal
kW	kilowatt
l	litre
m	metre
mm	millimetre
m ²	square metre
m ² -pass	square metre pass

m ³	cubic metre
m ³ -km	cubic metre-kilometre
MN	meganewton
MN. M	meganewton-metre
MPa	megapascal
No.	number
Prov sum ¹	provisional sum
PC-sum	prime cost sum
R/only	Rate only
sum	Lump sum
t	ton (1000kg)
W/day	Workday

2.2. General assumptions

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

2.2.2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit and

everything necessary as incurred or required by the *Contractor* in carrying out or providing that item.

- 2.2.3. Clause 63.13 in Option B provides that these rates and Prices may be used as a basis for assessment of compensation events instead of Defined Cost.
- 2.2.4. Where this contract requires detailed drawings, designs or other information to be provided, and no rates or prices are included in the *bill* specifically for such matters, then the *Contractor* is deemed to have allowed for all costs associated with such requirements within the tendered rates and Prices in the Bill of Quantities.
- 2.2.5. An item against which no Price is entered will be treated as covered by other Prices or rates in the *bill of quantities*. If several items are grouped together for pricing purposes, this will be treated as a single lump sum.
- 2.2.6. 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 and not the quantities given in the Bill of Quantities.
- 2.2.7. The short descriptions of the items of payment given in the *bill of quantities* are only for the purposes of identifying the items. More detail regarding the extent of the work entailed under each item is provided in the Works Information.
- 2.2.8. Escalation Provision in terms of 'Clause X1' of the NEC
- An allowance for contract price escalation has been included in the Final Summary of the Bill of Quantities to make provision for anticipated fluctuations in the cost of labour, materials, plant, fuel, transportation, and other inputs affecting the execution of the Works over the Contract Period.

- The allowance is provisional and subject to adjustment in accordance with the provisions of the Contract and the applicable price adjustment/escalation formula. The amount certified in respect of escalation shall be determined based on the actual entitlement arising from fluctuations in applicable cost indices and/or rates during the execution of the Works.
- The allowance shall not be construed as a guaranteed payment to the Contractor, and any adjustment shall be subject to the applicable contractual conditions, supporting documentation, and certification by the NEC Project Manager

2.3. Departures from the *method of measurement*

2.4. Amplification of or assumptions about measurement items

For the avoidance of doubt 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*

Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	BILL OF QUANTITIES NOTES In accordance with the NEC3 contract, this is an Option B: Remeasurement priced contract with bill of quantities. The Employer provides the bill of quantities which is priced by the Contractor. The contract price is the sum of prices for all items in the bill which may include lump sums for certain items. When the work is done, if it is found by remeasurement that the estimated quantity is not correct, it is corrected, and payment is made to the Contractor to reflect the actual work conducted.				



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	The monetary amounts that the Contractor fills in, in this document, shall be deemed to be algebraically accurate and fully inclusive of the following: The monetary amounts that the Contractor fills in, in this document, shall be deemed to be algebraically accurate and fully inclusive of the following: Inductions, permitting, all SHERQ requirements as per the Employer's requirements, risk assessments by relevant authorities as determined by the Employer and Statutory Bodies, inspections and audits, planning, all Plant and Materials and Equipment required to undertake the complete scope of the works, access requirements for Plant and Materials and Equipment, certification of Equipment and vessels, fuels and lubricants and any other consumables, demolition and disposal of				



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	existing materials and equipment, all diving work below water and on the water surface, underwater installation by diving, procurement, offloading, material and equipment handling, storage, fabrication, equipment and infrastructure refurbishment, testing, modifications, welding, bolting, production, corrosion protection, rigging, trial fitting, marking, packing, transportation, mechanical and civil land structural and electrical and control installations, electrical and control system hook-ups and wiring, punch listing, cold and hot commissioning, trial operation, handover and project management and any other requirements not specifically mentioned but required as per industry and engineering and construction legislation and requirements.				



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	<u>SECTION NO 1</u> <u>PRELIMINARY AND GENERAL</u> <u>BILL NO.1:</u> <u>PRELIMINARIES</u> PREAMBLES Fixed preliminary items Fixed preliminary items Fixed preliminary items will be valuated and paid on a proven cost basis up to the total value				



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
A.1	<u>Fixed Charge Items</u>				
	<u>Contractual requirements</u>				
A.1.1	All Contractual and legal requirements incl. safety, insurances, compensations	Sum	1		
A.1.2	Main name and notice board	Sum	1		
A.1.3	Preparation and Maintenance of Quality Control Plan (QCP)	Sum	1		
A.1.4	Permits and Site Access	Sum	1		
	<u>Establishment of Facilities on Site</u>				
A.1.5	Offices and storage sheds	Sum	1		
A.1.6	Ablution and latrine facilities	Sum	1		
A.1.7	Tools and equipment	Sum	1		
A.1.8	Water supplies, electric power, communications, dealing with water	Sum	1		
A.1.9	Supply and install electrical connection on site camp	Sum	1		
A.1.10	Removal of site establishment	Sum	1		
A.1.11	Rehabilitation of site	Sum	1		
Total Carried Forward					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
A.1.12	<u>Health and safety:</u> Occupational Health and Safety Act, Construction Regulations, 2003, and the Health and Safety Specification obligations, Maintenance of Health and Safety File and Close out at end of project	Sum	1		
A.1.13	Health and Safety compliance (incl. PPE, harnesses, etc.)	Sum	1		
A.1.14	All other fixed-charge obligations	Sum	1		
A.1.15	Environmental Management Compliance (Compliance to TNPA CEMP, SES and Environmental Legislations)	Sum	1		
A.2	<u>Time Related Items</u>				
A.2.1	Contractual requirements	Months	18		
	<u>Operation and maintenance of facilities on site for duration of contract</u>				
A.2.2	Offices and storage sheds	Months	18		
A.2.3	Ablution and latrine facilities	Months	18		
A.2.4	Tools and equipment	Months	18		
Total Carried Forward					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
A.2.5	Plant	Months	18		
A.2.6	Provision of water. electricity & communication	Months	18		
A.2.7	Supervision for duration of contract	Months	18		
A.2.8	Company and head office overhead costs for duration of construction	Months	18		
A.2.9	Other time related obligations	Months	18		
A.2.10	Provision of on-site security services to safeguard the Contractor's assets and the entire site on a 24-hour basis, seven (7) days per week, for the duration of the contract.	Months	18		
A.2.11	On site Staff	Months	18		
A.2.12	Onsite Environmental Officer	Months	18		
Total Carried Forward					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
A.3	Enterprise Development (CIDB B.U.I.L.D PROGRAM) Indirect Targeting for Enterprise Development though Construction Works Contracts, Gazette Notice No.36190 of 25 February 2013 (a) Enterprise Development of Targeted Enterprise or JV partners				
A.3.1	(a.1) Needs Analysis and Enterprise Development Plan per Targeted Enterprise	Item	1		
A.3.2	(a.2) Monitoring and Interim Reporting per Targeted Enterprise	Per Quarter	6		
A.3.3	(a.3) Project Completion Report per Targeted Enterprise	Item	1		
A.3.4	Total (a.1 + a.2 + a.3)	Prov Sum	1		
Total Carried Forward					

Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	<u>END OF SECTION 1</u>				
Total of Section 1 Carried Forward to Final Summary					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
B.1	<u>SECTION NO. 2: CIVIL WORKS</u> <u>BILL NO.1: ALTERATIONS, DEMOLITIONS, ETC</u> PREAMBLES The Model Preambles for Trades (2008 edition), as published by the Association of South African Quantity Surveyors, shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items, fully described in the said Model Preambles, will be entertained The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said Model Preambles SUPPLEMENTARY PREAMBLES General: The Contractor shall carry out the whole of the works				



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	with as little mess and noise as possible and with a minimum of disturbance to adjoining premises and their tenants. He shall provide proper protection and provide, erect and remove when directed, any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the Employer Demolitions and Works on Site Water supply pipes and other piping that may be encountered and found necessary to disconnect or cut, shall be effectually stopped off or grubbed up and removed, and any new connections that may be necessary shall be made with proper fittings, to the satisfaction of the Principal Agent The Contractor will be held solely responsible for any damage to persons and property and for the safety of the structures and must				



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	make good at his expense any damage that may occur All demolitions and works on site must be carried out carefully and in the safest possible manner and the Contractor is to make a thorough examination and take all necessary precautions before proceeding with the work. The utmost care is to be observed to avoid any structural or other damage in the remaining portions of the existing building Old materials to be carted away Old materials from the alterations, except where described as to be re-used or handed over, as well as all rubbish, etc must be regularly carted from the site and not be allowed to accumulate on or around the site				



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
B.1.1	<u>Security Fence</u> Taking down and removal of: 2,4 m Steel Palisade Fencing including breaking removing any concrete bases then backfill and make good. Then remove palisade fence to be disposed of at approved dump site(s).	m	1,500.00		
B.1.2	2,7 m high security welded mesh Fencing including breaking removing any concrete bases then backfill and make good. Then remove palisade fence to be disposed of at approved dump site(s).	m	2,000.00		
B.1.3	<u>Site Clearance Etc</u> Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc. and trees not exceeding 200mm girth and cart away to prescribed stockpiles on site within 30 km radius	m ²	7,000.00		
B.1.4	Stripping average 150mm thick layer of topsoil and depositing material in prescribed stockpiles on site within 30 km radius	m ²	7,000.00		
Total Carried Forward					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
B.1.5	<u>Service Ducts</u> Supply, deliver and install 110dia Upvc Pipes	m	5000		
B.1.6	Suppl, deliver and install 160dia Upvc Pipes	m	5000		
B.1.7	Supply, deliver and install Cable Draw Wire	m	10000		
B.1.8	Supply, deliver and install Cable Marking tape	m	5000		
<u>Protection, Removal and Realignment of Existing Services:</u>					
B.1.9	Underground power cables	m	300		
B.1.10	Temporary protection of other services	Sum	1		
B.1.11	Permanent protection of existing services by concrete encasement	Sum	1		
<u>Fencing</u>					
B.1.12	Design, supply, deliver and install complete 2.4 m high security welded mesh fence including 2.7m high intermediate posts and 300mm overhead spikes and all associated accessories.	m	3,500.00		
Total Carried Forward to Section Summary					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
B.2	<u>BILL NO.2</u> <u>EARTHWORKS</u> <u>Carting away of excavated material</u> Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stockpiles situated on the building site <u>Filling</u> Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material				
Total Carried Forward					

Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
B.2.1	<u>Excavation</u> Excavation in earth not exceeding 2m deep including shaping and trimming for Bases Extra over trench and hole excavations in earth for excavation in	m ³	140		
B.2.2	Soft rock	m ³	14		
B.2.3	Hard rock Extra over all excavation for carting away	m ³	7		
B.2.4	Surplus material from excavations to prescribed stockpiles within 15km radius	m ³	140		
B.2.5	Risk of collapse of excavations Sides of trench and hole excavations not exceeding 1,5m deep	m ²	10,500		
	<u>Excavation in Earth Not Exceeding 2m Deep</u>				
B.2.6	Pipe trenches	m3	1300		
B.2.7	Light pole/manhole foundations	m3	200		
Total Carried Forward					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	<u>Existing Services</u>				
B.2.8	Excavate by hand in soft material to expose electrical cables	m3	300		
B.2.9	Excavate by hand in Hard material to expose electrical cables	m3	300		
	<u>Earthworks</u>				
B.2.10	Imported bedding material	m3	600		
B.2.11	Backfilling with excavated material	m3	900		
B.2.12	Disposal of surplus material to designated location within 30 kms radius	m3	200		
	<u>Placing And Compacting the Material In 200mm Thickness Lifts (Refer to C3 Scope of works and drawing pack for material specifics)</u>				
B.2.13	Compacting to 90% Mod AASHTO	m3	1000		
B.2.14	Compacting to 100% Mod AASHTO	m3	500		
B.2.15	Compacting to 93% Mod AASHTO	m3	350		
	<u>Keeping Excavations Free of Water</u>				
B.2.16	Keeping excavations free of all water other than subterranean water	Months	18		
B.2.17	Underground services survey	Sum	1		
Total Carried Forward					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
B.2.18	<u>Manholes</u> Hand excavation not exceeding 2m in depth	m3	40		
B.2.19	Supply and install of precast manhole. 1m diameter 1m depth with lockable lid	No.	10		
B.2.20	<u>Earth filling</u> Sub-base course of G5 material in accordance with SABS 1200 DM Compacting to 93% Mod AASHTO	m3	40		
B.2.21	Sub-base course of G3 material in accordance with SABS 1200 DM Compacting to 93% Mod AASHTO	m3	40		
Total Carried Forward to Section Summary					

Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
B.3	<u>BILL NO.3</u> <u>CONCRETE, FORMWORK AND REINFORCEMENT</u> The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the engineer. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the engineer. (Test cubes are measured separately) The making, storing and testing of test cubes shall be carried out according to SANS 5861 and SANS 5862 and the rule for validity of test results shall be in accordance with SANS 5863. The rule for acceptance of				



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	valid cube results shall be in accordance with SANS 2001- CC1 clause 5.1.2. All valid cube test results shall be recorded in consecutive or date order and not be rearranged to influence the outcome of the relevant rules. Statistical acceptance of the cube results is issued together with these Bills of Quantities Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured, and the cost thereof shall be deemed to be included in the allowance for taking the				

Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"				
	<u>Unreinforced Concrete Cast in Excavated Surfaces</u>				
	25 MPa/19mm Concrete				
B.3.1	Bases	m ³	140		
	<u>Test Cubes</u>				
B.3.2	Making and testing 150 x 150 x 150mm concrete strength test cubes, 3 cubes per load	No.	70		
	<u>Rough Formwork</u>				
	Rough Formwork to:				
B.3.3	Sides of bases	m ²	350		
	<u>END OF SECTION 2</u>				
Total Carried Forward to Section Summary					

BILL NO.	SECTION 2 SUMMARY	AMOUNT
B.1	BILL NO.1: ALTERATIONS, DEMOLITIONS, ETC	
B.2	BILL NO.2: EARTHWORKS	
B.3	BILL NO.3: CONCRETE, FORMWORK AND REINFORCEMENT	
TOTAL EXCLUDING VAT CARRIED TO FINAL SUMMARY		R

Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
C.1	<u>SECTION NO.3: ELECTRICAL</u> <u>BILL NO.1</u> <u>ELECTRICAL DESIGN,</u> <u>VERIFICATION AND</u> <u>MODELLING</u>				
C.1.1	Verify and adjust the proposed lighting and kiosk drawings/design provided in accordance with SANS and the appropriate lighting requirements to ensure the installation complies with the relevant legislation and regulatory framework standards.	Sum	1		
C.1.2	Create a lighting simulation and model of the proposed/adjusted lighting installation.	Sum	1		
Total Carried for Section Summary					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
C.2	<u>BILL NO 2: LIGHTING</u> <u>ENTRANCE LIGHTING</u> Supply and install Luminaires including all connections, etc., mounted in position including all terminations, aiming and accessories				
C.2.1	Supply, deliver, offload, and install 4 x 12m (above NGL) planted Galvanised steel streetlight poles.	No	4		
C.2.2	Supply, deliver and install equivalent or similar approved to Marine Grade LUXMO II LED 32 Street Light, 140W, 5000K with bottom entry dual spigot and a 5A 1-phase overcurrent breaker (MCB) SABS Approved, with all required accessories.	No	8		
Total Carried Forward					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
C.2.3	<u>Distribution Boards</u> Design, Supply and Install LV Kiosk with Back-to-Back doors and distribution board including all breakers, mounting accessories, plugs, glands, gland plate, wiring, labelling in the stainless steel 3CR12 enclosure. Powered coated Avo Green with padlock lockable doors (Master Locks included) and inclusive of concrete plinth bases. Each kiosk enclosure should have a Five-sided cage structure (four vertical walls with security gates and a roof). The security mess panel cage system is to be constructed from mild steel and hot dip galvanized for marine environments as per SANS 121/BS EN ISO 1461. The gate system is to be secured with an approved padlock entry system. Clearance should be made so that the Kiosk doors can be opened for operations and maintenance. Each kiosk should house the following which is to be supplied and	No.	1		



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	installed as well (These DBs are for 3x 9 light circuits; EK8, EK12, EK15 & 2 x 12 light circuits; EK3, EK5):				
	All components to comply with SABS				
	-1 x 40A 3-phase isolating Circuit breaker (Large frame)				
	-3 x 32A 1-phase overload Circuit breaker (MCB)				
	-2 x 5A 1-phase overload control circuit breaker (MCB)				
	-1 x 16A photocell IP65				
	-1 x 3-phase 45A contactor 220V coil				
	<u>Cabling</u>				
C.2.4	16mm ² 4 core ECC cable	m	200		
	<u>Testing And Commissioning</u>				
C.2.5	Testing and Commissioning of complete installation in accordance with SANS 10142-1 including the issue of COC certificates	Sum	1		
Total Carried Forward					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	<u>Perimeter Lighting</u> <i>Supply and install Luminaires including all connections, etc., mounted in position including all terminations, aiming and accessories</i>				
C.2.6	Supply, deliver, offload, and install 6m above NGL planted galvanised streetlight poles. Poles to be treated with anti-corrosion layer suitable for marine environment	No.	170		
C.2.7	Supply, deliver and install equivalent or similar approved to Marine Grade LUXMO I LED 4x6 Type Street Light, 107W, 5000K with bottom entry spigot, and a 5A 1-phase overcurrent breaker (MCB) SABS Approved with all required accessories	No.	170		
Total Carried Forward					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
C.2.8	<u>Distribution Boards</u> Design, Supply and Install LV Kiosk with Back-to-Back doors and distribution board including all breakers, mounting accessories, plugs, glands, gland plate, wiring, labelling in the stainless steel 3CR12 enclosure. Powered coated Avo Green with padlock lockable doors (Master Locks included) and inclusive of concrete plinth bases. Each kiosk enclosure should have a Five-sided cage structure (four vertical walls with security gates and a roof). The security mess panel cage system is to be constructed from mild steel and hot dip galvanized for marine environments as per SANS 121/BS EN ISO 1461. The gate system is to be secured with an approved padlock entry system. Clearance should be made so that the Kiosk doors can be opened for operations and maintenance. Each kiosk should house the following which is to be supplied and	No.	9		

Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	installed as well(These DBs are for the 9 x 12 light circuits; EK1, EK2, EK4, EK6,EK7, EK9, EK10, EK11, EK13): -1 x 200A 3-phase Main Circuit breaker (Large frame) fault level current rating according to contractor design and correct current tripping curve to be selected for installations -1 x 40A 3-phase isolating Circuit breaker (Large frame) -3 x 32A 1-phase overload Circuit breaker (MCB) -2 x 5A 1-phase overload control circuit breaker (MCB) -1 x 16A photocell IP65 -1 x 3-phase 45A contactor 220V coil				



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
C.2.9	Design, Supply and Install LV Kiosk with Back-to-Back doors and distribution board including all breakers, mounting accessories, plugs, glands, gland plate, wiring, labelling in the stainless steel 3CR12 enclosure. Powered coated Avo Green with padlock lockable doors (Master Locks included) and inclusive of concrete plinth bases. Each kiosk enclosure should have a Five-sided cage structure (four vertical walls with security gates and a roof). The security mess panel cage system is to be constructed from mild steel and hot dip galvanized for marine environments as per SANS 121/BS EN ISO 1461. The gate system is to be secured with an approved padlock entry system. Clearance should be made so that the Kiosk doors can be opened for operations and maintenance. Each kiosk should house the following which is to be supplied and installed as well (These DBs are for 3x 9 light circuits; EK8, EK12, EK15	No.	5		



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
C.2.10	& 2 x 12 light circuits; EK3, EK5): All components to comply with SABS -1 x 40A 3-phase isolating Circuit breaker (Large frame) -3 x 32A 1-phase overload Circuit breaker (MCB) -2 x 5A 1-phase overload control circuit breaker (MCB) -1 x 16A photocell IP65 -1 x 3-phase 45A contactor 220V coil Supply, deliver and Install 200A 3-phase Main Circuit breaker, Large frame, (fault level current rating according to contractor design and correct current tripping curve to be selected for installations) inside of new 400V LV Supply Side of the New 200kVA Mini Sub for the 95mm ² 4 core ECC cable to supply each lighting circuit, Inclusive of all associated works to install the Circuit Breaker	No.	4		
Total Carried Forward					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
C.2.11	Supply and Install 200A 3-phase Main Circuit breaker, large frame, (fault level current rating according to contractor design and correct current tripping curve to be selected for installations) inside of existing 400V LV Minisub for the 95mm ² 4 core ECC cable to supply lighting circuit, Inclusive of all associated works to install the Circuit Breaker	No.	1		
	<u>Cabling</u>				
C.2.12	16mm ² 4 core ECC cable	m	5200		
C.2.13	95mm ² 4 core ECC cable	m	5000		
	<u>Testing And Commissioning</u>				
C.2.14	Testing and Commissioning of complete installation in accordance with SANS 10142-1 including the issue of COC certificates	Sum	1		
	<u>General</u>				
	<u>Lighting System Protection</u>				
C.2.15	Design, Supply and install earthing, lightning, and fault protection for the entire installation	Sum	1		
Total Brought Forward					



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	<u>11KV MINIATURE SUBSTATION</u> Design, Supply, deliver and install 200kVA Type B 11.75/0.400 kV, 50 Hz, Dyn 11, 5% impedance, fault level rating of 30kA on MV side, fault level rating of 50kA on low voltage bus-bar, oil cooled ONAN, coastal type avocado green 'C12' mini-substation, complete with MV and LV switchgear compartments, protection relays, all current transformers, earthing material, Relay and Communication compartment, BTU, all other equipment, fixing materials and accessories etc. The Mini Sub at minimum should also include a 2R2B RMU with fault protection all designed by the contractor Design, supply and install of concrete plinth base for mounting the Minisub and should have a Five-sided cage structure (four vertical walls with security gates and a roof). The security mess panel cage system is to be constructed from mild steel and hot dip galvanized for marine environments as per SANS				



Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
C.2.17	121/BS EN ISO 1461. The gate system is to be secured with an approved padlock entry system. Clearance should be made so that the Kiosk doors can be opened for operations and maintenance. Clearances should be at minimum 1m on the sides of the Minisub and 2m on the front and back for the doors to open.	m	1500,00		
C.2.18	Verify sizing, Supply, deliver and install 185mm ² , 3 core, Cu, SWA, 6,35/11kV XLPE cable. Note: To be of the fire retardant, self-extinguishing type - (Red Stripe). Installation inclusive of all terminations required	Prov. Sum		R200 000	R200 000
	Provide a provisional amount of R200,000 for Alterations and additions required to connect the new Minisub to the Existing Culemborg Minisub RMU including cable tracing existing MV cable				
Total Carried Forward to Section Summary					

Item No.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward					
	<u>BILL NO.3</u>				
	<u>COMMISSIONING OF</u>				
	<u>ELECTRICAL WORKS</u>				
C.3.1	Illumination study (post installation)	Sum	1		
C.3.2	Testing and Commissioning of complete installation in accordance with SANS 10142-1 including the issue of COC certificates	Sum	1		
	<u>END OF SECTION</u>				
Total Carried for Section Summary					

BILL NO.	SECTION 3 SUMMARY	AMOUNT
C1	BILL NO.1: ELECTRICAL DESIGN, VERIFICATION AND MODELLING	
C2	BILL NO 2: LIGHTING ENTRANCE LIGHTING	
C3	BILL NO.3: COMMISSIONING OF ELECTRICAL WORKS	
TOTAL EXCLUDING VAT CARRIED TO FINAL SUMMARY		R

Section	Summary	Amount (R)
1	SECTION NO 1: PRELIMINARIES AND GENERAL	
2	SECTION NO. 2: CIVIL WORK	
3	SECTION NO.3: ELECTRICAL WORK	
4	SECTION NO.4: ESCALATION PROVISION IN TERMS OF 'CLAUSE X1' OF THE NEC	R 2,238,000.00
TOTAL EXCLUDING VAT CARRIED TO FORM OF OFFER AND ACCEPTANCE		