THE GOVERNMENT OF ZIMBABWE

MINISTRY OF LOCAL GOVERNMENT AND PUBLIC WORKS

CHIRUNDU BORDER POST UPGRADE AND MODERNISATION PROJECT

BILLS OF QUANTITIES

BILL NO. 1

PRELIMINARIES

NOTES TO TENDERERS

- A The following Preliminaries shall apply to all tenders whether based on Bills of Quantities or on a Specification, issued by the Ministry of Local Government and Public Works.
- B In the case of a tender based on Bills of Quantities the Tenderer should allow for all costs incurred in complying with these Preliminaries in the money column of this Bill and carry the total (if any) to the appropriate Summary in the Main Bills of Quantities, or as otherwise instructed in the Tender Documents.
- C In the case of a Tender based on a Specification, the Tenderer should include for all costs and expenses in complying with these Preliminaries in his lump sum Tender figure for the work.
- D In the case of a Contract based on a Specification those Preliminaries which refer to "Bills of Quantities", shall apply only where such term is synonymous with the term "Specification".
- E The Specification or Bills of Quantities are to be read in conjunction with, and all workmanship and material, unless otherwise described, shall comply with the current edition of the Ministry of Local Government and Public Works "General Specification of Materials and Workmanship" and with any amendments thereto. It is hereby made a condition that the submission of a tender based on Bills of Quantities or a Specification issued by the Ministry of Local Government and Public Works shall be accepted as proof that the Tenderer was in possession of a copy of this "General Specification" and amendments thereto at the time of tendering and that his tender price was based upon the requirements of such "General Specification" and amendments thereto.

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A	No representation, explanation or statement which in any way alters the tender or contract documents, made prior to the acceptance of a tender or during the progress of the contract shall bind the Secretary for Local Government and Public Works unless such explanation, statement or alteration be made and confirmed under the signature of the Secretary for Local Government and Public Works.	
В	Should there be any doubt or obscurity as to the meaning of any particulars in the Specification, Bills of Quantities or Tender Documents, the Tenderer must obtain an explanation as to the true intent and meaning in writing from the Secretary for Local Government and Public Works before submitting his tender. No claim for extras arising from any doubt or obscurity will be admitted after the delivery of his tender.	
С	The Tenderer is required to check the number of pages in the Specification (and in the case of Bills of Quantities all pages and references thereto in the "Collections" and Summary), and should any pages or references thereto be missing or duplicated or the figures or typing be indistinct, he is to apply at once to the Secretary for Local Government and Public Works and have the same rectified. Any errors arising through the Tenderer failing to do this will not be admitted after the submission of his tender.	
D	The Contractor shall, when requested by the Secretary for Local Government and Public Works, deposit his Bills of Quantities fully priced out in ink with the Secretary for Local Government and Public Works, and on the basis of this Bill of Quantities all extras and ommissions will be valued. The Secretary for Local Government and Public Works shall be at liberty to call for such adjustments of individual rates and rectify discrepancies as he considers necessary provided that the Tendered Amount is not altered.	
Е	CONDITIONS OF CONTRACT The Tenderer is referred to the "Conditions of Contract" and if he considers any of the clauses (or any amplification thereof given below) in such Conditions involves expense not inluded elsewhere, he should inlude for same.	
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A	Should the Tenderer not be in possession of the Ministry of Local Government and Public Works Standard Conditions of Contract, two copies will be issued to him on application being made.	
В	A Tenderer's failure to obtain a copy of the Conditions of Contract will not absolve him from complying with such Conditions.	
С	Clause No. 1: Scope of Contract.	
D	Clause No. 2: Drawings, Specifications and Bills of Quantities, etc.	
E	Clause No. 3: Local and Other Authorities' Notices and Fees.	
F	Clause No. 4: Setting Out of Works.	
G	Clause No.5: Materials and Workmanship to Conform to Description.	
Н	Clause No. 6: Foreman.	
J	Clause No. 7: Access for Architect to Works.	
К	Clause No. 8: Clerk of Works.	
L	Clause No. 9: Ascertainment of Prices for Variations.	
M	Clause No. 10: Bills of Quantities.	
	Should the Contractor not affix any figures in the money column against any particular items, he shall write hyphens thus: against such items.	
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All measurements, sizes and quantities throughout the Bills of Quantities are taken nett and should be held to mean the finished measurement and sizes, unless otherwise stated. The Quantities represent the actual nett quantities left in the building. The Contractor must allow in his prices for all cutting and waste, etc.

The Bills of Quantities are not to be used for the ordering of materials except at the Contractor's own risk. They have been prepared in order to enable the Contractor to furnish an estimate for the work and to provide unit rates for adjustment of variations.

No alterations, erasures or additions are to be made by the Tenderer in the text of the Bills of Quantities, and should any such alterations or additions be made the same will not be recognised and the text of the Bills of Quantities will be adhered to.

To assist the Tenderer in casting the various trades in these Bills of Quantities, sufficient space has been left at the end of each trade to enable him to cast each page separately, and carry the same to a column on the page in question under the heading of "Collection".

- A Clause No. 11: Unfixed Materials when taken into account to be Property of the Government.
- B Clause No. 12: Defects After Completion.
- C Clause No. 13: Assignment or Sub-letting.
- D Clause No. 14: Injury to Persons or Property.
 - (a) <u>Injury to Persons</u>: The Contractor is to allow for all costs and charges in taking out an Insurance Policy covering <u>THIRD PARTY RISKS</u>, in the joint names of the Government and the Contractor.
 - (b) Workmen's Compensation.
 - (c) Injury to Property.
 - (d) <u>Damage resulting from riot or civil</u> commotion.

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A	Clause No. 15: Insurance. The Contractor is to allow for all costs and charges in insuring the building against fire, for the full amount of the Contract plus 12½% to cover professional fees, from the commencement of work until the building is handed over. The policy is to be deposited with the Secretary for Local Government and Public Works and payments to the Contractor may be withheld until this Clause has been complied with.	
В	Clause No. 16: Occupation.	
С	Clause No. 17: Date of Possession and Completion.	
D	Clause No. 18: Damages for Non-completion.	
E	Clause No. 19: Delay and Extension of Time.	
F	Clause No. 20: Determination by Government.	
G	Clause No. 21: Determination by Contractor.	
Н	Clauses No. 22 and 23: Nominated Sub-contractors and Suppliers.	
	Where the Government becomes the nominated sub-contractor or the nominated supplier no cash discount will be allowed.	
	When during the course of the contract the Government omits Provisional Sums included in the Bills of Quantities, Specification or Tender Documents for nominated sub-contractors or nominated suppliers and negotiates a separate contract for such work to be paid direct by the Government, the main Contractor shall allow such facilities and he shall be entitled to payment of profit and attendance at the rates included by him in the Bills of Quanties against the respective items, adjusted pro rata on the amount paid direct by the Government, but shall not be entitled to claim cash discount or compensation for loss thereof.	
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In the event of Provisional Sums for nominated sub-contractors' or suppliers' work being omitted in whole or in part, and such work not being otherwise carried out during the period of this contract all cash discount, profit and attendance shall be similarly omitted in whole, or in part pro rata.

A Clause No. 24: Artists, Tradesmen and Works Outside the Contract.

The Government reserves the right at all times during the progress of the contract to let separate contracts for Specialists' work, or any other similar work not included in the Bills of Quantities, Specification or Tender Documents, and the main Contractor must grant access, and all facilities to such artists, tradesmen and others so engaged by the Government and such persons shall not be regarded as sub-contractors under this contract and no builders' discount or profit in respect thereof shall be payable to the Main Contractor, but in the event of attendance and making good being required payment will be made on a fair valuation of the services performed.

To assist the Contractor in arranging any attendance required, the Government may, when there is prior knowledge of specialist work, state in the Specification or Bills of Quantities the approximate value of such intended or existing separate contracts, but the inclusion of this information is for the Contractor's guidance only and shall not be deemed to be an amount included in the value of the Contract.

B Clause No. 25: Certificates and Payment
The Contractor when requiring a progress payment,
shall furnish the Secretary for Local Government and
Public Works with an approximate statement of the
work executed, detailed and priced under trades and
based on his original tender.

In all cases where the Contractor requires payment for unfixed materials on the site, the application for a progress payment must be accompanied by a complete list of all such materials, signed by the Contractor and countersigned by the Clerk of Works. All such material shall become the property of the Government and shall not be taken away (except for use in the building) without the written permission of the Secretary for Local Government and Publi Works.

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Not more than 80% of the value of any materials on site will be included in progress payments and such payments will only be made for materials which are properly protected from weather and theft, and which have not, in the opinion of the Quantity Surveyor, been brought prematurely upon the site.

All monies due to the nominated sub-contractors or suppliers and which are included in the contractor's certificate shall be paid to the sub-contractors or suppliers by the Contractor within 21 days after the date of the certificate in which the sum due is included. in the event of such payment not being made within the above stipulated time, the Contractor shall lose all right to claim any cash discount on the monies involved and the Secretary for Local Government and Public Works reserves the right to deduct ALL sums of maney that are due to the said sub-contractors or suppliers from the Contractor's next certificate and pay them direct to the sub-contractors or suppliers.

It is a condition of this contract that the Government shall not be bound to pay (except under an Order of the Court) any monies due or to become due hereunder to any persons save the Contractor who shall not have the right to assign his rights to payment to any third party without first obtaining the written consent of the Government to such assignment.

A Clause No. 26: Wages

В Clause No. 27: Non-Payment of Certificates Notwithstanding the provisions of Clause 25 of the "Conditions of Contract", the Government reserves the right to withhold retention money beyong the retention period until the Contractor has submitted to the Secretary for Local Government and Public Works all receipts in respect of monies due to nominated sub-contractors and nominated suppliers which have been included in payments made to the Contractor, and in the event of the Contractor failing to produce within 14 days of being asked in writing, conclusive evidence that such amounts have been fully paid, the Government shall have the right to make final payment direct to such sub-contractors or suppliers and to deduct the value thereof from the retention money, or other monies due under the Contract.

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Α Clause No.28: Surety Bond The Contractor is to allow for all costs and charges in taking out the surety bond. В Clause No. 29: Corrupt Gifts and Payments of Commission. С Clause No. 30: Photographs. D Clause No. 31: Articles of Value or Antiquity. Ε Clause No. 32: Patent Rights and Royalties. F Clause No. 33: Arbitration. PRELIMINARIES AND GENERAL The tenderer is referred to section B, Preliminaries and General, Pages B.1 to B.9 of the General Specification and if he considers that any of the clauses or any amplification thereof given below involves expense not elsewhere included, he should include for same hereunder. Clause B.1 Public Liability. G 1.1 Noise control. Н 1.2 Nuisance. The Contractor shall make adequate provision by spraying, erecting screens or other suitable methods, against nuisance or damage by dust to all works under this Contract, to persons or property in the vicinity, and he will be held solely responsible for any complaints, damage or claims in this connection. 1.3 J Adjoining owners. The Contractor shall not in the execution of the Works enter upon or otherwise make use of any lands adjoining the site of the Works as demarcated on the site plan, without the consent in writing of the Secretary for Local Government and Public Works or without the consent of the owners of such adjoining lands, having been previously obtained, but shall (except with such consent) confine his operations within the site of the Works. No trespassing beyond the limits as Carried to Collection

	above described will be allowed.	
А	1.4 Adjoining property.	
В	1.5 Police regulations.	
С	1.6 Statutory obligations.	
D	1.7 Notices, fees and charges.	
	Clause B.2 Prevention of Damage or Loss	
E	2.1 Locate existing services.	
F	2.2 Protect existing services.	
G	2.3 Damage to services.	
н	2.4 Fire precautions.	
J	2.5 Damage to roads.	
К	2.6 Repairs to roads.	
L	2.7 Clear roads Nothing shall be done by the Contractor or anyone employed by him that shall in anyway interfere with the free use by the public of any of the roads, gravel drives, paths, etc., within or approaching the site.	
М	2.8 Protect trees and shrubs.	
N	2.9 Replace trees and shrubs.	
0	Existing features. Make good or reinstate at the Contractor's expense all damage which may occur to gates, fences, buildings or other Government property existing upon the site.	
Р	2.11 Existing damage.	
	Clause B.3 Management/administration Procedures	
Q	3.1 Programme.	
R	3.2 Submit.	
S	3.3 Submission	
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Α	3.4 Receipt.
В	3.5 Monitoring. The Contractor shall provide on site a carbon copy record book which shall provide one original and two copies in which shall be recorded all site visits and daily record of work done.
С	3.6 Safety, health and welfare.
D	3.7 Use of site.
E	3.8 Site meetings.
F	3.9 Minutes.
G	3.10 Measurements.
н	3.11 Labour return.
J	3.12 Daywork vouchers.
К	3.13 Order materials.
	Clause B.4 Resources/Temporary Works and Services
L	4.1 Locations.
М	4.2 Temporary works.
N	4.3 Roads.
0	4.4 Buildings.
Р	4.5 SO's site office.
Q	4.6 Storage for cement and lime.
R	4.7 Sanitary accommodation for supervisory staff.
S	4.8 Sanitary accommodation for artisan staff.
Т	4.9 Hoardings, gantries and scaffolding.
U	4.10 Name boards.
V	4.11 Telephones.
W	4.12 Water. Allow for providing all water for the Works and for Carried to Collection
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sub-contractors, pay all fees and charges legally demandable and provide all necessary piping, taps and other fittings, storage tanks, etc.

If this Contract embodies work at a Government building or institution where water is already lain on, the Contractor may by agreeing in writing with the Secretary for Local Government and Public Works, use the water from this supply. (Any connection to or extensions of the existing supply pipes must be provided at the Contractor's expense.)

If permission be thus obtained and the Contractor uses the water from this source, he shall pay the Government (by deduction from the amount due under the contract) a sum equal to one quarter percent (¼%) of the final completed cost of the work executed under this contract as disclosed in the final statement, and shall allow in his price for water such amount as he considers necessary to cover this cost.

The use of water from a Government supply is granted subject to the condition that the water used by the Contractor shall be for building purposes only and should the Government be satisfied that the Contractor is unduly wasting water and/or using water for any subsidiary purpose such as providing for living accommodation of his workmen on the site, the Government reserves the right to deduct from monies due under the contract their assessment of all such additional water used.

- A 4.13 Lighting and power.
 - It is entirely the Contractor's responsibility to ascertain before tendering the availability of electricity and all costs and charges thereof, and no claim arising out of this clause will be considered after the submission of a tender.
- B 4.14 Plant.
- C 4.15 Sole use of plant.
- D 4.16 Removal of plant.
- E 4.17 Plant to comply.
- F 4.18 Protective clothing.
 - Clause B.5 Nominated Firms/Public Bodies
- G 5.1 Prime cost or provisional sums.

 Where Provisional and Prime Cost Sums are included

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for works to be performed, or materials supplied by nominated sub-contractors or suppliers, the Secretary for Local Government and Public Works will invite tenders (or may request the Contractor to obtain not less than three tenders) and direct the Contractor to accept a tender from a sub-contractor who will then become a nominated sub-contractor or supplier in terms of the Conditions of Contract: Clauses 22 and 23". The main Contractor will be entirely responsible for the proper and timely execution of the sub-contract and no contract will exist between the will nominated sub-contractor or supplier and the Government, and it is the responsibility of the main Contractor to ensure that the sub-contractor indemnifies the Contractor against the same obligations in respect of the sub-contract, as those for which the Contractor is liable in reslepect of the main contract.

The Contractor shall not order any materials for which Provisional or Prime Cost Sums are included without first receiving instructions in writing from the Secretary for Local Government and Public Works so to do. so to do.

The Contractor will be required to produce all receipted invoices, if demanded by the secretary for Local Government and Public Works for the adjustment of accounts.

If items are reserved for work of a nature usually carried out by the Contractor in the course of his business, the Government may give the Contractor an opportunity of tendering for the same without prejudice to the Government's right to reject the lowest or any tender.

A 5.2 Sub-contractors.

The names of all sub-contractors (other than nominated) whom the Contractor proposes to employ shall be submitted to the Secretary for Local Government and Public Works for approval before the signing of the Contract. Such approval shall not be unreasonably withheld.

B 5.3 General Attendance.

Wherever the words 'allow for attendance" occur, it shall be deemed to cover all the Contractor's costs involved in the following:-

(a) For giving the sub-contractor every facility to enable him to execute his work in a workmanlike manner and in proper order and sequence.

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(b) For allowing the sub-contractor free use of all
scaffolding and plant as may be reasonably
required by him, and for erecting, shifting and
removing as necessary such scaffolding and
plant free of charge to the sub-contractor.

- (c) For providing water or electricty required by the sub-contractor.
- (d) For receiving, unloading, checking, and removing to store all the sub-contractor's materials, articles and fittings on arrival at the site, and where necessary for providing proper storage accommodation for the prevention of pilferage, damage, etc., returning all empties and packing of same carriage paid, and for hoisting or lowering materials, articles, or fittings to the requisite levels and positions in the the building.
- (e) For agreeing with the sub-contractor proper and accurate working dimensions and other particulars and for obtaining from the sub-contractor full data and particulars as to the sub-contrctor's requirements, with particular regard to chases, recesses, mortices, notchings, holes, perforations, etc., and for obtaining full information from the sub-contractor to enable the Contractor to make proper arrangements and provisions during the general execution of the work for the receptopn of the sub-contractor's work. The cost of any alterations consequent upon the non fulfilment of the foregoing stipulations will be at the Contractor's sole expense.
- (f) For all items, conditions or requirements with regard to the sub-contractor's work mentioned or described in the general Conditions of Contract, Specification and Preliminaries not specifically stated in the foregoing.

Α	5.4	Supe	rvision.
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B 5.5 Programme.

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	Clau	ise B.6 Quality/Testing/Approvals.	
А	6.1	Commodities.	
В	6.2	Manufacturer's Recommendations.	
С	6.3	Standards.	
D	6.4	Single Sources.	
E	6.5	Samples of commodities.	
F	6.6	Samples of work.	
	Clau	use B.7 Accuracy/Setting Out.	
G	7.1	Set out the works.	
Н	7.2	Profiles.	
J	7.3	Permanency.	
K	7.4	Instruments.	
L	7.5	Check all dimensions.	
М	7.6	Dimensions.	
	Clau	ise B.8 Protection.	
N	8.1	Safeguard the site. Provide all necessary barriers, hoardings, footways, etc., and provide all necessary watching and lighting as required for the protection of the Works and materials and plant on the site, and for the protection of the public. The Contractor will be held responsible for all injury or accident that may happen through failure to provide adequate protection and lighting.	
0	8.2	Inclement weather.	
P	8.3	Stormwater and surface water. The Contractor must satisfy himself as to the quantities of subsoil and surface water to be dealt with and is to keep the building foundations and work generally clear of surface, subsoil and stormwater by baling, pumping or otherwise. Provide for dealing with springs, underground streams, etc., which may be opened up and provide all necessary pipes and machinery sufficient for the above purposes, and an ample supply	
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	of power, and apply the same as necessary to enable all operations to be promptly and efficiently performed, including night and day attendance and work as necessary.
А	8.4 Overloading.
В	8.5 Cleanliness.
С	8.6 Damage by sunlight.
D	8.7 Datum.
	Clause B.9 Prefabricated Elements.
E	9.1 Delivery.
F	9.2 Check fixings.
G	9.3 Authorise erection.
н	9.4 Notice.
	Clause B.10 Work at Completion.
J	10.1 Clean the works.
К	10.2 Cleaning.
L	10.3 Remove.
М	10.4 Painted surfaces.
N	10.5 Moving parts.
0	10.6 Security at completion.
Р	10.7 Making good defects.
Q	10.8 Maintenance instructions.
	Clause B.11 Miscellaneous.
R	11.1 Photographs.
S	11.2 Articles of value or antiquity.
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A VISIT SITE

The Contractor must visit the site of the Works before submitting his tender and carefully examine the conditions that exist, and he is to satisfy himself as to the nature of the materials to be excavated as well as all natural conditions, water and light services, transport facilities, etc. No allowance will be made in the event of conditions being different from what he expected.

B | FLUCTUATIONS IN COSTS

Where applying to nominated sub-contractors or suppliers

Where the following provisions for fluctuations in wages, cost of living allowances or prices of materials are applicable to a nominated sub-contractor or nominated supplier, the additional payments to them are to be regarded as a reimbursement of expense only, upon which the contractor shall not be entitled to claim any additional pro rata profit in terms of Clause 25 (e) of the conditions of contract.

2) Fluctuations in wages and cost of living allowances

The Contractor is to pay not less than the recognised Standard Rate of wages and Allowances to all employees.

If at any time between the date of delivery of the Contractor's tender and the date for the completion of the Works any statutory fluctuation (i.e. any specific increase or decrease stipulated by the Government Gazette) takes place in the Standard Rate of Wages, Cost of Living Allowances, or other statutory compulsory contribution in respect of the men employed on the Works covered by this Contract, whether on the site or in the workshops or yards of the Contractor or sub-contractors (but not in respect of merchants or suppliers), the Contractor is to submit WEEKLY to the Secretary for Local Government and Public Works receipted time sheets, together with aweekly return of the number of hours worked, signed by the Foreman and countersigned by the Clerk of Works, and the contract price shall be adjusted in accordance with the statutory fluctuation. Variations, if any, made under this clause shall be a nett increase or increase or decrease, and no allowance will be made for any profit whatsoever. No claims will be admitted in respect of labour employed after the expiration of the contract completion date or any ammendments thereto under Clause 19 of the Conditions of contract.

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3) Fluctuations in prices of materials

Should any statutory fluctuation (i.e. any secified increase or decrease in control prices of materials stipulated by notices published in the Government Gazette) take place after the date of delivery of the Contractor's tender, the Contractor is to submit invoices for such materials certified by the Clerk of Works and the contract price shall be adjusted in accordance with the statutory fluctuation. Such variations, if any, made under this clause shall be a nett increase or decrease, and no allowance will be made for any profit whatsoever.

The term "statutory fluctuation" is accepted to cover variation in custom duty or other Government tax, duty or surcharge only when detailed in the relevant Act of Parliament or statutory notices as payable direct on specified building materials and items incorporated in a building structure but will not be accepted to cover any indirect variation of costs or overheads, etc., of the Contractor, sub-contractors, merchants or suppliers, arising from fluctuations in such items as railage, shipping rates, insurance, postage, dock dues, clearance charges, transport, power and fuel costs, etc., whether arising directly or indirectly from Government action.

No claims will be admitted under this Clause for statutory fluctuations coming into effect after the expiration of the contract completion date or any amendments - theretp under Clause 19 of the Conditions of Contract.

If the Contractor wishes to be protected against fluctuations in cost of any basic materials he is to attach to the Form of Tender a list of such materials and prices in respect of which he wishes to be protected. Such prices to be those upon which he bases his tender.

In support of these prices, the Contractor is to furnish with his tender bona fide current merchants quotations (for quantities as required for the job).

The prices actually paid must be substantiated by receipted invoices, and all adjustment will be nett with no allowance for profit, provided that if the variations are positive then the Contractor may add not more than 5% to the nett amount.

At completion of the works the Contractor will be required to substantiate the quantities used and the prices actually paid for all items listed in order that Government may benefit for any decrease in price that may have occured.

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Orders for materials as listed shall have been placed within a reasonable time after the date of acceptance of the tender, otherwise no adjustment will be made. Such time to be mutually agreed when the tender is provisionally accepted.

All delivery notes for materials as listed must be certified by the Clerk of Works as having been delivered to the site, and shall be submitted to the Secretary for Local Government and Public Works failing which no adjustment will be made.

Where no materials have been listed the tender shall be treated as a firm tender.

Dumping duties are not acceptable as fluctuations, and it is a condition of the tender that any dumping duty levied at an time on items and goods incorporated in this contract shall be payable by the successful tenderer, and not recoverable from the government.

A AGREED WORKING HOURS

No work of any kind or description shall be done outside the agreed working hours of the building industry except such as shall be unavoidable or absolutely necessary for the saving of life or property, or the safety and protection of the works. Should the Contractor desire to execute any work outside the agreed working hours of the building industry, he shall first obtain the permission of the Secretary for Local Government and Public Works and any work executed outside such hours without the written permission having been first obtained will not be paid for, or if the Secretary for Local Government and Public Works desires the same taken out or pulled down and removed.

B <u>DISMISSAL OF INCOMPETENT WORKMEN</u>

The Contractor shall on the request of the Secretary for Local Government and Public Works immediately dismiss from the works any persons employed thereon who may, in the opinion of the Secretary for Local Government and Public Works be incompetent or miscounduct himself, or is likely to cause or who has caused strikes, disturbances or delays, and such persons shall not again be employed on the works without permission from the Secretary for Local Government and Public Works.

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BILL NO. 1: PRELIMINARIES CARRIED TO SUMMARY PAGE OF MAIN BILL		\$
SIGNATURE OF CONTRACTOR	DATE	

	BILL NO.2								
	FOUNDATIONS (PROVISIONAL)								
	(For Preambles see General Specification)								
	Note: Foundations have been measured to top of surface bed.								
	SITE CLEARANCE								
Α	Clear site of all rubbish, bushes, shrubs, undergrowth, hedges, small trees, stumps, roots,	m²	R/O						
В	Cut down and remove tree exceeding 500 and not exceeding 1000 mm girth measured 1000 mm above ground level including grubbing up roots and filling in holes.	no.	R/O						
)	Ditto tree exceeding 1000 mm and not exceeding 2000 mm ditto.	no.	R/O						
	EXCAVATION								
	Pumping and bailing								
)	Allow for the keeping excavations free of storm, surface and mud by pumping and bailing.	item	R/0						
Ξ	Excavate over site to remove vegetable soil average 150 mm deep and deposit on site not exceeding 100 metres.	m²	12						
=	Disposal of topsoil	m³	12						
	Carried to collection					-	-	-	-

	Excavate in pickable earth for:				
Α	Surface trenches not exceeding 2 metres deep.	m³	2	-	
В	Extra over excavation in pickable material for excavation in hard pickable material.	m³	1		
С	Ditto excavation in rock.	m³	1		
	Planking and strutting				
D	Allow for maintaining and supporting sides of all excavations and making good all slips.	m²	R/O		
	<u>Disposal</u>				
Е	Redig from spoil heap, return, fill and well compact selected excavated material around foundations to 95% L.C.E. density.	m³			
F	Redig from spoil heap and cart off site.	m³	6		
	<u>Formation</u>				
G	Scarify ground to a depth of 150 mm and compact to 95% L.C.E. density.	m²	179	-	-
Н	Selected and approved clean, hard, non-expansive granular filling supplied and brought onto site by the contractor well watered and mechanically compacted under ground base in layers of 150 mm thick to 90% HCE density SUNDRIES	m³	54		-
	TERMITES REINFORCED CONCRETE				
	Concrete (Grade 30MPa) in				
J	50mm sand binding	m²	2		
K	Base and stub column.	m³	6	-	-
L	Manholes Carried to collection	m³	5		-

A	Manhole covers(Watertight heavy duty cast iron cover and frame cast in concrete) with lockable steel battery cage. Rubber battery mounting	no	9		
	<u>Sundries</u>				
В	Strike off and cure top of concrete.	m²	2		-
	Reinforcement				
	High yield deformed steel reinforcement bars sizes.				
С	Y12	kg	109		
D	Y10	kg	50		
	Welded fabric reinforcement of approved manufacture including all cutting, tying, placing in position with necessary temporary supports and minimum 300 mm laps both ways (measured nett)				
Е	Ref. S193 (mass of 1.93 kg/square metre) in top reinforcement to manhole wall and slab	m²	30		-
	Carried to collection				-
	BILL NO.2: FOUNDATIONS (PROVISIONAL) CARRIED TO SUMMARY			PAGE	
				1 2 3 4	
	CARRIED TO SUMMARY				-

	BILL NO. 3			
	TOWER LIGHTS			
	(For Preambles see General Specification)			
	STRUCTURAL STEEL POLES			
<u>A</u>	Supply and fix 20m x 5mm thick polygonal galvanised steel pole minimum 200mm diameter with double reduction to the top of pole 100mm diameter. The pole bolted on a stub column on a baseplate with 4 no: 18mm diameter holes for M16 bolts grade 8.8. with holding brackets for solar panels and light fittings.	no	9	
	Light Fitting			
В	Type A – 2000 Watts complete light fitting with LED light or any other approved fitting equivalent or similar to be approved with daylight sensor	no	9	
С	Type B – 120 Watts light fittings, LED light fitting approved	no	6	
	CARRIED TO SUMMARY BILL NO. 4			-

	SOLAR SYSTEM			
Α	Solar Panels, maximum 300W (IPV) modules (provide spécifications) complete with cables connecting to inverter, trunking and surface junction boxes, Antitheft brackets,	no	18	
В	Glasses for solar panels' shielding and protection with Antitheft Clips Including mountings for shielding glasses	110	10	
		no	18	
С	10 KW Inverter, single phase (minimum size), with DC Breaker x 1 and AC breaker x!	no	9	
D	Purpose made distribution board to house inverter and mounted on top of manholes. To be weather proof with louvred door c/w gauze wire			
Ε	Solar Batteries, Lithium 320 AH	no	18	
F	Automatic Voltage Regulator, (AVR/AVS)	no	9	
G	Fluke 1664 (The Fluke DMS)	no.	1	
Н	Circutor – CIRe3 (Portable Analyzer for energy Audits)	no	1	
J	16 sq mm cables (for solar batteries)	lot	95	
K	10 sq mm x 4 core swa cables	m	50	
L	10 sq mm x earth wire	m	200	
M	Lightning Protection Material including, earth mates & air terminal	no	9	
N	Lugs (various sizes)	lot		
0	Fluke 1555 (10KV Insulation Resistance Tester)			
Ρ	Accessories	lot		
Q	Training of personnel for operation and routine maintenance	days	5	
	CARRIED TO SUMMARY			

Bill No.	SUMMARY Trade	PAGE	
	PRELIMINARIES AND GENERAL	20	
2	FOUNDATIONS (PROVISIONAL)	24	
3	TOWER LIGHTS	25	
4	SOLAR SYSTEM	26	
5	ADD 10% CONTIGENCE		
	CARRIED TO FORM OF TENDER		
1	CHARLED TO FORM OF TEMPER		-