



**TENDER NO. GF-KEMSA-CONST - 3/OIT  
6/2017-2018**

**TENDER FOR PROPOSED CONSTRUCTION OF  
KEMSA MODERN WAREHOUSE & OFFICE  
BLOCK**

***STRUCTURED CABLING, PABX & SECURITY  
INSTALLATIONS SPECIFICATIONS AND BILLS OF  
QUANTITIES***

**CLOSING DATE: 11<sup>TH</sup> DECEMBER, 2017**

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## SECTION I

### INVITATION FOR TENDER (IFT)

#### Open International Tender (OIT)

#### FUNDING: THE GOVERNMENT OF KENYA, THE GLOBAL FUND AND THE KENYA MEDICAL SUPPLIES AUTHORITY

**IFT NO.: GF-KEMSA-CONST - 3/OIT6/ 2017-2018**

#### PROPOSED CONSTRUCTION OF KEMSA MODERN WAREHOUSE AND OFFICE BLOCK AT EMBAKASI, NAIROBI

**Date: 17<sup>th</sup> November, 2017**

1. The Government of The Republic of Kenya (GoK) and The Global Fund (GF) through The Kenya Medical Supplies Authority (KEMSA) has set aside funds for construction of a Modern Warehouse and Office Block on LR No. 9042/176 at Embakasi, Nairobi Kenya.
2. KEMSA, on behalf of GOK and GF now invite sealed tender (s) for the underlisted categories of works.

Tender Reference	Tender Description	NCA Registratio n Category	Tender Security Amount
GF-KEMSA-CONST -1/OIT6/2017-2018	Main Works	NCA 1	Kshs.67,000,000.00
GF-KEMSA-CONST-2/OIT6/2017-2018	ELECTRICAL INSTALLATION WORKS	NCA 1	Kshs.6,800,000.00
GF-KEMSA-CONST-3/OIT6/2017-2018	STRUCTURED CABLING, PABX & SECURITY INSTALLATIONS	NCA 1	Kshs.4,400,000.00
GF-KEMSA-CONST-4/OIT6/2017-2018	LIFTS INSTALLATIONS	NCA 4 and above	Kshs.630,000.00
GF-KEMSA-CONST-5/OIT6/2017-2018	PLUMBING, DRAINAGE & FIRE FIGHTING,	NCA 2 and above	Kshs.3,400,000.00
GF-KEMSA-CONST-6/OIT6/2017-2018	MECHANICAL VENTILATION, SMOKE VENTS AND AIR CONDITIONING	NCA 4 and above	Kshs.1,100,000.00
GF-KEMSA-CONST-7/OIT6/2017-2018	COLD ROOMS AND FREEZER INSTALLATIONS	NCA 3 and above	Kshs.2,200,000.00

3. Bidding will be conducted through the **Open International Tender (OIT)** procedures specified in the Government of Kenya Public Procurement and Asset Disposals Act, 2015.

4. Interested eligible bidders may obtain further information from KEMSA offices and inspect the bidding documents at the Procurement office situated at:

Kenya Medical Supplies Authority  
13, Commercial Street, Industrial Area  
P.O B Box 47715-00100  
Telephone No.: +254 20 3922000/+254 719033000/+254 733606600  
Fax No.: +254203922400  
Email: [procure@kemsa.co.ke](mailto:procure@kemsa.co.ke)

On normal working days on Monday to Friday **09.00hrs and 16.00hrs except on Public Holidays or download at the IFMIS Supplier's Portal: <http://supplier.treasury.go.ke/>** KEMSA's website <https://www.kemsa.co.ke> Documents downloaded are free of charge and bidders are advised to register at the Procurement Office or via email at [procure@kemsa.co.ke](mailto:procure@kemsa.co.ke) (*Refer to registration form in the tender document*).

5. A complete set of bidding documents (Hard Copy) in English may be purchased by interested bidders on the submission of a **written application** on company letterhead to the address below and upon payment of a non-refundable/non-transferable **fee of USD.13 or Kenya Shillings; 1,000/=**. The method of payment is i) by Cash or by Bankers cheque payable to “Kenya Medical Supplies Authority” KEMSA and ii) By direct deposit to the following accounts;

***Kenya shillings Account***

***Account Name:*** Kenya Medical Supplies Authority  
***Bank Name & Branch:*** Co-operative Bank, Enterprise Road Branch  
***Account Number:*** 01141217405100

***United States Dollar Account***

***Account Name:*** Kenya Medical Supplies Authority  
***Bank Name & Branch:*** Co-operative Bank, Enterprise Road Branch  
***Account Number:*** 02120217405100  
***Swift Code:*** KCOOKENA

6. Complete serialized/paginated Bid Documents; **One original and a copy** in plain sealed envelopes clearly marked on top with the Tender Reference and Description and accompanied by a Bid Security of an amount as indicated in the respective Tender Documents in a freely convertible currency from Commercial Banks or Insurance Companies (Approved by The GOK Public Procurement Regulatory Authority) and should be addressed to:

The Chief Executive Officer  
Kenya Medical Supplies Authority  
13, Commercial Street, Industrial Area  
P.O B Box 47715-00100  
Nairobi, Kenya.

And must be deposited in Tender Box 2 Marked **Global Fund Tenders** at the reception on the Ground floor of KEMSA's Commercial Street Office in Nairobi on or before **11<sup>th</sup> December, 2017 at 10.00 a.m.** Bids will be opened immediately thereafter in the presence of Bidders' and or representatives who choose to attend.

7. Bulky tenders can be handed over to KEMSA **Procurement Director's** office for registration and safe keeping till the tender opening date.

8. Late bids shall **NOT** be accepted.
9. There will be a mandatory Site visit for all prospective bidders on **29th November, 2017 from 9.00am** at KEMSA warehouse in Embakasi, Nairobi. Thereafter there will be a pre-bid meeting for those who wish to attend.

Yours sincerely,

**CHIEF EXECUTIVE OFFICER,**  
**KENYA MEDICAL SUPPLIES AUTHORITY**

**REGISTRATION FORM FOR ONLINE TENDERERS/BIDDERS/SUPPLIERS**

**Tender No.: GF-KEMSA-CONST-3 /OIT 6/2017-2018 – Proposed Construction of KEMSA Modern Warehouse and Office block**

**NOTE:** Please provide your details below for purposes of communication in case you download this tender document from IFMIS or KEMSA website.

Name of the firm:.....

Postal Address:.....

Telephone Contacts:.....

Company email address:.....

Contact Person:.....

Once completed please submit this form to the email below;

[procure@kemsaco.ke](mailto:procure@kemsaco.ke)

**SPECIAL NOTES**

1. The Contractor is required to check the numbers of the pages of these Bills of Quantities against the contents stated on the Table of Contents and should he find missing, in duplicate or indistinct, he must inform the Procuring entity as described in this document at once and have the same rectified.
2. Should the Contractor be in doubt about the precise meaning of any item or figure for any reason whatsoever, he must inform the Procuring entity in order that the correct meaning may be decided before the date of submission of tenders.
3. No liability will be accepted nor any claim allowed in respect of errors in the Contractor's tender due to mistakes in these Bills of Quantities which should have been rectified in the manner described above.
4. The Tenderer shall not alter or otherwise qualify the text of this Tender Document. Any alteration or qualification made without any authority will be ignored and the text printed will be adhered to.
5. In case of Discrepancy between Tender Data Sheet and other sections of these Tender Documents, information in the Tender Data Sheet shall apply.
6. The bids shall be evaluated in accordance with evaluation criteria as detailed in the bid document.
7. Only Tenderers who score 70 points and above in the Technical Evaluation Stage shall qualify for further evaluation.
8. Special preference shall be given to the construction of the warehouse, flammable goods store, External Works and Civil works. Construction of the Office Block will commence not later than ten (10) months after the start of construction of the

**PRE-BID SITE VISIT CERTIFICATE**

**KENYA MEDICAL SUPPLIES AUTHORITY**

**TENDER REFERENCE NO. GF-KEMSA-CONST-3 /OIT 6/2017-  
2018 STRUCTURED CABLING, PABX & SECURITY  
INSTALLATIONS –**

We confirm that M/s.

..... was

duly represented by .....

during the **Site Visit/ Pre-bid Briefing** on **29<sup>th</sup> November, 2017** from **9.00A.M to 2.00 P.M** at KEMSA Warehouse Embakasi Nairobi.

Signed: .....

**CHIEF EXECUTIVE OFFICER  
KENYA MEDICAL SUPPLIES**

**AUTHORITY**



## SECTION II INSTRUCTIONS TO TENDERERS

### **General/Eligibility/Qualifications/Joint venture/Cost of tendering**

- 1.1 This Invitation for Tenders is open to all eligible tenderers for Works Contract as described in the tender documents. The successful tenderer will be expected to complete the Works by the Intended Completion Date specified in the tender documents.
- 1.2 All tenderers shall provide the Qualification Information, a statement that the tenderer (including all members of a joint venture and subcontractors) is not associated, or has not been associated in the past, directly or indirectly, with the Consultant or any other entity that has prepared the design, specifications, and other documents for the project or being proposed as Project Manager for the Contract. A firm that has been engaged by Kenya Medical Supplies Authority Ltd. to provide consulting services for the preparation or supervision of the Works, and any of its affiliates, shall not be eligible to tender.
- 1.3 All tenderers shall provide in the Form of Tender and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.
- 1.4 In the event that pre-qualification of potential tenderers has been undertaken, only tenders from pre-qualified tenderers will be considered for award of Contract. These qualified tenderers should submit with their tenders any information updating their original pre-qualification applications or, alternatively, confirm in their tenders that the originally submitted pre-qualification information remains essentially correct as of the date of tender submission.

Tender documents shall be accompanied by the following **Mandatory requirements** for preliminary evaluation:-

### **Mandatory Requirements**

- a) Certificate of Registration/Incorporation (*Applicable to all Bidders*)
- b) Valid & Current Registration with **National Construction Authority (NCA 1)** - (*Applicable to all Bidders*)
- c) Valid & Current Registration with **Energy Regulatory Commission (ERC Class A-1)** - (*Applicable to Electrical & Lift Bidders*)
- d) Valid & Current County Government Plumbers Licenses - (*Applicable to Plumbing & Fire Fighting Bidders*)
- e) Valid & Current Registration with The **Communication Authority** - (*Applicable to ICT & Security Bidders*)
- f) Manuals and Materials Certificates as described in the Tables attached and Bills of Quantities - (*Applicable to all Bidders*)

- g) Valid Tax Compliance Certificate - *(Applicable to all Bidders)*
- h) Valid Tender Security of 150 days - *(Applicable to all Bidders)*
- i) Duly Signed Anti-Corruption declaration form - *(Applicable to all Bidders)*
- j) Duly signed non-Debarment declaration form. - *(Applicable to all Bidders)*
- k) Pagination / Serialization of Tender Document- *(Applicable to all Bidders)*
- l) Duly signed form of Tender - *(Applicable to all Bidders)*
- m) Certificate of Site visit duly Signed and stamped by the procuring entity - *(Applicable to all Bidders)*

**A tenderer who fails to meet the mandatory requirements shall be disqualified from further evaluation.**

1.5 Where no pre-qualification of potential tenderers has been done, all tenderers shall include be required the following information and documents with their tenders, unless otherwise stated:

- (a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the tender to commit the tenderer
- (b) total monetary value of construction work performed for each of the last five years:
- (c) experience in works of a similar nature and size for each of the last five years, and details of work under way or contractually committed; and names and addresses of clients who may be contacted for further information on these contracts;
- (d) Major items of construction equipment proposed to carry out the Contract and an undertaking that they will be available for the Contract.
- (e) Qualifications and experience of key site management and technical personnel proposed for the Contract and an undertaking that they shall be available for the Contract.
- (f) reports on the financial standing of the tenderer, such as profit and loss statements and auditor's reports for the past three years;
- (g) evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources);
- (h) authority to seek references from the tenderer's bankers;
- (i) information regarding any litigation, current or during the last five years, in which the tenderer is involved, the parties concerned and disputed amount; and

- (j) Proposals for subcontracting components of the Works amounting to more than 10 percent of the Contract Price.
- 1.6 Tenders submitted by a joint venture of two or more firms as partners shall comply with the following requirements, unless otherwise stated:
- (a) the tender shall include all the information listed in clause 1.5 above for each joint venture partner;
  - (b) the tender shall be signed so as to be legally binding on all partners;
  - (c) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;
  - (d) one of the partners will be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of all partners of the joint venture; and
  - (e) The execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.
- 1.7 To qualify for award of the Contract, tenderers shall meet the following minimum qualifying criteria;
- (a) annual volume of construction work of at least 2.5 times the estimated annual cashflow for the Contract;
  - (b) experience as main contractor in the construction of at least five works of a nature and complexity equivalent to the Works over the last 10 years (to comply with this requirement, works cited should be at least 70 percent complete);
  - (c) proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment listed as required for the Works;
  - (d) a Contract Manager with at least ten years' experience in works of an equivalent nature and volume, including no less than three years as Manager; and
  - (e) liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of no less than 2 months of the estimated payment flow under this Contract.

- 1.8 The figures for each of the partners of a joint venture shall be added together to determine the tenderer's compliance with the minimum qualifying criteria of clause 1.7 (a) and (e); however, for a joint venture to qualify, each of its partners must meet at least 25 percent of minimum criteria 1.7 (a), (b) and (e) for an individual tenderer, and the partner in charge at least 40 percent of those minimum criteria. Failure to comply with this requirement will result in rejection of the joint venture's tender. Subcontractors' experience and resources will not be taken into account in determining the tenderer's compliance with the qualifying criteria, unless otherwise stated.
- 1.9 Each tenderer shall submit only one tender, either individually or as a partner in a joint venture. A tenderer who submits or participates in more than one tender (other than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the tenderer's participation to be disqualified.
- 1.10 The tenderer shall bear all costs associated with the preparation and submission of his tender, and Kenya Medical Supplies Authority will in no case be responsible or liable for those costs.
- 1.11 The tenderer, at the tenderer's own responsibility and risk, is encouraged to visit and examine the Site of the Works and its surroundings, and obtain all information that may be necessary for preparing the tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the tenderer's own expense.
- 1.12 The Kenya Medical Supplies Authority employees, committee members, board members and their relative (spouse and children) are not eligible to participate in the tender.
- 1.13 The price to be charged for the tender document shall be Kshs.1,000/.
- 1.14 The Kenya Medical Supplies Authority shall allow the tenderer to review the tender document free of charge before purchase.

## **2**

### **Tender Documents**

- 2.1 The complete set of tender documents comprises the documents listed below and any addenda issued in accordance with Clause 2.4.
  - (a) These Instructions to Tenderers
  - (b) Form of Tender and Qualification Information
  - (c) Conditions of Contract
  - (d) Appendix to Conditions of Contract
  - (e) Specifications
  - (f) Drawings
  - (g) Bills of Quantities
  - (h) Forms of Securities
- 2.2 The tenderer shall examine all Instructions, Forms to be filled and Specifications in the tender documents. Failure to furnish all information required by the tender documents, or submission of a tender not substantially responsive to the tendering documents in every respect will be at the tenderer's risk and may result in rejection of his tender.

- 2.3 A prospective tenderer making an inquiry relating to the tender documents may notify the Kenya Medical Supplies Authority in writing or by cable, telex or facsimile at the address indicated in the letter of invitation to tender. Kenya Medical Supplies Authority will only respond to requests for clarification received earlier than seven days prior to the deadline for submission of tenders. Copies of the Kenya Medical Supplies Authority's response will be forwarded to all persons issued with tendering documents, including a description of the inquiry, but without identifying its source.
- 2.4 Before the deadline for submission of tenders, Kenya Medical Supplies Authority may modify the tendering documents by issuing addenda. Any addendum thus issued shall be part of the tendering documents and shall be communicated in writing or by cable, telex or facsimile to all tenderers. Prospective tenderers shall acknowledge receipt of each addendum in writing to the Employer.
- 2.5 To give prospective tenderers reasonable time in which to consider an addendum in preparing their tenders, Kenya Medical Supplies Authority shall extend, as necessary, the deadline for submission of tenders, in accordance with Clause 4.2 here below.

### **3 Preparation of Tenders**

- 3.1 All documents relating to the tender and any correspondence shall be in English language.
- 3.2 The tender submitted by the tenderer shall comprise the following:
  - (a) These Instructions to Tenderers, Form of Tender, Conditions of Contract, Appendix to Conditions of Contract and Specifications;
  - (b) Tender Security;
  - (c) Priced Bill of Quantities ;
  - (d) Qualification Information Form and Documents;
  - (e) Alternative offers where invited; and
  - (f) Any other materials required to be completed and submitted by the tenderers.
- 3.3 The tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items for which no rate or price is entered by the tenderer will not be paid for when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause relevant to the Contract, as of 30 days prior to the deadline for submission of tenders, shall be included in the tender price submitted by the tenderer.

- 3.4 The rates and prices quoted by the tenderer shall only be subject to adjustment during the performance of the Contract if provided for in the Appendix to Conditions of Contract and provisions made in the Conditions of Contract.
- 3.5 The unit rates and prices shall be in Kenya Shillings.
- 3.6 Tenders shall remain valid for a period of one hundred and Twenty (120) days from the date of submission. However in exceptional circumstances, the Kenya Medical Supplies Authority may request that the tenderers extend the period of validity for a specified additional period. The request and the tenderers' responses shall be made in writing. A tenderer may refuse the request without forfeiting the Tender Security. A tenderer agreeing to the request will not be required or permitted to otherwise modify the tender, but will be required to extend the validity of Tender Security for the period of the extension, and in compliance with Clause 3.7 - 3.11 in all respects.
- 3.7 The tenderer shall furnish, as part of the tender, a Tender Security in the amount and form specified in the appendix to invitation to tenderers. This shall be in the amount not exceeding 2 percent of the tender price.
- 3.8 The format of the Tender Security should be in accordance with the form of Tender Security included in Section IV - Standard forms or any other form acceptable to Kenya Medical Supplies Authority. Tender Security shall be valid for 30 days beyond the validity of the tender.
- 3.9 Any tender not accompanied by an acceptable Tender Security shall be rejected. The Tender Security of a joint venture must define as "Tenderer" all joint venture partners and list them in the following manner: a joint venture consisting of".....", ".....", and ".....".
- 3.10 The Tender Securities of unsuccessful tenderers will be returned within 28 days of the end of the tender validity period specified in Clause 3.6.
- 3.11 The Tender Security of the successful tenderer will be discharged when the tenderer has signed the Contract Agreement and furnished the required Performance Security.
- 3.12 The Tender Security may be forfeited
  - (a) if the tenderer withdraws the tender after tender opening during the period of tender validity;
  - (b) if the tenderer does not accept the correction of the tender price, pursuant to Clause 5.7;
  - (c) in the case of a successful tenderer, if the tenderer fails within the specified time limit to
    - (i) sign the Agreement, or
    - (ii) furnish the required Performance Security.
- 3.13 Tenderers shall submit offers that comply with the requirements of the tendering documents, including the basic technical design as indicated in the Drawings and Specifications. Alternatives will not be considered, unless specifically allowed in the invitation to tender. If so allowed, tenderers wishing to offer technical alternatives to the requirements of the tendering

documents must also submit a tender that complies with the requirements of the tendering documents, including the basic technical design as indicated in the Drawings and Specifications. In addition to submitting the basic tender, the tenderer shall provide all information necessary for a complete evaluation of the alternative, including design calculations, technical specifications, breakdown of prices, proposed construction methods and other relevant details. Only the technical alternatives, if any, of the lowest evaluated tender conforming to the basic technical requirements shall be considered.

- 3.14 The tenderer shall prepare one original of the documents comprising the tender documents as described in Clause 3.2 of these Instructions to Tenderers, bound with the volume containing the Form of Tender, and clearly marked “**ORIGINAL**”. In addition, the tenderer shall submit copies of the tender, in the number specified in the invitation to tender, and clearly marked as “**COPIES**”. In the event of discrepancy between them, the original shall prevail.
- 3.15 The original and all copies of the tender shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the tenderer, pursuant to Clause 1.5 (a) or 1.6 (b), as the case may be. All pages of the tender where alterations or additions have been made shall be initialed by the person or persons signing the tender.
- 3.16 Clarification of tenders shall be requested by the tenderer to be received by the procuring entity not later than 7 days prior to the deadline for submission of tenders.
- 3.17 The procuring entity shall reply to any clarifications sought by the tenderer within 3 days of receiving the request to enable the tenderer to make timely submission of its tender.
- 3.18 The tender security shall be in the amount of 0.5 – 2 per cent of the tender price.

#### **4**

##### **Submission of Tenders**

- 4.1 The tenderer shall seal the original and all copy of the tender in two inner envelopes and one outer envelope, duly marking the inner envelopes as “**ORIGINAL**” and “**COPY**” as appropriate. The inner and outer envelopes shall:
  - (a) be addressed to the Kenya Medical Supplies Authority at the address provided in the invitation to tender;
  - (b) bear the name and identification number of the Contract as defined in the invitation to tender; and
  - (c) provide a warning not to open before the specified time and date for tender opening.
- 4.2 Tenders shall be delivered to Kenya Medical Supplies Authority at the address specified above not later than the time and date specified in the invitation to tender. However, Kenya Medical Supplies Authority may extend the deadline for submission of tenders by issuing an amendment in accordance with Sub-Clause 2.5 in which case all rights and obligations of the Employer and the tenderers previously subject to the original deadline will then be subject to the new deadline.
- 4.3 Any tender received after the deadline prescribed in clause 4.2 will be

returned to the tenderer un-opened.

- 4.4 Tenderers may modify or withdraw their tenders by giving notice in writing before the deadline prescribed in clause 4.2. Each tenderer's modification or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with clause 3.13 and 4.1, with the outer and inner envelopes additionally marked "**MODIFICATION**" and "**WITHDRAWAL**", as appropriate. No tender may be modified after the deadline for submission of tenders.
- 4.5 Withdrawal of a tender between the deadline for submission of tenders and the expiration of the period of tender validity specified in the invitation to tender or as extended pursuant to Clause 3.6 may result in the forfeiture of the Tender Security pursuant to Clause 3.11.
- 4.6 Tenderers may only offer discounts to, or otherwise modify the prices of their tenders by submitting tender modifications in accordance with Clause 4.4 or be included in the original tender submission.

## **5 Tender Opening and Evaluation**

- 5.1 The tenders will be opened by Kenya Medical Supplies Authority, including modifications made pursuant to Clause 4.4, in the presence of the tenderers' representatives who choose to attend at the time and in the place specified in the invitation to tender. Envelopes marked "**WITHDRAWAL**" shall be opened and read out first. Tenderers' and Employer's representatives who are present during the opening shall sign a register evidencing their attendance.
- 5.2 The tenderers' names, the tender prices, the total amount of each tender and of any alternative tender (if alternatives have been requested or permitted), any discounts, tender modifications and withdrawals, the presence or absence of Tender Security, and such other details as may be considered appropriate, will be announced by the Employer at the opening. Minutes of the tender opening, including the information disclosed to those present will be prepared by Kenya Medical Supplies Authority.
- 5.3 Information relating to the examination, clarification, evaluation, and comparison of tenders and recommendations for the award of Contract shall not be disclosed to tenderers or any other persons not officially concerned with such process until the award to the successful tenderer has been announced. Any effort by a tenderer to influence the Kenya Medical Supplies Authority's officials, processing of tenders or award decisions may result in the rejection of his tender.
- 5.4 To assist in the examination, evaluation, and comparison of tenders, the Kenya Medical Supplies Authority at his discretion, may ask any tenderer for clarification of the tender, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, telex or facsimile but no change in the price or substance of the tender shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered in the evaluation of the tenders in accordance with Clause 5.7.
- 5.5 Prior to the detailed evaluation of tenders, the Kenya Medical Supplies Authority will determine whether each tender (a) meets the eligibility criteria defined in Clause 1.7;(b) has been properly signed; (c) is accompanied by the



required securities; and (d) is substantially responsive to the requirements of the tendering documents. A substantially responsive tender is one which conforms to all the terms, conditions and specifications of the tendering documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the works; (b) which limits in any substantial way, inconsistent with the tendering documents, the Kenya Medical Supplies Authority's rights or the tenderer's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other tenderers presenting substantially responsive tenders.

5.6 If a tender is not substantially responsive, it will be rejected, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

5.7 Tenders determined to be substantially responsive will be checked for any arithmetic errors. Errors will be corrected as follows:

- (a) where there is a discrepancy between the amount in figures and the amount in words, the amount in words will prevail; and
- (b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will prevail, unless in the opinion of the Employer, there is an obvious typographical error, in which case the adjustment will be made to the entry containing that error.
- (c) In the event of a discrepancy between the tender amount as stated in the Form of Tender and the corrected tender figure in the main summary of the Bill of Quantities, the amount as stated in the Form of Tender shall prevail.
- (d) The Error Correction Factor shall be computed by expressing the difference between the tender amount and the corrected tender sum as a percentage of the corrected Builder's Work (i.e. Corrected tender sum less P.C. and Provisional Sums)
- (e) The Error Correction Factor shall be applied to all Builder's Work (as a rebate or addition as the case may be) for the purposes of valuations for Interim Certificates and valuation of variations.
- (f) the amount stated in the tender will be adjusted in accordance with the above procedure for the correction of errors and, with concurrence of the tenderer, shall be considered as binding upon the tenderer. If the tenderer does not accept the corrected amount, the tender may be rejected and the Tender Security may be forfeited in accordance with clause 3.11.

5.8 Kenya Medical Supplies Authority will evaluate and compare only the tenders determined to be substantially responsive in accordance with Clause 5.5.

5.9 In evaluating the tenders, Kenya Medical Supplies Authority will determine for each tender the evaluated tender price by adjusting the tender price as follows:

- (a) making any correction for errors pursuant to clause 5.7;
  - (b) excluding provisional sums and the provision, if any, for contingencies in the Bill of Quantities, but including Dayworks where priced competitively.
  
  - (c) making an appropriate adjustment for any other acceptable variations, deviations, or alternative offers submitted in accordance with clause 3.12; and
  - (d) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with clause 4.6
- 5.10 Kenya Medical Supplies Authority reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the tender documents or otherwise result in unsolicited benefits for the Employer will not be taken into account in tender evaluation.
- 5.11 The tenderer shall not influence the Kenya Medical Supplies Authority on any matter relating to his tender from the time of the tender opening to the time the Contract is awarded. Any effort by the Tenderer to influence the Employer or his employees in his decision on tender evaluation, tender comparison or Contract award may result in the rejection of the tender.
- 5.12 Firms incorporated in Kenya where indigenous Kenyans own 51% or more of the share capital shall be allowed a 10% preferential bias provided that they do not sub-contract work valued at more than 50% of the Contract Price excluding Provisional Sums to non-indigenous sub-contractor.

## **6 Award of Contract**

- 6.1 Subject to Clause 6.2, the award of the Contract will be made to the tenderer whose tender has been determined to be substantially responsive to the tendering documents and who has offered the lowest evaluated tender price, provided that such tenderer has been determined to be (a) eligible in accordance with the provision of Clauses 1.2, and (b) qualified in accordance with the provisions of clause 1.7 and 1.8.
- 6.2 Notwithstanding clause 6.1 above, Kenya Medical Supplies Authority reserves the right to accept or reject any tender, and to cancel the tendering process and reject all tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected tenderer or tenderers or any obligation to inform the affected tenderer or tenderers of the grounds for the action.
- 6.3 The tenderer whose tender has been accepted will be notified of the award prior to expiration of the tender validity period in writing or by cable, telex or facsimile. This notification (hereinafter and in all Contract documents called

the “Letter of Acceptance”) will state the sum (hereinafter and in all Contract documents called the “Contract Price”) that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract. At the same time the other tenderers shall be informed that their tenders have not been successful.

The contract shall be formed on the parties signing the contract.

- 6.4 The Agreement will incorporate all agreements between Kenya Medical Supplies Authority and the successful tenderer. Within 14 days of receipt the successful tenderer will sign the Agreement and return it to the Employer.
- 6.5 Within **21 days after receipt** of the Letter of Acceptance, the successful tenderer shall deliver to the Kenya Medical Supplies Authority a Performance Security in the amount stipulated in the Appendix to Conditions of Contract and in the form stipulated in the Tender documents. The Performance Security shall be in the amount and specified form.
- 6.6 Failure of the successful tenderer to comply with the requirements of clause 6.5 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Tender Security.
- 6.7 Upon the furnishing by the successful tenderer of the Performance Security, Kenya Medical Supplies Authority Ltd. will promptly notify the other tenderers that their tenders have been unsuccessful.
- 6.8 Preference where allowed in the evaluation of tenders shall not be allowed for contracts not exceeding one year (12 months).
- 6.9 The tender evaluation committee shall evaluate the tender within 30 days of the validity period from the date of opening the tender.
- 6.10 The parties to the contract shall have it signed within 30 days from the date of notification of contract award unless there is an administrative review request.
- 6.11 Contract price variations shall not be allowed for contracts not exceeding one year (12 months).
- 6.12 Where contract price variation is allowed, the variation shall not exceed 20% of the original contract price.
- 6.13 Price variation request shall be processed by the procuring entity within 30 days of receiving the request.
- 6.14 Kenya Medical Supplies Authority may at any time terminate procurement proceedings before contract award and shall not be liable to any person for the termination.
- 6.15 Kenya Medical Supplies Authority shall give prompt notice of the termination to the tenderers and on request give its reasons for termination within 14 days of receiving the request from any tenderer.

- 6.17 A tenderer who gives false information in the tender document about its qualification or who refuses to enter into a contract after notification of contract award shall be considered for debarment from participating in future public procurement.

**7**

**Corrupt and Fraudulent practices**

- 7.1 Kenya Medical Supplies Authority requires that tenderers observe the highest standards of ethics during procurement process and execution of contracts. A tenderer shall sign a declaration that he has not and will not be involved in corrupt and fraudulent practices.

# **APPENDIX TO INSTRUCTIONS TO TENDERERS**

## **APPENDIX TO INSTRUCTIONS TO TENDERERS**

The following information for procurement of services shall complement or amend the provisions of the instructions to tenderers. Wherever there is a conflict between the provisions of the instructions to tenderers and the provisions of the Appendix, the provisions of the Appendix herein shall prevail over those of the instructions to tenderers.

## **SECTION III**

# **TENDER EVALUATION CRITERIA**



**(a) Tender Evaluation Criteria**

The following criteria will be used in the evaluation of all bids. The submission of the required documents will be used in the determination of the Completeness and Suitability of the Bid. Bids that do not contain all the information required will be declared non responsive and shall not be evaluated further.

**1.1 Stage I – Mandatory Requirements**

This stage of evaluation shall involve examination of the mandatory requirements as set out in the Tender Advertisement Notice or Letter of Invitation to Tender and any other conditions stated in the bid document.

- a) Certificate of Registration/Incorporation *(Applicable to all Bidders)*
- b) Valid Registration with **National Construction Authority (NCA 1)** - *(Applicable to all Bidders)*
- c) Valid & Current Registration with **Energy Regulatory Commission (ERC Class A-1)** - *(Applicable to Electrical & Lift Bidders)*
- d) Valid & Current County Government Plumbers Licenses - *(Applicable to Plumbing & Fire Fighting Bidders)*
- e) Valid & Current Registration with The **Communication Authority (CA)** - *(Applicable to ICT & Security Bidders)*
- f) Manuals and Materials Certificates as described in the Tables attached and Bills of Quantities - *(Applicable to all Bidders)*
- g) Valid Tax Compliance Certificate - *(Applicable to all Bidders)*
- h) Valid Tender Security of 150 days - *(Applicable to all Bidders)*
- i) Duly Signed Anti-Corruption declaration form - *(Applicable to all Bidders)*
- j) Duly signed non-Debarment declaration form - *(Applicable to all Bidders)*
- k) Pagination / Serialization of Tender Document - *(Applicable to all Bidders)*
- l) Duly signed form of Tender - *(Applicable to all Bidders)*
- m) Certificate of Site visit duly Signed and stamped by the procuring entity - *(Applicable to all Bidders)*

**A tenderer who fails to meet the mandatory requirements shall be disqualified from further evaluation.**

## **STAGE 2: TECHNICAL EVALUATION**

The tender document shall be examined based on clause 2.2 of the Instruction to Tenderers which states as follows:

*In accordance with clause 2.2 of Instruction to Tenderers, the tenderers will be required to provide evidence for eligibility of the award of the tender by satisfying the employer of their eligibility under sub clause 2.1 of Instructions to Tenderers and their capability and adequacy of resources to effectively carry out the subject contract.*

*In order to comply with provisions of clause 2.2 of Instruction to tenderers, the tenderers shall be required;*

- a) *To fill the Standard Forms provided in the bid document for the purposes of providing the required information. The tenderers may also attach the required information if they so desire;*
- b) *To supply equipment's/items which comply with the technical specifications set out in the bid document. In this regard, the bidders shall be required to submit relevant technical brochures/catalogues with the tender document, highlighting the Catalogue Numbers of the proposed items. Such brochures/catalogues should indicate comprehensive relevant data of the proposed equipment/items which should include but not limited to the following:*
  - (i) Standards of manufacture;
  - (ii) Performance ratings/characteristics;
  - (iii) Material of manufacture;
  - (iv) Electrical power ratings; and
  - (v) Any other necessary requirements (Specify).

The bid will then be analyzed, using the information in the technical brochures, to determine compliance with General and Particular technical specifications for the works as indicated in the tender document. The tenderer shall also fill in the Technical Schedule as specified in the tender document for Equipment and Items indicating the Country of Origin, Model/Make/Manufacturer and catalogue numbers of the Items/Equipment's they propose to supply.

## 1.2 Stage II -Technical Evaluation

The award of points considered in this section shall be as shown below:

<u>PARAMETER</u>	<u>MAXIMUM POINTS</u>
(i) Presentation of Bid document -----	2
(ii) Compliance with Technical Specifications-----	40
(iii) Key personnel -----	20
(iv) Contract Completed in the last Ten (10) years -----	20
(v) Schedules of on-going projects -----	3
(vi) Schedules of contractors equipment -----	38
(vii) Audited Financial Report for the last 3 years -----	15
(viii) Evidence of Financial Resources -----	15
(ix) Name, Address and Telephone of Banks (Contractor to provide)-----	2
(x) Compliance to warehouse completion time-----	4
(xi) Litigation History -----	1
<b>TOTAL</b>	<b>130</b>

A bidder scoring less than 70% shall not be considered Technically responsive and therefore shall not be considered for financial evaluation.

The detailed scoring plan shall be as shown in table 1.

The detailed scoring plan shall be as shown in table 1 below: -

**stage II : Technical Evaluation**

Item	Description	Raw Points Scored	Max. Point
1	<p><b>Compliance with Technical Specifications</b></p> <ul style="list-style-type: none"> <li>• Full Compliant -----40</li> <li>• Non-compliant----- 0</li> </ul> <p><i>(Note: Tender Evaluation Committee to carry out analysis showing how decision on this requirement has been arrived at. Attach analysis on this as an Appendix )</i></p>	<b>40</b>	<b>40</b>
2	Presentation and response (This includes binding the documents, neat presentation, separation and arrangement of requested information and general response to all requirements)		<b>2</b>
3	<p><b>Key Personnel (Attach evidence)</b></p> <p><b>Director of the firm</b></p> <ul style="list-style-type: none"> <li>• Holder of degree in relevant field -----4</li> <li>• Holder of diploma in relevant field -----3</li> <li>• Holder of certificate in relevant Engineering field---- 2</li> <li>• Holder of trade test certificate in relevant Engineering field (At least three personnel)----- --1</li> </ul> <p><b>2No. degree/diploma holders of key personnel in relevant field</b></p> <ul style="list-style-type: none"> <li>• With over 10 years relevant experience ----- 8</li> <li>• With over 5 years relevant experience----- 4</li> <li>• With under 5 years relevant experience ----- 2</li> </ul> <p><b>4 No certificate holder of key personnel in relevant field</b></p> <ul style="list-style-type: none"> <li>• With over 10 years relevant experience----- 4</li> <li>• With over 5 years relevant experience ----- 3</li> <li>• With under 5 years relevant experience -----1</li> </ul> <p><b>8 No artisan (trade test certificate in relevant field)</b></p> <ul style="list-style-type: none"> <li>• Artisan with over 10 years relevant experience -- 4</li> <li>• Artisan with under 10 years relevant experience --2</li> </ul>		<b>20</b>
iii	<p><b>Contract completed in the last Ten (10) years <u>Provide Evidence</u></b>  Warehouses - 2 projects of similar nature/ complexity and magnitude  <b>Warehouses- Maximum - 12 marks</b>  (a) Above Kshs.20. Million (6 marks for each project)  (b) Kshs15 Million – 19.9Million( 4 marks for each project)  (c) Below Kshs15 Million – (2 mark for each project)</p> <p><b>Office Block/ office facilities – 8 marks</b>  (d) Above Kshs100 Million (4 marks for each project)  (e) Kshs75 Million - 99illion – (2 mark for each project)  (f) Below Kshs74.9 Million (1 mark for each project)</p>		<b>20</b>

iv	<b>On-going projects and their values <u>Provide Evidence</u></b>			<b>3</b>
v	<b>Schedule of contractors equipment and transport (proof or evidence of ownership/Lease)</b> <b>a) Relevant Transport</b> <ul style="list-style-type: none"> <li>• Vans 2No. (4Mks)</li> <li>• Pickups 2No. (2mks)</li> </ul> <b>b) Equipment's/tools</b> <ul style="list-style-type: none"> <li>• Copper Cable tester 2No. (2mks)</li> <li>• Fiber splicing tool 2No. (2Mks)</li> <li>• Fiber Cable tester 1No. (2Mks)</li> <li>• Patching 3No. (2Mks)</li> <li>• Cable roller 4No. (4mks)</li> <li>• Drilling tools 2No. 2Mks)</li> <li>• PPE Equipment's (2mks)</li> </ul> <b>c) Vertical transport</b> <ul style="list-style-type: none"> <li>• Hoist 0.5T 1No. (6mks)</li> </ul>			<b>28</b>
vi	<b>Financial report</b>			<b>15</b>
	<b>a) Audited financial report (last three (3) years)</b> <ul style="list-style-type: none"> <li>• Provide Audited Accounts for 2016, 2015, 2014 (3 Mks)</li> <li>• Average Annual Turn-over equal to or greater than the annual Expected Turnover of the project ----- (12mks)</li> <li>• Average Annual Turn-over above 50% but below 100% of the cost of the project ----- (2Mks)</li> <li>• Average Annual Turn-over below 50% of the cost of the project ----- 1Mks</li> </ul>			
	<b>b) Evidence of Financial Resources (cash in hand, lines of credit, over draft facility, etc )</b> <ul style="list-style-type: none"> <li>• Has financial resources to finance the projected <b>monthly cash flow*</b> for three months -----15</li> <li>• Has financial resources equal to the projected <b>monthly cash flow*</b>-----10</li> <li>• Has financial resources less the projected <b>monthly cash flow*</b>-----5</li> <li>• Has not indicated sources of financial resources ----- 0</li> </ul>			<b>15</b>
	<b>Name, Address and Telephone of Banks</b>			<b>2</b>

vii	<b>Litigation History</b> <ul style="list-style-type: none"> <li>• Duly Filled ----- 1</li> <li>• Not filled ----- 0</li> </ul>		1
xi	<b>Prepared for Compliance to warehouse Main contractor ( to be appointed) completion time</b>	4 Mks	4
	<b>TOTAL</b>		140

*\*Monthly Cash Flow = Tender Sum/Contract Period*

**A bidder must score at least 75% total marks to qualify for further evaluation. (Score 97.5/130). The Technical Score will be weighted to 70.**

### **A) Compliance with technical specifications**

In this section, the bid will be analyzed to determine compliance with General and Particular technical specifications for the works as indicated in the tender document. The tenderer shall fill in the Technical Schedule as specified in the tender document for Equipment and Items indicating the Country of Origin, Model/Make/Manufacturer of the Item/Equipment they propose to supply.

The tenderer shall also submit relevant technical brochures/catalogues with the tender document, highlighting the catalogue Numbers of the proposed items. Such brochures/catalogues should indicate comprehensive relevant data of the proposed equipment/items which should include but not limited to the following:

- a) Standards of manufacture;
- b) Performance ratings/characteristics;
- c) Material of manufacture;
- d) Electrical power ratings; and
- e) Any other necessary requirements (Specify).

Following the above analyses, where the proposed equipment is found not to conform to the stipulated specifications, the tender will be deemed Non-Responsive and will not be evaluated further.

### **B) Assessment of deviations**

Pursuant to section 64 of the act, a tender is deemed responsive if it conforms to all the mandatory requirements and it does not contain major deviations. Section 23.2 of the instruction to tenderers, defines major deviations as

- a) One that affects in a substantial way the scope, quality, completion timing, administration of works to be undertaken by the tenderer under the contract, inconsistent with the tender document; or
- b) Which limits in any substantial way the rights of the employer or the tenderers obligations; or
- c) Whose rectification would affect unfairly the competitive position of other tenderers presenting substantially responsive tenders.

Where the deviations are minor in the view of the tender committee, with the concurrence of the procuring entity representative, the evaluation committee shall quantify such deviations pursuant to section 64 (3) of the act which requires that a minor deviation shall:

- a) Be quantified to the extent possible; and
- b) Be taken into account in the evaluation and comparison of tenders.

Where the deviation in the view of the tender committee with the concurrence of the procuring entity representative is major, the tender shall be deemed non responsive and will not be evaluated further

### **STAGE 3 - FINANCIAL EVALUATION**

Upon completion of the technical evaluation, a detailed financial evaluation shall follow.

The evaluation shall be in three stages

- a) Determination of Arithmetic errors
- b) Comparison of Rates; and
- c) Consistency of the Rates.

#### **A) Determination of Arithmetic Errors**

Arithmetic Errors will be corrected by the Procuring Entity as follows:

- i) In the event of a discrepancy between the tender amount as stated in the form of Tender and the corrected tender figure in the Main summary of the Bills of Quantities, the amount as stated in the Form of Tender shall prevail. Pursuant to Section 82 of the Public Procurement and Asset Disposal Act 2015, the tender sum as submitted and read out during the tender opening shall be absolute and final and shall not be the subject of correction, adjustment or amendment in any way by any person or entity;
- ii) Error correction factor shall be computed by expressing the difference between the amount and the corrected tender sum as a percentage of the corrected contract works (i.e. corrected tender sum less P.C; and Provisional Sums);
- iii) The Error correction factor shall be applied to all contract works (as a rebate or addition as the case may be) for the purposes of valuations for Interim Certificates and valuation of variations.

#### **B) Comparison of rates**

Items that are under priced or overpriced may indicate potential for non-delivery and front loading respectively. The committee shall promptly write to the tenderer asking for detailed breakdown of costs for any of the quoted items, relationship between those prices, proposed construction/installation methods and schedules.

The evaluation committee shall evaluate the responses and make an appropriate recommendation to the procuring entity giving necessary evidence. Such recommendations may include but not limited to:

- a) Recommend no adverse action to the tenderer after a convincing response;
- b) Employer requiring that the amount of the performance bond be raised at the expense of the successful tenderer to a level sufficient to protect the employer against potential financial losses;
  
- c) Recommend non-award based on the response provided and the available demonstrable evidence that the scope, quality, completion timing, administration of works to be undertaken by the tenderer, would adversely be affected or the rights of the employer or the tenderers obligations would be limited in a substantial way.

**C) Consistency of the Rates**

The evaluation committee will compare the consistency of rates for similar items and note all inconsistencies of the rates for similar items.

**FINANCIAL EVALUATION**

The Tenderers who qualify under Technical Evaluation will have their Financial Bid evaluated and the lowest responsive bid submitted after analysis shall have their tender considered for award.



## SECTION IV

### CONDITIONS OF MAIN CONTRACT

#### GENERAL CONDITIONS OF CONTRACT

#### 1 Definitions

1.1 In this Contract, except where context otherwise requires, the following terms shall be interpreted as indicated;

“**Bill of Quantities**” means the priced and completed Bill of Quantities forming part of the tender.

“**Compensation Events**” are those defined in Clause 24 hereunder.

“**The Completion Date**” means the date of completion of the Works as certified by the Project Manager, in accordance with Clause 31.

“**The Contract**” means the agreement entered into between the Kenya Medical Supplies Authority and the Contractor as recorded in the Agreement Form and signed by the parties including all attachments and appendices thereto and all documents incorporated by reference therein to execute, complete, and maintain the Works,

“**The Contractor**” refers to the person or corporate body whose tender to carry out the Works has been accepted by Kenya Medical Supplies Authority

“**The Contractor’s Tender**” is the completed tendering document submitted by the Contractor to Kenya Medical Supplies Authority

“**The Contract Price**” is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

“**Days**” are calendar days; “**Months**” are calendar months.

“**A Defect**” is any part of the Works not completed in accordance with the Contract.

“**The Defects Liability Certificate**” is the certificate issued by Project Manager upon correction of defects by the Contractor.

“**The Defects Liability Period**” is the period named in the Contract Data and calculated from the Completion Date.

“**Drawings**” include calculations and other information provided or approved by the Project Manager for the execution of the Contract.

“**Dayworks**” are Work inputs subject to payment on a time basis for labour and the associated materials and plant.

**“Employer”**, or the **“Procuring entity”** as defined in the Public Procurement Regulations (i.e. National or County Government administration, Universities, Public Institutions and Corporations, etc) is the party who employs the Contractor to carry out the Works.

**“Equipment”** is the Contractor’s machinery and vehicles brought temporarily to the Site for the execution of the Works.

**“The Intended Completion Date”** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

**“Materials”** are all supplies, including consumables, used by the Contractor for incorporation in the Works.

**“Plant”** is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

**“Project Manager”** is the person named in the Appendix to Conditions of Contract (or any other competent person appointed by the Kenya Medical Supplies Authority and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract and shall be an “Architect” or a “Quantity Surveyor” registered under the Architects and Quantity Surveyors Act Cap 525 or an “Engineer” registered under Engineers Registration Act Cap 530.

**“Site”** is the area defined as such in the Appendix to Condition of Contract.

**“Site Investigation Reports”** are those reports that may be included in the tendering documents which are factual and interpretative about the surface and subsurface conditions at the Site.

**“Specifications”** means the Specifications of the Works included in the Contract and any modification or addition made or approved by the Project Manager.

**“Start Date”** is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with the Site possession date(s).

**“A Subcontractor”** is a person or corporate body who has a Contract with the Contractor to carry out a part of the Work in the Contract, which includes Work on the Site.

**“Temporary works”** are works designed, constructed, installed, and removed by the Contractor which are needed for construction or installation of the Works.

**“A Variation”** is an instruction given by the Project Manager which varies the Works.

**“The Works”** are what the Contract requires the Contractor to construct, install, and turnover to Kenya Medical Supplies Authority, as defined in the Appendix to Conditions of Contract.

## **2 Interpretation**

- 2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning in English Language unless

specifically defined. The Project Manager will provide instructions clarifying queries about these Conditions of Contract.

- 2.2 If sectional completion is specified in the Appendix to Conditions of Contract, reference in the Conditions of Contract to the Works, the Completion Date and the Intended Completion Date apply to any section of the Works (other than references to the Intended Completion Date for the whole of the Works).
- 2.3 The following documents shall constitute the Contract documents and shall be interpreted in the following order of priority;
  - a) Agreement,
  - b) Letter of Acceptance,
  - c) Contractor's Tender,
  - d) Appendix to Conditions of Contract,
  - e) Conditions of Contract,
  - f) Specifications,
  - g) Drawings,
  - h) Bill of Quantities,
  - i) Any other documents listed in the Appendix to Conditions of Contract as forming part of the Contract.

Immediately after the execution of the Contract, the Project Manager shall furnish both Kenya Medical Supplies Authority and the Contractor with two copies each of all the Contract documents. Further, as and when necessary the Project Manager shall furnish the Contractor [always with a copy to the Kenya Medical Supplies Authority] with three [3] copies of such further drawings or details or descriptive schedules as are reasonably necessary either to explain or amplify the Contract drawings or to enable the Contractor to carry out and complete the Works in accordance with these Conditions.

### **3 Language and Law**

- 3.1 Language of the Contract and the law governing the Contract shall be English language and the Laws of Kenya respectively unless otherwise stated.

### **4 Project Manager's Decisions**

- 4.1 Except where otherwise specifically stated, the Project Manager will decide contractual matters between Kenya Medical Supplies Authority and the Contractor in the role representing the Kenya Medical Supplies Authority.

### **5 Delegation**

- 5.1 The Project Manager may delegate any of his duties and responsibilities to others after notifying the Contractor.

### **6 Communications**

- 6.1 Communication between parties shall be effective only when in writing. A notice shall be effective only when it is delivered.

**7 Subcontracting**

- 7.1 The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of Kenya Medical Supplies Authority in writing. Subcontracting shall not alter the Contractor's obligations.

**8 Other Contractors**

- 8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities etc. as listed in the Appendix to Conditions of Contract and also with the Kenya Medical Supplies Authority, as per the directions of the Project Manager. The Contractor shall also provide facilities and services for them. Kenya Medical Supplies Authority may modify the said List of Other Contractors etc., and shall notify the Contractor of any such modification.

**9 Personnel**

- 9.1 The Contractor shall employ the key personnel named in the Qualification Information, to carry out the functions stated in the said Information or other personnel approved by the Project Manager. The Project Manager will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are substantially equal to or better than those of the personnel listed in the Qualification Information. If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the Work in the Contract.

**10 Works**

- 10.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings. The Works may commence on the Start Date and shall be carried out in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.

**11 Safety and Temporary Works**

- 11.1 The Contractor shall be responsible for the design of temporary works. However before erecting the same, he shall submit his designs including specifications and drawings to the Project Manager and to any other relevant third parties for their approval. No erection of temporary works shall be done until such approvals are obtained.
- 11.2 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary works and all drawings prepared by the Contractor for the execution of the temporary or permanent Works, shall be subject to prior approval by the Project Manager before they can be used.
- 11.3 The Contractor shall be responsible for the safety of all activities on the Site.

**12 Discoveries**

- 12.1 Anything of historical or other interest or of significant value unexpectedly discovered on Site shall be the property of Kenya Medical Supplies Authority. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.

**13 Work Program**

- 13.1 Within the time stated in the Appendix to Conditions of Contract, the Contractor shall submit to the Project Manager for approval a program showing the general methods, arrangements, order, and timing for all the activities in the Works. An update of the program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining Work, including any changes to the sequence of the activities.

The Contractor shall submit to the Project Manager for approval an updated program at intervals no longer than the period stated in the Appendix to Conditions of Contract. If the Contractor does not submit an updated program within this period, the Project Manager may withhold the amount stated in the said Appendix from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue program has been submitted. The Project Manager's approval of the program shall not alter the Contractor's obligations. The Contractor may revise the program and submit it to the Project Manager again at any time. A revised program shall show the effect of Variations and Compensation Events.

**14 Possession of Site**

- 14.1 Kenya Medical Supplies Authority shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Appendix to Conditions of Contract, Kenya Medical Supplies Authority will be deemed to have delayed the start of the relevant activities, and this will be a Compensation Event.

**15 Access to Site**

- 15.1 The Contractor shall allow the Project Manager and any other person authorised by the Project Manager, access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

**16. Instructions**

- 16.1 The Contractor shall carry out all instructions of the Project Manager which are in accordance with the Contract.
- 16.2 If within seven days after receipt of a written notice from the Project Manager requiring compliance with Project Manager's instructions the Contractor does not comply therewith, the Kenya Medical Supplies Authority may employ and pay other persons to execute any work whatsoever which may be necessary to give effect to such instructions and all costs incurred in connection therewith shall be recoverable from the Contractor by the Employer as a debt or may be deducted by the Project Manager from any moneys due or to become due to the Contractor.

under this Contract

**17 Extension or Acceleration of Completion Date**

- 17.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a variation is issued which makes it impossible for completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining Work, which would cause the Contractor to incur additional cost. The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager in writing for a decision upon the effect of a Compensation Event or variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay caused by such failure shall not be considered in assessing the new (extended) Completion Date.
- 17.2 No bonus for early completion of the Works shall be paid to the Contractor by the Employer.

**18 Management Meetings**

- 18.1 A Contract management meeting shall be held monthly and attended by the Project Manager and the Contractor. Its business shall be to review the plans for the remaining Work and to deal with matters raised in accordance with the early warning procedure. The Project Manager shall record the minutes of management meetings and provide copies of the same to those attending the meeting and the Employer. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

**19 Early Warning**

- 19.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the Work, increase the Contract Price or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.
- 19.2 The Contractor shall cooperate with the Project Manager in making and considering proposals on how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the Work and in carrying out any resulting instructions of the Project Manager.

**20 Defects**

- 20.1 The Project Manager shall inspect the Contractor's work and notify the Contractor of any defects that are found. Such inspection shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a defect and to uncover and test any Work that the Project Manager considers may have a defect. Should the defect be found, the cost of uncovering and making good shall be borne by the Contractor, However, if there is no defect found, the cost of uncovering and making good shall be treated as a variation and added to the Contract Price.
- 20.2 The Project Manager shall give notice to the Contractor of any defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the Appendix to Conditions of Contract. The Defects Liability Period shall be extended for as long as defects remain to be corrected.
- 20.3 Every time notice of a defect is given, the Contractor shall correct the notified defect within the length of time specified by the Project Manager's notice. If the Contractor has not corrected a defect within the time specified in the Project Manager's notice, the Project Manager will assess the cost of having the defect corrected by other parties and such cost shall be treated as a variation and be deducted from the Contract Price.

**21 Bills of Quantities**

- 21.1 The Bills of Quantities shall contain items for the construction, installation, testing and commissioning of the Work to be done by the Contractor. The Contractor will be paid for the quantity of the Work done at the rate in the Bills of Quantities for each item.
- 21.2 If the final quantity of the Work done differs from the quantity in the Bills of Quantities for the particular item by more than 25 percent and provided the change exceeds 1 percent of the Initial Contract price, the Project Manager shall adjust the rate to allow for the change.
- 21.3 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bills of Quantities.

**22 Variations**

- 22.1 All variations shall be included in updated programs produced by the Contractor.
- 22.2 The Contractor shall provide the Project Manager with a quotation for carrying out the variations when requested to do so. The Project Manager shall assess the quotation, which shall be given within seven days of the request or within any longer period as may be stated by the Project Manager and before the Variation is ordered.

- 22.3 If the work in the variation corresponds with an item description in the Bills of Quantities and if in the opinion of the Project Manager, the quantity of work is not above the limit stated in Clause 21.2 or the timing of its execution does not cause the cost per unit of quantity to change, the rate in the Bills of Quantities shall be used to calculate the value of the variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the variation does not correspond with items in the Bills of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of Work.
- 22.4 If the Contractor's quotation is unreasonable, the Project Manager may order the variation and make a change to the Contract price, which shall be based on the Project Manager's own forecast of the effects of the variation on the Contractor's costs.
- 22.5 If the Project Manager decides that the urgency of varying the Work would prevent a quotation being given and considered without delaying the Work, no quotation shall be given and the variation shall be treated as a Compensation Event.
- 22.6 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.
- 22.7 When the Program is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast.

## **23 Payment Certificates, Currency of Payments and Advance Payments**

- 23.1 The Contractor shall submit to the Project Manager monthly applications for payment giving sufficient details of the Work done and materials on Site and the amounts which the Contractor considers himself to be entitled to. The Project Manager shall check the monthly application and certify the amount to be paid to the Contractor within 14 days. The value of Work executed and payable shall be determined by the Project Manager.
- 23.2 The value of Work executed shall comprise the value of the quantities of the items in the Bills of Quantities completed, materials delivered on Site, variations and compensation events. Such materials shall become the property of Kenya Medical Supplies Authority once Kenya Medical Supplies Authority has paid the Contractor for their value .Thereafter, they shall not be removed from Site without the Project Manager's instructions except for use upon the Works.
- 23.3 Payments shall be adjusted for deductions for retention. Kenya Medical Supplies Authority shall pay the Contractor the amounts certified by the Project Manager within 30 days of the date of issue of each certificate. If Kenya Medical Supplies Authority makes a late payment, the Contractor shall be paid simple interest on the late payment in the next payment. Interest shall be calculated on the basis of number of days delayed at a rate three percentage points above the Central Bank of Kenya's average rate for base lending prevailing as of the first day the payment becomes overdue.
- 23.4 If an amount certified is increased in a later certificate or as a result of an award by an Arbitrator, the Contractor shall be paid interest upon the delayed payment



as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

- 23.5 Items of the Works for which no rate or price has been entered in will not be paid for by Kenya Medical Supplies Authority and shall be deemed covered by other rates and prices in the Contract.
- 23.6 The Contract Price shall be stated in Kenya Shillings. All payments to the Contractor shall be made in Kenya Shillings and foreign currency in the proportion indicated in the tender, or agreed prior to the execution of the Contract Agreement and indicated therein. The rate of exchange for the calculation of the amount of foreign currency payment shall be the rate of exchange indicated in the Appendix to Conditions of Contract. If the Contractor indicated foreign currencies for payment other than the currencies of the countries of origin of related goods and services Kenya Medical Supplies Authority reserves the right to pay the equivalent at the time of payment in the currencies of the countries of such goods and services. Kenya Medical Supplies Authority and the Project Manager shall be notified promptly by the Contractor of an changes in the expected foreign currency requirements of the Contractor during the execution of the Works as indicated in the Schedule of Foreign Currency Requirements and the foreign and local currency portions of the balance of the Contract Price shall then be amended by agreement between Kenya Medical Supplies Authority and the Contractor in order to reflect appropriately such changes.
- 23.7 In the event that an advance payment is granted, the following shall apply:-
- a) On signature of the Contract, the Contractor shall at his request, and without furnishing proof of expenditure, be entitled to an advance of 10% (ten percent) of the original amount of the Contract. The advance shall not be subject to retention money.
  - b) No advance payment may be made before the Contractor has submitted proof of the establishment of deposit or a directly liable guarantee satisfactory to Kenya Medical Supplies Authority in the amount of the advance payment. The guarantee shall be in the same currency as the advance.
  - c) Reimbursement of the lump sum advance shall be made by deductions from the Interim payments and where applicable from the balance owing to the Contractor. Reimbursement shall begin when the amount of the sums due under the Contract reaches 20% of the original amount of the Contract. It shall have been completed by the time 80% of this amount is reached.

The amount to be repaid by way of successive deductions shall be calculated by means of the formula:

$$R = \frac{A(x^1 - x^{11})}{80 - 20}$$

Where:

*R* =the amount to be reimbursed

A =the amount of the advance which has been granted

$X^1$  = the amount of proposed cumulative payments as a percentage of the original amount of the Contract. This figure will exceed 20% but not exceed 80%.

$X^{11}$  = the amount of the previous cumulative payments as a percentage of the original amount of the Contract. This figure will be below 80%but not less than 20%.

- d) with each reimbursement the counterpart of the directly liable guarantee may be reduced accordingly.

## **24 Compensation Events**

24.1 The following issues shall constitute Compensation Events:

- (a) Kenya Medical Supplies Authority does not give access to a part of the Site by the Site Possession Date stated in the Appendix to Conditions of Contract.
- (b) Kenya Medical Supplies Authority modifies the List of Other Contractors, etc., in a way that affects the Work of the Contractor under the Contract.
- (c) The Project Manager orders a delay or does not issue drawings, specifications or instructions required for execution of the Works on time.
- (d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon the Work, which is then found to have no defects.
- (e) The Project Manager unreasonably does not approve a subcontract to be let.
- (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to tenderers (including the Site investigation reports), from information available publicly and from a visual inspection of the Site.
- (g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by Kenya Medical Supplies Authority or additional work required for safety or other reasons.
- (h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
- (i) The effects on the Contractor of any of Kenya Medical Supplies Authority risks.
- (j) The Project Manager unreasonably delays issuing a Certificate of Completion.
- (k) Other compensation events described in the Contract or determined by the Project Manager shall apply.

- 24.2 If a compensation event would cause additional cost or would prevent the Work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.
- 24.3 As soon as information demonstrating the effect of each compensation event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager will assume that the Contractor will react competently and promptly to the event.
- 24.4 The Contractor shall not be entitled to compensation to the extent that Kenya Medical Supplies Authority's interests are adversely affected by the Contractor not having given early warning or not having co-operated with the Project Manager.
- 24.5 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the Appendix to Conditions of Contract.
- 24.6 The Contractor shall give written notice to the Project Manager of his intention to make a claim within thirty days after the event giving rise to the claim has first arisen. The claim shall be submitted within thirty days thereafter.
- Provided always that should the event giving rise to the claim of continuing effect, the Contractor shall submit an interim claim within the said thirty days and a final claim within thirty days of the end of the event giving rise to the claim.

## **25 Price Adjustment**

- 25.1 The Project Manager shall adjust the Contract Price if taxes, duties and other levies are changed between the date 30 days before the submission of tenders for the Contract and the date of Completion. The adjustment shall be the change in the amount of tax payable by the Contractor.
- 25.2 The Contract Price shall be deemed to be based on exchange rates current at the date of tender submission in calculating the cost to the Contractor of materials to be specifically imported (by express provisions in the Contract Bills of Quantities or Specifications) for permanent incorporation in the Works. Unless otherwise stated in the Contract, if at any time during the period of the Contract exchange rates shall be varied and this shall affect the cost to the Contractor of such materials, then the Project Manager shall assess the net difference in the cost of such materials. Any amount from time to time so assessed shall be added to or deducted from the Contract Price, as the case may be.
- 25.3 Unless otherwise stated in the Contract, the Contract Price shall be deemed to have been calculated in the manner set out below and in sub-clauses 25.4 and

25.5 and shall be subject to adjustment in the events specified thereunder;

(i) The prices contained in the Contract Bills of Quantities shall be deemed to be based upon the rates of wages and other emoluments and expenses as determined by the Joint Building Council of Kenya (J.B.C.) and set out in the schedule of basic rates issued 30 days before the date for submission of tenders. A copy of the schedule used by the Contractor in his pricing shall be attached in the Appendix to Conditions of Contract.

(ii) Upon J.B.C. determining that any of the said rates of wages or other emoluments and expenses are increased or decreased, then the Contract Price shall be increased or decreased by the amount assessed by the Project Manager based upon the difference, expressed as a percentage, between the rate set out in the schedule of basic rates issued 30 days before the date for submission of tenders and the rate published by the J.B.C. and applied to the quantum of labour incorporated within the amount of Work remaining to be executed at the date of publication of such increase or decrease.

(iii) No adjustment shall be made in respect of changes in the rates of wages and other emoluments and expenses which occur after the date of Completion except during such other period as may be granted as an extension of time under clause 17.0 of these Conditions.

25.4 The prices contained in the Contract Bills of Quantities shall be deemed to be based upon the basic prices of materials to be permanently incorporated in the Works as determined by the J.B.C. and set out in the schedule of basic rates issued 30 days before the date for submission of tenders. A copy of the schedule used by the Contractor in his pricing shall be attached in the Appendix to Conditions of Contract.

25.5 Upon the J.B.C. determining that any of the said basic prices are increased or decreased then the Contract Price shall be increased or decreased by the amount to be assessed by the Project Manager based upon the difference between the price set out in the schedule of basic rates issued 30 days before the date for submission of tenders and the rate published by the J.B.C. and applied to the quantum of the relevant materials which have not been taken into account in arriving at the amount of any interim certificate under clause 23 of these Conditions issued before the date of publication of such increase or decrease.

25.6 No adjustment shall be made in respect of changes in basic prices of materials which occur after the date for Completion except during such other period as may be granted as an extension of time under clause 17.0 of these Conditions.

25.7 The provisions of sub-clause 25.1 to 25.2 herein shall not apply in respect of any materials included in the schedule of basic rates.

**26 Retention**

26.1 Kenya Medical Supplies Authority shall retain from each payment due to the Contractor the proportion stated in the Appendix to Conditions of Contract until Completion of the whole of the Works. On Completion of the whole of the Works, half the total amount retained shall be repaid to the Contractor and the remaining half when the Defects Liability Period has passed and the Project Manager has certified that all defects notified to the Contractor before the end of this period have been corrected.

**27 Liquidated Damages**

27.1 The Contractor shall pay liquidated damages to Kenya Medical Supplies Authority at the rate stated in the Appendix to Conditions of Contract for each day that the actual Completion Date is later than the Intended Completion Date. Kenya Medical Supplies Authority may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not alter the Contractor's liabilities.

27.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rate specified in Clause 23.30.

**28 Securities**

28.1 The Performance Security shall be provided to Kenya Medical Supplies Authority no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a reputable bank acceptable to Kenya Medical Supplies Authority, and denominated in Kenya Shillings. The Performance Security shall be valid until a date 30 days beyond the date of issue of the Certificate of Completion.

**29 Dayworks**

29.1 If applicable, the Dayworks rates in the Contractor's tender shall be used for small additional amounts of Work only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

29.2 All work to be paid for as Dayworks shall be recorded by the Contractor on Forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the Work being done.

29.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

**30 Liability and Insurance**

- 30.1 From the Start Date until the Defects Correction Certificate has been issued, the following are the Employer's risks:
- (a) The risk of personal injury, death or loss of or damage to property (excluding the Works, Plant, Materials and Equipment), which are due to:
    - (i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works, or
    - (ii) negligence, breach of statutory duty or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.
  - (b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault Kenya Medical Supplies Authority or in Kenya Medical Supplies Authority's design, or due to war or radioactive contamination directly affecting the place where the Works are being executed.
- 30.2 From the Completion Date until the Defects Correction Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is the Employer's risk except loss or damage due to:
- (a) a defect which existed on or before the Completion Date.
  - (b) an event occurring before the Completion Date, which was not itself the Kenya Medical Supplies Authority's risk
  - (c) the activities of the Contractor on the Site after the Completion Date.
- 30.3 From the Start Date until the Defects Correction Certificate has been issued, the risks of personal injury, death and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Kenya Medical Supplies Authority's risk are Contractor's risks.

The Contractor shall provide, in the joint names of Kenya Medical Supplies Authority and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts stated in the Appendix to Conditions of Contract for the following events;

- (a) loss of or damage to the Works, Plant, and Materials;
- (b) loss of or damage to Equipment;
- (c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract, and
- (d) personal injury or death.

- 30.4 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation required to rectify the loss or damage incurred.
- 30.5 If the Contractor does not provide any of the policies and certificates required, Kenya Medical Supplies Authority may effect the insurance which the Contractor should have provided and recover the premiums from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.
- 30.6 Alterations to the terms of insurance shall not be made without the approval of the Project Manager. Both parties shall comply with any conditions of insurance policies.

### **31 Completion and Taking Over**

- 31.1 Upon deciding that the Works are complete, the Contractor shall issue a written request to the Project Manager to issue a Certificate of Completion of the Works. Kenya Medical Supplies Authority shall take over the Site and the Works within seven [7] days of the Project Manager's issuing a Certificate of Completion.

### **32 Final Account**

- 32.1 The Contractor shall issue the Project Manager with a detailed account of the total amount that the Contractor considers payable to him by Kenya Medical Supplies Authority under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 30 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 30 days a schedule that states the scope of the corrections or additions that are necessary. If the final account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a Payment Certificate. Kenya Medical Supplies Authority shall pay the Contractor the amount due in the Final Certificate within 60 days.

### **33 Termination**

- 33.1 Kenya Medical Supplies Authority or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract. These fundamental breaches of Contract shall include, but shall not be limited to, the following;
  - (a) the Contractor stops work for 30 days when no stoppage of work is shown on the current program and the stoppage has not been authorized by the Project Manager;
  - (b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days;
  - (c) the Contractor is declared bankrupt or goes into liquidation other than for a

reconstruction or amalgamation;

(d) a payment certified by the Project Manager is not paid by Kenya Medical Supplies Authority to the Contractor within 30 days (for Interim Certificate) or 60 days (for Final Certificate) of issue.

(e) the Project Manager gives notice that failure to correct a particular defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;

(f) the Contractor does not maintain a security, which is required.

33.2 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under Clause 33.1 above, the Project Manager shall decide whether the breach is fundamental or not.

33.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

33.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible. The Project Manager shall immediately thereafter arrange for a meeting for the purpose of taking record of the Works executed and materials, goods, equipment and temporary buildings on Site.

#### **34 Payment Upon Termination**

34.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the Work done and materials ordered and delivered to Site up to the date of the issue of the certificate. Additional liquidated damages shall not apply. If the total amount due to fundamental breaches of Contract shall include, but shall not be limited to, the following; exceeds any payment due to the Contractor, the difference shall be a debt payable by the Contractor.

34.2 If the Contract is terminated for the Kenya Medical Supplies Authority convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for the value of the Work done, materials ordered, the reasonable cost of removal of equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works.

34.3 Kenya Medical Supplies Authority may employ and pay other persons to carry out and complete the Works and to rectify any defects and may enter upon the Works and use all materials on the Site, plant, equipment and temporary works.

34.4 The Contractor shall, during the execution or after the completion of the Works under this clause remove from the Site as and when required, within such reasonable time as the Project Manager may in writing specify, any temporary buildings, plant, machinery, appliances, goods or materials belonging to or hired by him, and in default Kenya Medical Supplies Authority may (without being responsible for any loss or damage) remove and sell any such property of the Contractor, holding the proceeds less all costs incurred to the credit of the



Contractor.

Until after completion of the Works under this clause Kenya Medical Supplies Authority shall not be bound by any other provision of this Contract to make any payment to the Contractor, but upon such completion as aforesaid and the verification within a reasonable time of the accounts therefore the Project Manager shall certify the amount of expenses properly incurred by Kenya Medical Supplies Authority and, if such amount added to the money paid to the Contractor before such determination exceeds the total amount which would have been payable on due completion in accordance with this Contract the difference shall be a debt payable to the Employer by the Contractor; and if the said amount added to the said money be less than the said total amount, the difference shall be a debt payable by Kenya Medical Supplies Authority to the Contractor.

### **35 Release from Performance**

- 35.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either Kenya Medical Supplies Authority or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop Work as quickly as possible after receiving this certificate and shall be paid for all Work carried out before receiving it.

### **36 Corrupt Gifts and Payments of Commission**

- 36.1 The Contractor shall not;
- (a) Offer or give or agree to give to any person in the service of Kenya Medical Supplies Authority any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other Contract for Kenya Medical Supplies Authority or for showing or forbearing to show favour or disfavour to any person in relation to this or any other contract for Kenya Medical Supplies Authority.
  - (b) Enter into this or any other contract with the Kenya Medical Supplies Authority in connection with which commission has been paid or agreed to be paid by him or on his behalf or to his knowledge, unless before the Contract is made particulars of any such commission and of the terms and conditions of any agreement for the payment thereof have been disclosed in writing to Kenya Medical Supplies Authority.

Any breach of this Condition by the Contractor or by anyone employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) shall be an offence under the provisions of the Public Procurement Regulations issued under The Exchequer and Audit Act Cap 412 of the Laws of Kenya.

**37 Settlement Of Disputes**

37.1 In case any dispute or difference shall arise between Kenya Medical Supplies Authority or the Project Manager on his behalf and the Contractor, either during the progress or after the completion or termination of the Works, such dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed by the Chairman or Vice Chairman of any of the following professional institutions;

- (i) Architectural Association of Kenya
- (ii) Institute of Quantity Surveyors of Kenya
- (iii) Association of Consulting Engineers of Kenya
- (iv) Chartered Institute of Arbitrators (Kenya Branch)
- (v) Institution of Engineers of Kenya

On the request of the applying party. The institution written to first by the aggrieved party shall take precedence over all other institutions.

37.2 The arbitration may be on the construction of this Contract or on any matter or thing of whatsoever nature arising thereunder or in connection therewith, including any matter or thing left by this Contract to the discretion of the Project Manager, or the withholding by the Project Manager of any certificate to which the Contractor may claim to be entitled to or the measurement and valuation referred to in clause 23.0 of these conditions, or the rights and liabilities of the parties subsequent to the termination of Contract.

37.3 Provided that no arbitration proceedings shall be commenced on any dispute or difference where notice of a dispute or difference has not been given by the applying party within ninety days of the occurrence or discovery of the matter or issue giving rise to the dispute.

37.4 Notwithstanding the issue of a notice as stated above, the arbitration of such a dispute or difference shall not commence unless an attempt has in the first instance been made by the parties to settle such dispute or difference amicably with or without the assistance of third parties. Proof of such attempt shall be required.

37.5 Notwithstanding anything stated herein the following matters may be referred to arbitration before the practical completion of the Works or abandonment of the Works or termination of the Contract by either party:

- (a) The appointment of a replacement Project Manager upon the said person ceasing to act.

- (b) Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions.
  - (c) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
  - (d) Any dispute or difference arising in respect of war risks or war damage.
- 37.6 All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract, unless Kenya Medical Supplies Authority and the Contractor agree otherwise in writing.
- 37.7 The Arbitrator shall, without prejudice to the generality of his powers, have powers to direct such measurements, computations, tests or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject of or included in any certificate.
- 37.8 The Arbitrator shall, without prejudice to the generality of his powers, have powers to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision requirement or notice had been given.
- 37.9 The award of such Arbitrator shall be final and binding upon the parties.

## **SPECIAL CONDITIONS OF CONTRACT**

Special conditions of contract shall supplement the general conditions of contract, wherever there is a conflict between the GCC and the SCC, the provisions of the SCC herein shall prevail over those in the GCC.

Special conditions of contracts with reference to the general conditions of contract.

**SECTION V**  
**APPENDIX TO CONDITIONS OF CONTRACT**  
**(SUBCONTRACT WORKS)**

<b>1.00</b>	<p><b><u>APPENDIX TO CONDITIONS OF CONTRACT</u></b></p> <p><b>THE EMPLOYER IS:-</b></p> <p>Name: <u>KENYA MEDICAL SUPPLIES AUTHORITY.</u> Address: <u>P. O. BOX 47715 - 00100, NAIROBI</u> Name of Authorized Representative: <u>THE CHIEF EXECUTIVE OFFICER, KENYA MEDICAL SUPPLIES AUTHORITY</u> Telephone: ..... Facsimile: .....</p> <p><b>THE PROJECT MANAGER IS:</b></p> <p>Name: <u>WORKS SECRETARY, MINISTRY OF TRANSPORT, INFRASTRUCTURE, HOUSING AND URBAN DEVELOPMENT, STATE DEPARTMENT OF PUBLIC WORKS</u> Address: <u>P. O. BOX 30743 – 00100, NAIROBI</u> Telephone: <u>+254 20272 3101</u> Facsimile: <u>+254 202724504</u> Email: <u>info@publicworks.go.ke</u></p> <p>The name (and identification number) of the Contract is <u>PROPOSED CONSTRUCTION OF KEMSA MODERN WAREHOUSE AND OFFICE BLOCK AT EMBAKASI, NAIROBI - Tender Ref. No GF-KEMSA-CONST -3/OIT6/2017-2018</u></p> <hr/> <p>The works in this contract comprise the construction of : Modern warehouse - 14,680 M<sup>2</sup> Office block with 1No. basement and 6No. floors – 15,758 M<sup>2</sup> Flammable goods store – 307 M<sup>2</sup> Associated Civil and External Works Associated Mechanical and Electrical Services Installations.</p> <p>The Start Date shall be <u>As agreed with the Employers.</u></p> <p>The Intended Completion Period is <b>130 Weeks</b> for the whole works from the start date.</p> <hr/> <p>The Contractor shall submit a revised program for the Works within <u>Seven days</u> of delivery of the Letter of Acceptance. The Site Possession Date shall be <u>14 days from the date of acceptance letter</u></p> <p>The Site is located in Embakasi, KEMSA Land LR No. 9042/176 Embakasi.</p> <p>The Defects Liability Period is <u>180 days</u> AFTER DATE OF PRACTICAL COMPLETION.</p>
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Other Contractors, utilities, etc., to be engaged by the Employer on the Site include those for the execution of:

1. None
2. “\_\_\_\_\_”
3. “\_\_\_\_\_”
4. “\_\_\_\_\_”

The minimum insurance covers shall be;

1. The minimum cover for insurance of the Works and of plant and Materials in respect of the Contractor’s faulty design is:10% CONTRACT SUM
2. The minimum cover for loss or damage to Equipment is:10% CONTRACT SUM
3. The minimum for insurance of other property is:10% CONTRACT SUM
4. The minimum cover for personal injury or death insurance
5. For the Contractor’s employees: AS PER WORKMAN’S COMPENSATION
6. And for other people is:5% CONTRACT SUM

The following events shall also be Compensation Events: AS STATED IN THE CONDITIONS OF CONTRACT

The period between Program updates is 30 days.

The amount to be withheld for late submission of an updated Program is Full Certificate

The proportion of payments retained is TEN PER CENT (10%) OF CERTIFIED AMOUNT

The Limit of retention is FIVE PER CENT (5%) OF CONTRACT SUM

The Minimum monthly certificate shall be in the amount of 2% (minimum) of Contract Price / Contract Sum

The Price Adjustment Clause SHALL NOT APPLY. THIS IS A FIXED PRICE CONTRACT

The liquidated damages for the whole of the Subcontract Works are KENYA SHILLINGS FIVE HUNDRED THOUSAND (KSHS.100,000.00 ) PER WEEK OR PART THEREOF

The Performance Security shall be for the following minimum amounts equivalent as a percentage of the Contract Price **FIVE PERCENT (5%)**.

The Completion Period for the Works is **130 Weeks**

Bidders are allowed to bid in any freely convertible currency. The rate of exchange for comparison purpose shall be the CBK rate on the tender opening date.

The schedule of basic rates used in pricing by the Contractor is as attached [*Contractor to attach*].

Clause 25.3 (KABCEC clauses) shall not apply. The bidder shall instead quote for prices from material from reputed manufacturers or suppliers for material listed.

Advance Payment **SHALL NOT** be granted. Clause 23.7 is not applicable

Special preference shall be given to the construction of the warehouse, flammable goods store, External Works and Civil works. The office block will commence upon satisfactory progression and / or on completion of the warehouse, flammable goods store, External Works and Civil works on Instruction from the Project Manager in consultation with the client. However, the Contractor will not be entitled to claims for loss of profit and other related costs / expenses in relation to delay of commencement office block

## SECTION VI

### STANDARD FORMS

#### NOTES ON THE SAMPLE FORMS

- 1 *Form of Invitation to Tender* - form to be completed by the Kenya Medical Supplies Authority
- 2 *Form of Tender* - The form of tender must be completed by the tenderer and submitted with the tender documents. It must also be duly signed by duly authorized representatives of the tenderer.
- 3 *Letter of Acceptance* this form letter will be used to communicate the award to the successful tenderer
- 4 *Form of Agreement* - The Form of Agreement shall not be completed by the tenderer at the time of submitting the tender. The Contract Form shall be completed after contract award and should incorporate the accepted contract price.
- 5 *Form-of Tender Security* - When required by the tender documents the tender shall provide the tender security either in the form included herein or in another format acceptable to the Kenya Medical Supplies Authority.
- 6 *Performance Security Form*- The performance security form should not be completed by the tenderers at the time of tender preparation. Only the successful tenderer will be required to provide performance security in the form provided herein or in another form acceptable to the Kenya Medical Supplies Authority.
- 7 *Bank Guarantee for Advance Payment Form* - When Advance payment is requested for by the successful bidder and agreed by the Kenya Medical Supplies Authority, this form must be completed fully and duly signed by the authorized officials of the bank.
- 8 *Qualification Information* - this form must be completed fully and duly signed by the bidder.
- 9 *Tender Questionnaire* - this form must be completed fully and duly signed by the bidder.
- 10 *Confidential Business Questionnaire Form* - This form must be completed by the tenderer and submitted with the tender documents.
11. *Statement of Foreign Currency Requirement* – this form is not applicable to this tender.
12. *Details of Sub-Contractors* - This form must be completed by the tenderer and submitted with the tender documents.
13. *Request for Review Form* This form shall only be used after tender evaluation if a bidder disagrees with the decisions of the Procuring Entity.
14. *Declaration of Undertaking (Integrity Statement)*

15. *Non - Debarment Declaration* - This form must be completed by the tenderer and submitted with the tender documents.
  
16. *Site Visit Declaration Form* – This form is for information only. A pre-bid site visit certificate has been issued elsewhere in this document and shall only be filled during the pre-bid site visit in the manner prescribed therein.



**FORM OF INVITATION FOR TENDERS**

\_\_\_\_\_ [date]

To: TENDERER'S NAME \_\_\_\_\_

P. O. BOX \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Dear Sirs:

RE: \_\_\_\_\_

You have been prequalified to tender for the above project.

We hereby invite you and other prequalified tenderers to submit a tender for the execution and completion of the above Contract.

A complete set of tender documents may be purchased by you from \_\_\_\_\_

Upon payment of a non-refundable fee of \_\_\_\_\_

All tenders must be accompanied by ONE (1) copy of both Technical and Financial Proposals and a security in the form and amount specified in the tendering documents, and must be delivered to \_\_\_\_\_, or be addressed to \_\_\_\_\_. Tenders will be opened immediately thereafter, in the presence of tenderers' representatives who choose to attend.

Please confirm receipt of this letter immediately in writing by cable/facsimile or telex.

Yours faithfully,

\_\_\_\_\_ Authorized Signature

\_\_\_\_\_ Name and Title

**QUALIFICATION INFORMATION**

**1. Individual Tenderers or Individual Members of Joint Ventures**

1.1 Constitution or legal status of tenderer (attach copy or Incorporation Certificate);

Place of registration: \_\_\_\_\_

Principal place of business \_\_\_\_\_

Power of attorney of signatory of tender \_\_\_\_\_

1.2 Total annual volume of construction work performed in the last five years

Year	Volume	
	Currency	Value

1.3 Work performed as Main Contractor on works of a similar nature and volume over the last five years. Also list details of work under way or committed, including expected completion date.

Project Name	Name of Client and Contact Person	Type of Work Performed and Year of Completion	Value of Contract

1.4 Major items of Contractor’s Equipment proposed for carrying out the Works. List all information requested below. Refer also to Clause 1.7(c) of the Instructions to Tenderers

<b>Item of Equipment</b>	<b>Description, Make and age (years)</b>	<b>Condition (new, good, poor) and number available</b>	<b>Owned, leased (from whom?), or to be purchased (from whom?)</b>

1.5 Qualifications and experience of key personnel proposed for administration and execution of the Contract. Attach biographical data. Refer also to clause 1.5(e) of the Instructions to Tenderers and Clause 9.1 of the Conditions of Contract

<b>Position</b>	<b>Name</b>	<b>Years of experience (general)</b>	<b>Years of experience in proposed position</b>

1.6 Financial reports for the last five years: balance sheets, profit and loss statements, auditor’s reports, etc. List below and attach copies.

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1.7 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List below and attach copies of supportive documents.

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1.8 Name, address and telephone, telex and facsimile numbers of banks that may provide reference if contacted by Kenya Medical Supplies Authority

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1.9 Statement of compliance with the requirements of Clause 1.2 of the Instructions to Tenderers.

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2.0 Proposed program (work method and schedule) for the whole of the Works.

**3.0 Joint Ventures**

The information listed in 1.1 – 1.10 above shall be provided for each partner of the joint venture.

Attach the power of attorney of the signatory(ies) of the tender authorizing signature of the tender on behalf of the joint venture

Attach the Agreement among all partners of the joint venture ( and which is legally binding on all partners), which shows that:

- a) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;
- b) one of the partners will be nominated as being in charge, authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture; and
- c) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

**Bidder's Signature:** -----**Official Stamp** -----

**Date:** -----

## **TENDER QUESTIONNAIRE**

Please fill in block letters.

1. Full names of tenderer

---

2. Full address of tenderer to which tender correspondence is to be sent (unless an agent has been appointed below)

---

3. Telephone number (s) of tenderer

---

4. Facsimile number of tenderer

---

5. Name of tenderer's representative to be contacted on matters of the tender during the tender period

---

6. Details of tenderer's nominated agent (if any) to receive tender notices. This is essential if the tenderer does not have his registered address in Kenya (name, address, telephone, telex)

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Signature of Tenderer

### CONFIDENTIAL BUSINESS QUESTIONNAIRE FORM

You are requested to give the particulars indicated in Part 1; either Part 2(a), 2(b) or 2 (c) whichever applies to your type of business; and Part 3.

***You are advised that it is a serious offence to give false information on this form.***

<b>Part 1 – General</b>																									
1.1	Business Name .....																								
1.2	Location of Business Premises. ....																								
1.3	Plot No..... Street/Road ..... Postal Address ..... Tel No. .... Fax ..... E mail .....																								
1.4	Nature of Business ,.....																								
1.5	Registration Certificate No.....																								
1.6	Maximum Value of Business which you can handle at any one time – Kshs.....																								
1.7	Name of your Bankers ..... Branch .....																								
<b>Part 2 (a) – Sole Proprietor</b>																									
2a.1	Your Name in Full ..... Age .....																								
2a.2	Nationality ..... Country of Origin ..... • Citizenship Details .....																								
<b>Part 2 (b) Partnership</b>																									
2b.1	Given details of Partners as follows:																								
2b.2	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Name</u></th> <th style="text-align: left;"><u>Nationality</u></th> <th style="text-align: left;"><u>Citizenship Details</u></th> <th style="text-align: left;"><u>Shares</u></th> </tr> </thead> <tbody> <tr> <td>1.....</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.....</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3.....</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4.....</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	<u>Name</u>	<u>Nationality</u>	<u>Citizenship Details</u>	<u>Shares</u>	1.....				2.....				3.....				4.....							
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1.....																									
2.....																									
3.....																									
4.....																									
<b>Part 2 (c) – Registered Company</b>																									
2c.1	Private or Public .....																								
2c.2	State the Nominal and Issued Capital of Company- Nominal Kshs. .... Issued Kshs. ....																								
2c.3	Given details of all Directors as follows <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Name</u></th> <th style="text-align: left;"><u>Nationality</u></th> <th style="text-align: left;"><u>Citizenship Details</u></th> <th style="text-align: left;"><u>Shares</u></th> </tr> </thead> <tbody> <tr> <td>1.....</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.....</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3.....</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4.....</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5.....</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	<u>Name</u>	<u>Nationality</u>	<u>Citizenship Details</u>	<u>Shares</u>	1.....				2.....				3.....				4.....				5.....			
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1.....																									
2.....																									
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5.....																									

**Part 3 – Eligibility Status**

3.1 Are you related to an Employee, Committee Member or Board Member of Kenya Medical Supplies Authority ? Yes \_\_\_\_\_ No \_\_\_\_\_

3.2 If answer in ‘3.1’ is **YES** give the relationship.  
.....  
.....  
.....

3.3 Does an Employee, Committee Member, Board Member of Kenya Medical Supplies Authority sit in the Board of Directors or Management of your Organization, Subsidiaries or Joint Ventures? Yes \_\_\_\_\_ No \_\_\_\_\_

3.4 If answer in ‘3.3’ above is **YES** give details.  
.....  
.....  
.....

3.5 Has your Organization, Subsidiary Joint Venture or Sub-contractor been involved in the past directly or indirectly with a firm or any of it’s affiliates that have been engaged by Kenya Medical Supplies Authority to provide consulting services for preparation of design, specifications and other documents to be used for procurement of the goods under this invitation? Yes \_\_\_\_\_ No \_\_\_\_\_

3.6 If answer in ‘3.5’ above is **YES** give details.  
.....  
.....  
.....

3.7 Are you under a declaration of ineligibility for corrupt and fraudulent practices? YES \_\_\_\_\_ No \_\_\_\_\_

3.8 If answer in ‘3.7’ above is **YES** give details:  
.....  
.....  
.....

3.9 Have you offered or given anything of value to influence the procurement process? Yes \_\_\_\_\_ No \_\_\_\_\_

3.10 If answer in ‘3.9’ above is **YES** give details  
.....  
.....  
.....

I DECLARE that the information given on this form is correct to the best of my knowledge and belief.

Date ..... Signature of Candidate

- If a Kenya Citizen, indicate under “Citizenship Details” whether by Birth, Naturalization or registration.

## **DECLARATION OF UNDERTAKING (INTEGRITY STATEMENT)**

### ***Anti – Corruption Policy in the Procurement Process***

#### **Undertaking By Bidder On Anti – Corruption Policy / Code of Conduct And Compliance Program**

The governments of Kenya is committed to fighting corruption in all its forms and in all its institutions to ensure that all the government earned revenues are utilized prudently and for the purpose intended with a view to promoting economic development as the country work towards actualizing Vision 2030.

Here at KEMSA and also being one of the government entities mandated under the government Legal Notice number 466 of 2004 to procure, warehouse and distribute Essential Medicines and Medical Supplies to all the public health facilities in Kenya, on behalf of the government, we are highly committed to fighting any form of corruption in our organization to ensure that all the monies that the government entrust with us, is optimally and prudently utilized for the benefits of all the people we serve.

**The following is a requirement that every Bidder wishing to do business with KEMSA must comply with:**

- (1) Each bidder must submit a statement, as part of the tender documents, in the format given and which must be signed personally by the Chief Executive Officer or other appropriate senior corporate officer of the bidding company and, where relevant, of its subsidiary in Kenya. If a tender is submitted by a subsidiary, a statement to this effect will also be required of the parent company, signed by its Chief Executive Officer or other appropriate senior corporate officer.
- (2) Bidders will also be required to submit similar No-bribery commitments from their subcontractors and consortium partners; the bidder may cover the subcontractors and consortium partners in its own statement, provided the bidder assumes full responsibility.
- (3) a) Payment to agents and other third parties shall be limited to appropriate compensation for legitimate services.
  - b) Each bidder will make full disclosure in the tender documentation of the beneficiaries and amounts of all payments made, or intended to be made, to agents or other third parties (including political parties or electoral candidates) relating to the tender and, if successful, the implementation of the contract.
  - c) The successful bidder will also make full disclosure [quarterly or semi- annually] of all payments to agents and other third parties during the execution of the contract.
  - d) Within six months of the completion of the performance of the contract, the successful bidder will formally certify that no bribes or other illicit commissions have been paid. The final accounting shall include brief details of the goods and services provided that are sufficient to establish the legitimacy of the payments made.



- e) Statements required according to subparagraphs (b) and (d) of this paragraph will have to be certified by the company's Chief Executive Officer, or other appropriate senior corporate officer.
- (4) Tenders which do not conform to these requirements shall not be considered.
- (5) If the successful bidder fails to comply with its No-bribery commitment, significant sanctions will apply. The sanctions may include all or any of the following:
  - a) Cancellation of the contract;
  - b) Liability for damages to the public authority and/or the unsuccessful competitors in the bidding possibly in the form of a lump sum representing a pre-set percentage of the contract value (liquidated).
- (6) Bidders shall make available, as part of their tender, copies of their anti-Bribery Policy/Code of Conduct, if any, and of their-general or project - specific - Compliance Program.
- (7) The Government of Kenya through Kenya Anti-Corruption Commission has made special arrangements for adequate oversight of the procurement process and the execution of the contract. Those charged with the oversight responsibility will have full access if need be to all documentation submitted by Bidders for this contract, and to which in turn all Bidders and other parties involved or affected by the project shall have full access (provided, however, that no proprietary information concerning a bidder may be disclosed to another bidder or to the public).

**1. MEMORANDUM ( FORMAT )**

(Clause 41, 62 and 66 of Kenya Public Procurement and Asset Disposal Act 2015)

This company \_\_\_\_\_(name of company) has issued, for the purposes of this tender, a Compliance Program copy attached -which includes all reasonable steps necessary to assure that the No-bribery commitment given in this statement will be complied with by its managers and employees, as well as by all third parties working with this company on the public sector projects or contract including agents, consultants, consortium partners, subcontractors and suppliers'")"

Authorized Signature: \_\_\_\_\_

Name and Title of Signatory: \_\_\_\_\_

**NON - DEBARMENT DECLARATION**

We (*insert the name of the company / supplier*) -----declares and guarantees that no director, sub-contractor or any person who has any controlling interest in our organization has been debarred from participating in a procurement proceeding.

Name .....Signature.....Date .....

Company Seal / Business Stamp

**SITE VISIT DECLARATION FORM**

**PROPOSED CONSTRUCTION OF KEMSA WAREHOUSE AND OFFICE BLOCK**

I/We.....of.....  
do hereby declare that I/We have visited the site in the company of the below mentioned consultant and fully understand the scope and sequence of works.

**COMPANY REPRESENTATIVE**

NAME: .....

DESIGNATION: .....

Date .....

**OFFICIAL STAMP**

**KEMSA REPRESENTATIVE**

NAME:.....

SIGNATURE:.....

DATE:.....

**OFFICIAL STAMP**

Signed .....

Date .....

**TENDER SECURITY FORM**  
(Amend accordingly if provided by Insurance Company)

Whereas .....[name of the tenderer]

(hereinafter called “the tenderer”)has submitted its tender dated.....[date of submission of tender ] for the provision of .....

[name and/or description of the services]

(hereinafter called “the Tenderer”).....

KNOW ALL PEOPLE by these presents that WE.....

of.....having registered office at

[name of Procuring Entity](hereinafter called “the Bank”)are bound unto.....

[name of Procuring Entity](hereinafter called “the Procuring Entity”) in the sum of .....

for which payment well and truly to be made to the said Procuring Entity, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this \_\_\_\_\_ day of 20\_\_\_\_\_.

THE CONDITIONS of this obligation are:

1. If the tenderer withdraws its Tender during the period of tender validity specified by the tenderer on the Tender Form; or
2. If the tenderer, having been notified of the acceptance of its Tender by the PROCURING ENTITY during the period of tender validity:

- (a) fails or refuses to execute the Contract Form, if required; or
- (b) fails or refuses to furnish the performance security, in accordance with the instructions to tenderers;

we undertake to pay to the Procuring Entity up to the above amount upon receipt of its first written demand, without the Procuring Entity having to substantiate its demand, provided that in its demand the Procuring Entity will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including thirty (30) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the above date.

[signature of the bank]

**DETAILS OF SUB-CONTRACTORS**

If the Tenderer wishes to sublet any portions of the Works under any heading, he must give below details of the sub-contractors he intends to employ for each portion.

Failure to comply with this requirement may invalidate the tender.

(1) Portion of Works to be sublet: .....

(i) Full name of Sub-contractor  
and address of head office: .....  
.....  
.....

(ii) Sub-contractor’s experience  
of similar works carried out  
in the last 3 years with  
Contract value:.....  
.....  
.....

(2) Portion of Works to sublet:  
.....

(i) Full name of Sub-contractor  
and address of head office: .....  
.....  
.....

(ii) Sub-contractor’s experience  
of similar works carried out  
in the last 3 years with  
contract value: .....  
.....  
.....

\_\_\_\_\_  
[Signature of Tenderer]

\_\_\_\_\_  
Date

**BANK GUARANTEE FOR ADVANCE PAYMENT FORM**

To .....

Gentlemen and/or Ladies:

In accordance with the payment provision included in the special conditions of contract, which amends the general conditions of contract to provide for advance payment,

.....

[name and address of tenderer][hereinafter called “the tenderer”] shall deposit with the Procuring entity a bank guarantee to guarantee its proper and faithful performance under the said clause of the contract in an amount of ..... [amount of guarantee in figures and words].

We, the..... [bank or financial institution], as instructed by the tenderer, agree unconditionally and irrevocably to guarantee as primary obligator and not as surety merely, the payment to the Procuring entity on its first demand without whatsoever right of objection on our part and without its first claim to the tenderer, in the amount not exceeding.....[amount of guarantee in figures and words].

We further agree that no change or addition to or other modification of the terms of the Contract to be performed thereunder or of any of the Contract documents which may be made between the Procuring entity and the tenderer, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition, or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment received by the tenderer under the Contract until [date].

Yours truly,

Signature and seal of the Guarantors \_\_\_\_\_

[name of bank or financial institution]

\_\_\_\_\_  
[address]

\_\_\_\_\_  
[date]

**PERFORMANCE SECURITY FORM**

To: .....

WHEREAS.....  
.....[name of tenderer]

(hereinafter called “the tenderer”) has undertaken, in pursuance of Contract No. \_\_\_\_\_ [reference number of the contract] dated \_\_\_\_\_ 20\_\_\_\_ to supply.....

[Description services](Hereinafter called “the contract”)

AND WHEREAS it has been stipulated by you in the said Contract that the tenderer shall furnish you with a bank guarantee by a reputable bank for the sum specified therein as security for compliance with the Tenderer’s performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the tenderer a guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the tenderer, up to a total of .....  
..... [amount of the guarantee in words and figures],  
and we undertake to pay you, upon your first written demand declaring the tenderer to be in default under the Contract and without cavil or argument, any sum or sums within the limits of .....  
.....[amount of guarantee] as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the \_\_\_\_ day of 20\_\_\_\_

Signature and seal of the Guarantors

\_\_\_\_\_

*[name of bank or financial institution]*

\_\_\_\_\_

*[address]*

\_\_\_\_\_ [date]

## **METHOD STATEMENT**

The Tenderer is required to give a brief description herebelow of how the tenderer plans to execute the works (The tenderer may add more pages if required).



**STATEMENT OF FOREIGN CURRENCY REQUIREMENTS**

(See Clause 23] of the Conditions of Contract)

In the event of our Tender for the execution of \_\_\_\_\_  
\_\_\_\_\_ (*name of Contract*) being accepted, we would require in  
accordance with Clause 21 of the Conditions of Contract, which is attached hereto, the  
following percentage:

(Figures)..... (Words).....

of the Contract Sum, (Less Fluctuations) to be paid in foreign currency.

Currency in which foreign exchange element is required:

.....

Date: The ..... Day of ..... 20.....

Enter 0% (zero percent) if no payment will be made in foreign currency.

Maximum foreign currency requirement shall be \_\_\_\_\_(percent) of the Contract  
Sum, less Fluctuations.

\_\_\_\_\_  
(Signature of Tenderer)

**LETTER OF NOTIFICATION OF AWARD**

To: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RE: Tender No. \_\_\_\_\_

Tender Name \_\_\_\_\_

This is to notify that the contract/s stated below under the above mentioned tender have been awarded to you.

\_\_\_\_\_  
\_\_\_\_\_

1. Please acknowledge receipt of this Letter of Notification signifying your Acceptance.
2. The Contract/contracts shall be signed by the parties within 30 days of the date of this letter but not earlier than 14 days from the date of the letter.
3. You may contact the officer whose particulars appear below on the subject matter of this Letter of Notification of Award.

.....  
**The Chief Executive Officer**  
**Kenya Medical Supplies Authority**  
**P. O. Box 47715 – 00100**  
**NAIROBI.**

FOR: .....

**LETTER OF ACCEPTANCE**  
*[letterhead paper of the Employer]*

\_\_\_\_\_ *[date]*

TO: \_\_\_\_\_ (Contractor)

P. O. BOX: \_\_\_\_\_  
\_\_\_\_\_

Dear Sir,

This is to notify you that your Tender dated \_\_\_\_\_  
for the execution of \_\_\_\_\_

*[Name of the Contract and identification number, as given in the Tender documents]* for  
the Contract Price of Kshs. \_\_\_\_\_ *[amount in figures]* [Kenya Shillings

\_\_\_\_\_ *(amount in words)*

in accordance with the Instructions to Tenderers is hereby accepted.

You are hereby instructed to proceed with the execution of the said Works in accordance  
with the Contract documents.

Authorized Signature: .....

Name and Title of Signatory: .....

**FORM OF AGREEMENT**

THIS AGREEMENT, made the \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_ between **KENYA MEDICAL SUPPLIES AUTHORITY** of [or whose registered office is situated at] ..... (hereinafter called “the Procurement Entity”) of the one part AND

\_\_\_\_\_ of [or whose registered office is situated at] \_\_\_\_\_ (hereinafter called “the Contractor”) of the other part.

WHEREAS THE Procurement Entity is desirous that the Contractor executes

\_\_\_\_\_ (name and identification number of Contract ) (hereinafter called “the Works”) located at \_\_\_\_\_ [Place/location of the Works] and the Procurement Entity has

accepted the tender submitted by the Contractor for the execution and completion of such Works and the remedying of any defects therein for the Contract Price of

Kenya Shillings \_\_\_\_\_ [Amount in figures],

Kenya Shillings \_\_\_\_\_ [Amount in words].

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and shall be read and construed as part of this Agreement i.e.
  - (i) Letter of Acceptance
  - (ii) Form of Tender
  - (iii) Conditions of Contract Part I
  - (iv) Conditions of Contract Part II and Appendix to Conditions of Contract

- (v) Specifications
- (vi) Drawings
- (vii) Priced Bills of Quantities

3. In consideration of the payments to be made by the Procurement Entity to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Procurement Entity to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
4. The Procurement Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The common Seal of \_\_\_\_\_

Was hereunto affixed in the presence of \_\_\_\_\_

Signed Sealed, and Delivered by the said \_\_\_\_\_

Binding Signature of the Procurement Entity

\_\_\_\_\_

Binding Signature of Contractor \_\_\_\_\_

In the presence of (i) Name \_\_\_\_\_

Address \_\_\_\_\_

Signature \_\_\_\_\_

(ii) Name \_\_\_\_\_

Address \_\_\_\_\_

Signature \_\_\_\_\_

**CONTRACT FORM**

THIS AGREEMENT made the \_\_\_ day of \_\_\_\_ 20\_\_\_ between..... [name of Procuring Entity] of .....[country of Procuring Entity] (hereinafter called “the Procuring entity”) of the one part and .....[name of tenderer] of .....[city and country of tenderer] (hereinafter called “the tenderer”) of the other part.

WHEREAS the procuring entity invited tenders for certain materials and spares. viz.....[brief description of materials and spares] and has accepted a tender by the tenderer for the supply of those materials and spares in the sum of .....[contract price in words and figures].

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
  - (a) the Tender Form and the Price Schedule submitted by the tenderer;
  - (b) the Schedule of Requirements;
  - (c) the Technical Specifications;
  - (d) the General Conditions of Contract;
  - (e) the Special Conditions of Contract; and
  - (f) the Procuring entity’s Notification of Award.
3. In consideration of the payments to be made by the Procuring entity to the tenderer as hereinafter mentioned, the tenderer hereby covenants with the Procuring entity to provide the materials and spares and to remedy defects therein in conformity in all respects with the provisions of the Contract
4. The Procuring entity hereby covenants to pay the tenderer in consideration of the provision of the materials and spares and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, sealed, delivered by \_\_\_\_\_ the \_\_\_\_\_ (for the Procuring entity)

Signed, sealed, delivered by \_\_\_\_\_ the \_\_\_\_\_ (for the tenderer)

in the presence of \_\_\_\_\_

**FORM RB 1**

**REPUBLIC OF KENYA**

**PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD**

APPLICATION NO.....OF.....20.....

BETWEEN

.....APPLICANT

AND

.....RESPONDENT (*Procuring Entity*)

Request for review of the decision of the..... (*Name of the Procuring Entity*) of  
.....dated the...day of .....20.....in the matter of Tender No.....of  
.....20.....

**REQUEST FOR REVIEW**

I/We.....,the above named Applicant(s), of address: Physical  
address.....Fax No.....Tel. No.....Email ....., hereby request the Public  
Procurement Administrative Review Board to review the whole/part of the above mentioned  
decision on the following grounds , namely:-

By this memorandum, the Applicant requests the Board for order/orders that: -

- 1.
- 2.
- etc

SIGNED .....(Applicant)

Dated on.....day of ...../...20.....

---

**FOR OFFICIAL USE ONLY**

Lodged with the Secretary Public Procurement Administrative Review Board on .....  
day of .....20.....

SIGNED  
Board Secretary

**SECTION B**

**CONDITIONS OF**

**SUB-CONTRACT AGREEMENT**



## **CONDITIONS OF CONTRACT**

## **SUB-CONTRACT AGREEMENT (KABCEC)**

**AGREEMENT AND CONDITIONS  
OF SUB-CONTRACT FOR  
BUILDING WORKS**



**Published by:**  
**The Kenya Association of Building and  
Civil Engineering Contractors**  
with the sanction of:  
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and  
The Architectural Association of Kenya

**June 2002 Edition**

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Contractors.

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**ORIGINAL**  
embossed stamp

**COUNTERPART**  
embossed stamp

**1.0 AGREEMENT**

1.1 This agreement is made on .....  
between .....  
of (or whose registered office is situated at) .....  
.....  
(hereinafter called “the Contractor”) of the one part .....  
and .....  
of (or whole registered office is situated at) .....  
.....  
(hereinafter called “the Sub-Contractor”) of the other part:

1.2 SUPPLEMENTAL to an agreement(hereinafter referred to as the “the main contract”)  
made on .....  
Between .....  
.....  
(hereinafter called “the Employer”) of the one part and the Contractor of the other part based on the Agreement and Conditions of Contract for Building Works, published by the Joint Building Council, Kenya .....  
..... edition.

1.3 WHEREAS the contractor is desirous of sub-letting to the Sub-Contractor  
.....  
.....  
.....

hereinafter called “the sub-contractor works” at.....

on Land Reference No.....being part of the main contract works.

- 1.4 And whereas the Sub-contractor has supplied the Contractor with a priced copy of the bills of quantities (hereinafter referred to as “the sub-contractor bills”), where applicable, which together with the drawings numbered.....

.....  
(hereinafter referred to as “the sub-contract drawings), the specifications and the conditions of sub-contract have been signed by or on behalf of the parties thereto.

And whereas the Sub-Contractor has had reasonable opportunity of inspecting the main contract or a copy thereof except the detailed prices of the Contractor included in the bills of quantities or schedule of rates.

- 1.5 And whereas the Architect, with the approval of the Employer, has nominated the Sub-Contractor to carry out the works described at clause 1.3 herein:

**NOW IT IS HEREBY AGREED AS FOLLOWS:**

- 1.6 For the consideration herein stated, the Sub-Contractor shall upon and subject to the conditions annexed hereto carry out and complete the sub-contract works shown upon the sub-contract drawings and described by or referred to in the sub-contract bills, specifications and in the said conditions.

- 1.7 The Contractor shall pay the Sub-Contractor the sum of the Kshs (in words).....

.....  
.....Kshs.....)  
(hereinafter referred to as “the sub-contractor price”) or such sum as shall become payable hereinafter at the times and in manner specified in the said conditions.

- 1.8 The term ‘Architect’, ‘Quantity Surveyor’ and ‘Engineer’, where applicable, shall refer to the persons appointed by the Employer to administer the sub-contract in accordance with the main contract agreement. Where applicable reference to the Project Manager shall be deemed to include reference to the Engineer.

- 1.9 In the event of the need to appoint a replacement Architect, Quantity Surveyor, Engineer or other specialist (whether named in this agreement or not) the Employer shall make such appointment as soon as practicable after the need for such appointment arises and shall communicate the appointment to the Sub-Contract through the Contractor.

- 1.10 Where the sub-contract does not incorporate bills of quantities, the term “sub-contract bills” and “bills of quantities” wherever appearing shall be deemed deleted and replaced with the term “schedule of rates” as applicable.
- 1.11 The terms defined in the main contract shall have the same meaning in this sub-contract as that assigned to them therein.
- 1.12 AS WITNESS the hands of the said parties;

Signed by the said

.....(Contractor)

In the presence of

Name .....

Address .....

Signed by the said

.....(Sub-Contractor)

In the presence of

Name .....

Address .....



## **CONDITIONS OF SUB-CONTRACT**

### **2.0 GENERAL OBLIGATIONS OF THE CONTRACTOR**

#### **The Contractor shall:**

- 2.1 Timeously obtain from the Project Manager on behalf of the Sub-Contractor all drawings, necessary details, instructions and other information required by the Sub-Contractor for the proper carrying out of the sub-contract works.
- 2.2 Provide all such facilities and attend upon the Sub-Contractor as required and as provided in the specifications, bills of quantities and these conditions to the extent compatible with the provisions of the main contract
- 2.3 Observe, perform and comply with all the provisions of the main contract and of this sub-contract on the part of the Contractor to be observed, performed and complied with to ensure satisfactory completion of the sub-contract works.

### **3.0 GENERAL OBLIGATIONS OF THE SUB-CONTRACTOR**

- 3.1 The Sub-Contractor shall be deemed to have notice of all the provisions of the main contract except the detailed prices of the Contractor included in the bills of quantities or in the schedule of rates.
- 3.2 The Sub-Contractor shall carry out and complete the sub-contract works in accordance with this sub-contract and in all respects to the reasonable satisfaction of the Contractor and of the Project Manager and in conformity with all reasonable directions and requirements of the Contractor regulating the due carrying out of the contract works.
- 3.3 The Sub-Contractor shall observe, perform and comply with all the provisions of the main contract on the part of the Sub-Contractor to be observed, performed and complied with so far as they relate and apply to the sub-contract works or any portion thereof and are not inconsistent with the expressions of this sub-contract as if all the same were set out herein.
- 3.4 Without prejudice to the generality of the foregoing requirements, the Sub-Contractor shall especially observe perform and comply with the provisions in the main contract as they apply to the sub-contract works

### **4.0 SUB-CONTRACT DOCUMENTS**

- 4.1 The sub-contract documents for use in the carrying out of the sub-contract works shall be:-
  - 4.1.1 The agreement and these conditions
  - 4.1.2 The sub-contract drawings as listed in the agreement
  - 4.1.3 The sub-contract bill of quantities or schedule of rates as applicable
  - 4.1.4 The specifications as separately supplied or as contained in the sub-contract bills.

- 4.2 Upon the execution of the sub-contract, the Contractor shall register the agreement with the relevant statutory authority and pay all fees, charges, taxes, duties and all costs arising therefrom.
- 4.3 The manner of supplying contract documents, their custody, display on site and their interpretation in the event of discrepancies shall be as provided in the main contract in respect of the main contract documents with the necessary amendments made to refer to the sub-contract.

## **5.0 GENERAL LIABILITY OF THE SUB-CONTRACTOR**

- 5.1 The Sub-Contractor shall be liable for and shall indemnify the Contractor against and from:
  - 5.1.1 Any breach, non-observance or non-performance by the Sub-Contractor, his servants or agents of any of the said provisions of the main contract and of this sub-contract.
  - 5.1.2 Any act or omission of the Sub-Contractor, his servants or agents which involve the Contractor in any liability to the Employer under the main contract
  - 5.1.3 Any claim, damage, loss or expense due to or resulting from any negligence or breach of duty on the part of the Sub-Contractor, his servants or agents.
  - 5.1.4 Any loss or damage resulting from any claim under any statute or common law by an employee of the Sub-Contractor in respect of personal injury or death arising out of or in the course of his employment.
- 5.2 Provided that nothing contained in this sub-contract shall impose any liability on the Sub-Contractor in respect of any negligence or breach of duty on the part of the Employer, the Contractor, other sub-contractors or their respective servants or agents nor create any privity of contract between the Sub-Contractor and the Employer or any other sub-contractor.

## **6.0 INSURANCE AGAINST INJURY TO PERSONS AND PROPERTY**

- 6.1 Without prejudice to his liability to indemnify the Contractor under clause 5.0 above, the Sub-Contractor shall maintain:-
  - 6.1.1 Such insurances as are necessary to cover the liability of the Sub-Contractor in respect of injury or damage to property including damage to the works arising out of or in the course of or by reason of the carrying out of the sub-contract works except for liability against the contingencies specified at clause 6.3 herein.
  - 6.1.2 The insurances required under sub clause 6.1.1 above shall be placed with insurers approved by the Contractor and the Architect.
- 6.2 Notwithstanding the provisions of clause 23.0 of these conditions, the Contractor shall not be obliged to make payments to the Sub-Contractor before the said policies have been provided.
- 6.3 Where clause 30 of the main contract applies, the sub-contract works, including materials and goods of the sub-Contractor delivered to the works, shall as regards loss or damage by the contingencies stated at clause 30 therein, namely, fire, earthquake, fire following earthquake, lightning, explosion, storm, tempest, flood, bursting or overflowing of water tanks, apparatus or pipes, aircraft and other aerial devices or articles dropped therefrom, riot and civil commotion, be at the sole risk of the contractor. The Contractor shall cover his liability for the works by procuring insurances as required in the said clause.

- 6.4 Where clause 30 or the main contract applies, the sub-contract works, including materials and goods of the Sub-Contractor delivered to the works shall, as regards loss or damage by the contingencies stated therein be at the sole risk of the Employer. The Employer shall cover his liability for the works by procuring insurances as required in the said clause.
- 6.5 The Sub-Contractor shall observe and comply with the conditions contained in the policy or policies of insurance of the Contractor or of the Employer, as the case may be, as regards loss or damage which may be caused by the stated contingencies. For this purpose, the Contractor or the Employer as the case may be, shall avail the said policies to the Sub-Contractor for his perusal.
- 6.6 If any loss or damage affecting the sub-contract works or any part thereof or any unfixed goods or materials is occasioned by any one or more of the said contingencies, then,
- 6.6.1 The occurrence of such loss or damage shall be disregarded in computing any amounts payable to the Sub-Contractor under the sub-contract, and
- 6.6.2 The Sub-Contractor shall, with due diligence, restore the work damaged, replace or repair any unfixed materials or goods which have been destroyed or damaged, remove and dispose of any debris and proceed with the carrying out and completion of the sub-contract works.
- 6.6.3 The restoration of work damaged the replacement and repair of unfixed materials and goods and the removal of debris shall be deemed to be a variation required by the Architect. Such work shall be paid for in accordance with clause 30.0 of the main contract.

## **7.0 PERFORMANCE BOND**

Before commencing the works, the Sub-Contractor shall provide one surety who must be an established bank or insurance company to the approval of the Contractor and who will be bound to the Contractor in the sum equivalent to five per cent (5%) of the sub-contract price for the due performance of the sub-contract until the certified date of practical completion. Notwithstanding the provisions of clause 23.0 of these conditions, no payments shall be made to the Sub-Contractor before the said bond is provided.

## **8.0 POSSESSION OF SITE AND COMMENCEMENT OF WORKS**

- 8.1 Within the period stated in the appendix to these conditions, the Contractor shall give possession of the site works to the Sub-Contractor and such access as may be necessary to enable the Sub-Contractor to commence and proceed with the sub-contract works in accordance with the sub-contract.
- 8.2 On or before the date for commencement of works stated in the appendix to these conditions, the Sub-Contractor shall commence the carrying out of the sub-contract works and shall proceed regularly and diligently with the same in accordance with the sub-contract program, the main contract program and or with the progress of the main contract works and complete on or before the date stated in the appendix to these conditions as the date for practical completion or within any extended time granted under clause 25.0 of these conditions.

## **9.0 PROJECT MANAGERS INSTRUCTIONS**

- 9.1 The Sub-Contractor shall forthwith comply with all the instructions issued to him by the Project manager, either directly or through the Contractor, in regard to any matter in respect of which the Project Manager is expressly empowered by the main contract conditions to issue instructions.
- 9.2 The manner of complying with or querying the validity of Project manager's instruction shall be as provided in clause 16.0 of the main contract. The Project manager shall not be obliged to carry our instructions not issued in the manner provided therein.

## **10.0 VARIATIONS**

- 10.1 The term "variation" shall have the meaning assigned to it at clause 22.0 of the main contract.
- 10.2 The valuation of variations shall be made by the Quantity Surveyor in accordance with sub-clause 22.0 of the main contract.
- 10.3 Effect shall be given to the measurement and valuation of variations in interim certificates and by the adjustment of the sub-contract price.

## **11.0 LIABILITY FOR OWN EQUIPMENT**

The construction equipment and other property belonging to or provided by the Sub-Contractor and brought onto the site for carrying out the works shall be at the sole risk of the Sub-Contractor. Any loss or damage to the same or caused by the same shall, except for any loss or damage due to any negligence, omission or default of the Contractor, be at the sole risk of the Sub-Contractor who shall indemnify the Contractor against loss, damage or claims in respect thereof. Insurance against any such loss, damage or claims shall be the sole responsibility of the Sub-Contractor.

## **12.0 PROVISION OF FACILITIES BY THE CONTRACTOR**

- 12.1 Where provided in the main contract, the Contractor shall supply at his own cost all necessary water, lighting, electric power, telephones and security required for the sub-contract works. Where not so provided, the Sub-Contractor shall provide the said services at his own cost.
- 12.2 Except as otherwise provided in the main contract, the Sub-Contractor shall construct at his own expense all necessary workshops, stores, offices, workers' accommodation and other temporary buildings required for the carrying out of the works at such places on site as the Contractor shall identify. The Contractor undertakes to give the sub-Contractor the required space and all reasonable facilities for such construction. Upon practical completion of the works, the Sub-contractor shall remove the said facilities and reinstate disturbed surface to the satisfaction of the Contractor.
- 12.3 The Contractor shall provide, without charge, general attendance to the Sub-Contractor to facilitate the carrying out of the works which attendance shall include facilities for access to and movement within the site and sections or parts of the building or buildings where the sub-contract works are being carried out, the use of temporary roads, paths and access ways, sanitary and welfare facilities.

- 12.4 The Contractor shall permit the Sub-Contractor to use, without charge, at all reasonable times, any scaffolding and hoisting equipment belonging to or provided by the Contractor while it remains so erected upon the site. The use by the Sub-Contractor of any other equipment, facilities or services provided by the Contractor for the works shall be subject to private arrangements between the parties hereto and shall not be regulated by these conditions.
- 12.5 Provided that such use of the scaffolding and hoisting equipment shall be on the express condition that no warranty or other liability on the part of the Contractor shall be created or implied in regard to fitness, condition or suitability for the intended purpose except that the Sub-Contractor shall be liable for any damage caused thereto or thereby.
- 12.6 Where required, the Contractor shall provide the facilities, equipment and the like and carry out any necessary builder' works within a reasonable time of the request by the Sub-Contractor to enable timely performance of the sub-contract.

### **13.0 LIABILITY FOR OWN WORK**

- 13.1 The Contractor and the Sub-Contractor shall be liable for the due carrying out of their respective works in accordance with their respective contracts without causing damage or injury to the works of the other sub-contractors, and in particular:
- 13.2 Should the carrying out of the sub-contract works cause injury or damage to the main contract works, or to the work of the other sub-contractors, the Sub-contractor shall rectify the damage so caused at his own cost.
- 13.3 Should the carrying out of the main contract works cause damage or injury to the sub-contract works, the Contractor shall rectify the damage at his own cost.
- 13.4 If in the course of carrying out the sub-contract works, the Sub-Contractor is required to carry out work not included in his sub-contract by reason of any materials of workmanship not being in accordance with the main contract or with other sub-contracts, the Contractor shall reimburse the Sub-Contractor the expenses incurred therein.

### **14.0 CO-OPERATION IN USE OF FACILITIES**

- 14.1 The Contractor and the Sub-Contractor undertake to co-operate with each other and co-ordinate work arrangements and procedures required in carrying preventing interference, disruption or disturbance to the progress of the works or to the activities of other sub-contractors.
- 14.2 The Contractor and the Sub-Contractor undertake not to wrongfully use or interfere with equipment, scaffolding, appliances, ways, temporary works, temporary buildings and other property belonging to or provided by the other part or by other sub-contractors.
- 14.3 Provided that nothing contained in this clause shall prejudice or limit the rights of the Contractor or of the sub-Contractor in carrying out their respective statutory and or contractual duties under this sub-contract or under the main contract.

## **15.0 ASSIGNMENT AND SUBLETTING**

- 15.1 Neither the Contractor nor the Sub-Contractor shall, without the written consent of the other and the Employer, assign this sub-contract.
- 15.2 The Sub-Contractor shall not sub-let the whole of the works without the written consent of the Contractor and the Project manager.
- 15.3 Provided that any assignment and any sub-contracts as well as this sub-contract shall terminate immediately upon (for whatever reason) of the main contract.

## **16.0 WORK PRIOR TO APPOINTMENT OF CONTRACTOR**

- 16.1 Where the Sub-Contractor is appointed before the Contractor is appointed, any work done by the Sub-Contractor prior to the said appointment shall be treated as a separate contract between the Employer and the Sub-Contractor and shall be valued by the Quantity Surveyor and paid for directly by the Employer without the involvement of the Contractor.
- 16.2 Where the Sub-Contractor is appointed before the Contractor is appointed, the Sub-Contractor shall be permitted, when the identity of the Contractor is known and within 30 days thereof, to raise objections (on reasonable grounds) against entering into a sub-contract with the Contractor
- 16.3 Where work which is outside the sub-contract is ordered directly by Employer or the Architect, that work shall be treated as a separate contract between the Sub-Contractor and the Employer and shall be valued and paid for directly to the Sub-Contractor in accordance with sub-clause 16.1 herein without the involvement of the Contractor. The cost of equipment, facilities and the like provided by the Contractor to the Sub-contractor and any builder's work carried out by the Contractor with regard to such work shall be paid directly by the Sub-Contractor to the Contractor.

## **17.0 SUB-CONTRACTOR DESIGN**

Where the sub-contract includes a design component by the Sub-Contractor, the design shall be to the approval of the Project Manager and the Employer. Notwithstanding and approvals, the Sub-Contractor shall be liable directly to the Employer for any consequences of failure of the design to comply with the requirements of the Employer or to be fit or suitable for the purposes for which the sub-contract works or the relevant part thereof were intended.

## **18.0 SPECIFICATION OF GOODS, MATERIALS AND WORKMANSHIP**

- 18.1 All materials, goods and workmanship shall so far as procurable, be of the respective kinds and standards described in the sub-contract bills, specifications and drawings.
- 18.2 The provisions in the main contract regulating the procurement, specification and quality assurance of materials, processes and workmanship and the requirements of clause dealing with the provision of samples and the carrying out of specified tests shall apply to the sub-contract in the same manner as they apply to the main contract.

## **19.0 COMPLIANCE WITH STATUTORY AND OTHER REGULATIONS**

The Sub-Contract shall comply with all statutory and other regulations of competent authorities regulating the carrying out of the works in accordance with the provisions in the main contract, as applicable.

## **20.0 ROYALTIES AND PATENT RIGHTS**

20.1 All royalties or other sums payable in respect of the supply and use of any patented articles, processes or inventions in carrying out the works as described by or referred to in the sub-contract bills, specifications or drawings shall be deemed to have been included in the sub-contract price.

20.2 The provision of clause in of the main contract dealing with the same shall apply to the sub-contract in the same manner as they apply to the main contract.

## **21.0 ANTIQUITIES AND OTHER OBJECTS OF VALUE**

All fossils, antiquities and other objects of interest or value which may be found on the site or in excavating the same during the progress of the sub-contract shall be dealt with in accordance with the provisions of the main contract.

## **22.0 SUSPENSION OF WORKS**

22.1 An instruction by the Project Manager to postpone or suspend the works under clause 28.0 of the main contract shall have the same effect on the sub-contract works as it has on the main contract works.

22.2 If the suspension arises due to default by the contractor and the sub-contract works are adversely effected by the suspension, the sub-contractor shall be entitled to reimbursement by the contractor of all expenses arising therefrom.

22.3 If the suspension arises due to default by the sub-contractor, the sub-contractor shall be liable to the contractor for all expenses arising therefrom.

22.4 A notice by the contractor to suspend the works under clause 29.0 of the main contract shall have the same effect on the sub-contract works as it has on the main contract works.

22.5 Should the sub-contract works be adversely affected by suspension under clause in the main contract, the sub-contractor shall be entitled to the remedies provided for at clauses 25.0 and 26.0 of this sub-contract.

## **23.0 PAYMENTS**

23.1 Procedures for originating and processing applications for payments and payment certificates as regards the sub-contract works shall be the same as those prescribed for the Contractor in the main contract at clause 34.0. references therein to the contractor shall be deemed to include references to the Sub-contractor.

23.2 Before submitting an application for payment to the Quantity Surveyor in accordance with clause 34.1 of the main contract, the Contractor shall give the Sub-Contractor a notice of not less than 7 days to submit the details of the amounts, which the Sub-Contractor considers himself entitled to for the relevant period. Such details, when received, shall be annexed to the said Contractor's application.

23.3 Where it is necessary to measure the sub-contract works for purpose of interim valuation or for the preparation of the final account, the Quantity Surveyor shall give the Sub-Contractor a reasonable opportunity to be present at the time of the measurements and to take notes and measurements as he may require.

- 23.4 Neither the Quantity Surveyor nor the Project Manager shall be bound to issue a valuation or a payment certificate in respect of the sub-contract works, as the case may be, whose value is less than the amount stated in the appendix to these conditions as the minimum amount of a payment certificate before the issue of the certificate of practical completion of the main contract or of the sub-contract, as applicable.
- 23.5 Provided that where the minimum amount of a certificate inserted in the appendix to these conditions has been achieved but the corresponding minimum inserted in the appendix to the main contract in respect of the Contractor's work has not been achieved, or the Contractor has not applied for payment within the stated period, the Project Manager may with the consent of the Contractor, issue a payment certificate directly to the Sub-Contractor for payment by the Employer.
- 23.6 Within 7 days of receipt by the Contractor of payment by the Employer, the Contractor shall notify and pay to the Sub-Contractor the total value certified therein in respect of the sub-contract works less the portion of the retention money attributable to the sub-contract works and less amounts previously paid to the Sub-Contractor.
- 23.7 Where certificates are not paid by the Employer within the prescribed period, the Sub-Contractor shall be entitled to be paid by the Contractor, upon receipt of payment from the Employer, the interest certified for the delay in accordance with sub-clause 34.6 of the main contract in respect of the portion of the sub-contract works included in the certificate.
- 23.8 a) Payment will be made through certificates direct to the subcontractor. All the subcontractors valuations claim must done through the main contractor and subsequently forwarded to the consultants . All payments will be less retention as specified in the Main Contract. No payment will become due until materials are delivered to site.
- b) In case, the Contractor has received payment from the Employer but has not released the appropriate amount to the Sub-Contractor within the stated period, the Contractor shall pay to the Sub-Contractor in addition to the amount not paid, simple interest on the unpaid amount for the period it remains unpaid at the commercial bank lending rate in force during the period of default.
- 23.9 If, upon application by the Sub-Contractor and Project Manager agree, or if the Contractor fails to make payment to the Sub-Contractor in accordance with sub-clause 23.6 herein and continues such default for 14 days thereafter, the Project Manager may issue a payment certificate directly to the Sub-Contractor for payment by the Employer, where applicable, and deduct the amount from subsequent payment to the Contractor.
- 23.10 Upon the issue of the certificate of practical completion and the release of one half of the total amount of the retention of money to the Contractor, the Contractor shall pay the portion attributable to the sub-contract to the Sub-Contractor within 7 days of receipt of the payment.
- 23.11 Upon the issue of the certificate of rectification of defects and receipt of the balance of the retention money by the Contractor, the Contractor shall pay the balance of the portion of the retention money attributable to the sub-contract to the Sub-Contractor within 7 days of receipt of the payment.
- 23.12 The sub-contract final account shall be agreed between the Sub-Contractor, the Contractor, the Quantity Surveyor and the Project Manager and shall be annexed to the Contractor's final accounts which shall be agreed as provided for in the main contract. For purpose of finalizing the accounts, the Quantity Surveyor may request the Sub-Contractor to submit further documents as he may deem necessary.



- 23.13 The final certificate issued under sub-clause 34.21 of the main contract shall be final and binding on the Sub-Contractor in the same manner it is binding on the Contractor.
- 23.14 If the Project Manager desires to secure final payment to the Sub-Contractor before final payment is due to the Contractor, the provisions of sub-clause 32.1 of the main contract shall apply.
- 23.15 The Contractor shall be entitled to deduct from or set off against any money due from him to the Sub-Contractor in interim certificates any sum or sums which the Sub-Contractor is liable to pay to the Contractor arising under or in connection with the sub-contract.

#### **24.0 PRACTICAL COMPLETION AND DEFECTS LIABILITY**

- 24.1 The Sub-Contractor shall proceed with the works regularly and diligently and complete the same within the period stated in the appendix to this sub-contract or within such extended period as may be granted under clause 25.0 of this sub-contract.
- 24.2 Where the sub-contract works are to be completed in sections or where the sub-contract works are to be completed in advance of the main contract works, the provisions of clauses in the main contract shall apply, as appropriate, to the sub-contractor in the same manner as they apply to the main contract.
- 24.3 The procedures for certifying practical completion and for dealing with defects in the sub-contract works as well as the main contract works are as prescribed in the main contract. Upon the issue of the certificate of practical completion of the whole of the works or of the sub-contract works, as applicable, the Sub-contractor shall be entitled to release of one half of the retention money attributable to the sub-contract works within 7 days after the Contractor has received payment.
- 24.4 The balance of the retention money shall be released to the Sub-Contractor after the defects appearing in the works have been rectified in accordance with the main contract condition of contract and after the Contractor has received the said payment as provided for in the main contract.

#### **25.0 EXTENSION OF TIME**

- 25.1 Upon it becoming reasonably apparent that the progress of the sub-contract works is or will be delayed, the Sub-Contractor shall forthwith give written notice of the cause of the delay to the Contractor and to the Project Manager with supporting details showing the extent of delay caused or likely to be caused. Thereafter, the Project Manager shall evaluate the information supplied by the Sub-Contractor and if in his opinion, the completion of the works is likely to be or has been delayed beyond the date for practical completion stated in the appendix to these conditions or beyond any extended time previously fixed under this clause, by any of the reasons entitling the Contractor to extension of time under sub-clause 36.1 of the main contract, then the Project Manager shall, so soon as he is able estimate the length of the delay beyond the date or time aforesaid, recommend to the Contractor a fair and reasonable extension of time to be granted for the completion of the sub-contract works.
- 25.2 Thereupon, the Contractor shall grant in writing to the Sub-Contractor the recommended time. Provided that the Contractor shall not grant any extension of time to the Sub-Contractor without the written recommendation of the Project Manager. And provided that the Sub-Contractor shall constantly use his best endeavors to prevent delay and shall do all that may be reasonably required to proceed with the works.

- 25.3 The procedures for dealing with requests for extension of time and the observance of time limits prescribed in the main contract shall apply to the sub-contract in the same manner as they apply to the main contract.

## **26.0 LOSS AND EXPENSE CAUSED BY DISTURBANCE OF REGULAR PROGRESS**

- 26.1 If upon written application being made by the Sub-Contractor to the Contractor and to the Project Manager, the project manager is of the opinion that the Sub-Contractor has been involved in direct loss and or expense, for which he would not be reimbursed by a payment made under any other provision in this sub-contract, by reasons of the regular progress of the sub-contract works or any part thereof having been materially affected by any of the reasons which would entitle the Contractor to reimbursement under the main contract, the Quantity Surveyor shall assess the amount of such loss and or expense.
- 26.2 Any amount so assessed shall be added to the sub-contract price and if an interim certificate is issued after the date of assessment, any such amount shall be added to the amount, which would otherwise be stated as due in such certificate as regards the Sub-Contractor's entitlement.
- 26.3 The procedures for dealing with loss and or expense claims prescribed in the main contract shall apply to the sub-contract in the same manner as they apply to the main contract, as appropriate.

## **27.0 DAMAGES FOR DELAY IN COMPLETION**

- 27.1 If the Sub-Contractor fails to complete the sub-contract works by the date for practical completion stated in the appendix to these conditions or within any extended time fixed under clause 25.0 herein, and the Engineer certifies in writing that in his opinion the same ought reasonably so to have been completed, then the Sub-Contractor shall pay or allow to the Contractor a sum calculated at the rate stated in the said appendix as liquidated damages for the period during which the works shall so remain or have remained incomplete.
- 27.2 The Contractor may deduct such sum from any money due or to become due to the Sub-Contractor under the sub-contract or recover the same from the Sub-Contractor as a debt. Provided that the Contractor shall not be entitled to recover any liquidated damages from the Sub-Contractor without first obtaining the Architect's certificate of delay prescribed herein.

## **28.0 FLUCTUATIONS**

- 28.1 Unless otherwise stated in the sub-contract bills or specifications, the sub-contract price shall be deemed to have been calculated to include all duties and taxes imposed by statutory and other competent authorities in the country where the works are being carried out, and
- 28.2 The sub-contract price shall be deemed to be based on currency exchange rates current at the date of tender as regards materials or goods to be specifically imported for permanent incorporation in the works.
- 28.3 Should duties, taxes and exchange rates vary during the period of the contract, compensation thereof shall be calculated in accordance with sub-clause 24.5 of the main contract.

- 28.4 Compensation for change in prices of goods and materials incorporated in the works and in the rates of wages provided for in the main contract shall not apply to the sub-contract unless specifically provided for in the bill of quantities or specifications.

**29.0 TERMINATION OF MAIN CONTRACT**

- 29.1 If, for any reason, the contractor's employment is terminated either under clause 37.0 of the main contract, this sub-contract shall thereupon also terminate.
- 29.2 Upon termination, the sub-contractor shall cease all work and vacate the site. He shall not remove any equipment or any materials brought onto the site for the carrying out of the works without the written approval of the contractor and the project manager
- 29.3 Where the termination of the main contract occurs without the default of the sub-contractor, the sub-contractor shall be paid by the contractor for work done in the like manner as the Contractor is paid at clause 33.0 of the main contract.
- 29.4 Where the termination of main contract arises from the default by the sub-contractor, the adjustment of the sub-contract accounts shall be performed in the like manner as is provided at sub-clause 33.0 of the main contract regarding the main contract accounts.

**30.0 TRMINATION OF SUB-CONTRACT.**

- 30.1 Without prejudice to any other rights and remedies which the contractor may possess, if the sub-contractor shall make default in any one or more of the respects which would entitle the employer to terminate the main contract under clause 38.0 therein, the contractor shall give the sub-contractor a notice, with a copy to the Project Manager and to the employer by registered post of recorded delivery specifying the default. Should the sub-contractor continue the default for 14 days after receipt of such notice or at any time thereafter repeat such default and should the Project Manager certify that the sub-contractor is in default, the contractor may terminate the Sub-contract forthwith after the expiry of the notice provided that the notice is not given unreasonably or vexatiously. The termination letter shall be copied to the Project Manager and to the Employer.
- 30.2 Where the sub-contract is terminated due to the default of the sub-contractor as in sub-clause 30.1 herein, the adjustment of sub-contract accounts shall be performed in the like manner as is provided at sub-clause 33.0 of the main contract regarding the main contract accounts.
- 30.3 Without prejudice to any other rights and remedies which the Sub-Contractor may possess, if the Contractor shall make default in one or more of the respects which, if committed by the Employer, would entitle the contractor to terminate the main contract under clause 39.0 therein, the Sub-Contractor shall give the Contractor a notice, with a copy to the Project Manager and to the Employer, by registered post or recorded delivery specifying the default. Should the contractor continue the default for 14 days after receipt of such notice or at any time thereafter repeat such default, and should the Project Manager certify that the contractor is in default, the Sub-Contractor may terminate the sub-contract forthwith after expiry of the notice, provided that the notice is not given unreasonably or vexatiously. The termination letter shall be copied to the Project Manager and to the Employer.
- 30.4 If the Sub-Contract is terminated due to the default of the Contractor as in sub-clause 30.3 herein, the Contractor shall pay the sub-contractor for work done in the like manner

as the Contractor would be paid at sub-clause 39.5 of the main contract where the termination is done by the Contractor.

- 30.5 Where the sub-contract is terminated due to the default of the Contractor, all expenses arising from the termination shall be done wholly by the Contractor and the termination shall not create any liability on the Employer.
- 30.6 Where the sub-contract is terminated due to the default of the Sub-Contractor, the sub-contractor shall be liable to the contractor for all expenses arising therefrom.

**31.0 SETTLEMENT OF DISPUTES**

- 31.1 In case any dispute or difference shall arise between the Contractor and Sub-Contractor, either during the progress or after the completion or abandonment of the sub-contract works, such dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within 30 days of the notice.
- 31.2 The dispute shall be referred to the arbitration and final decision of a person to be agreed by the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointment by the Chairman or Vice Chairman of the Architectural Association of Kenya or the Chairman or Vice Chairman of The Chartered Institute of Arbitrators, Kenya Branch, at the request of the applying party.
- 31.3 The arbitration may be on the construction of this sub-contract or on any matter or thing of whatsoever nature arising thereunder or in connection therewith including the rights and liabilities of the parties during the currency of the sub-contract and subsequent to the termination of the sub-contract.
- 31.4 Where the sub-contractor is aggrieved by the manner in which the Project Manager has exercised or failed to exercise his powers stipulated in the main contract, or in the sub-contract or by any action or inaction of the Employer, and in particular, if he is aggrieved by:
  - 31.4.1 The failure or refusal of the Project Manager to recommend to the contractor an extension of sub-contract time, or
  - 31.4.2 The extend of the recommended time,  
or
  - 31.4.3. The amount certified to the sub-contractor either in an interim in a final Certificate,  
or
  - 31.4.4 The issue of an instruction which the sub-contractor contends is not authorized by the main contract or the sub-contract,  
or
  - 31.4.5. Any other matter left to the discretion of the Project Manager in the main contract or in the sub-contract, then.
- 31.5 Subject to the Sub-Contractor giving the Contractor such indemnity and security as the Contractor may reasonably require, the Contractor shall allow the Sub-Contractor to use the contractor's name and, if necessary, shall join the Sub-Contractor in arbitration proceeding against the employer to decide the matters in dispute or in difference.

- 31.6 Provided that no arbitration proceedings shall be commenced on any dispute or difference where notice of a dispute or difference where notice of a dispute or difference has not been given by the applying party within 90 days of the occurrence or discovery of the matter or issue giving rise to the dispute or difference.
- 31.7 Notwithstanding the issue of a notice as stated above, the arbitration of such a dispute or difference shall not commence unless an attempt has in the first instance been made by the parties to settle such dispute or difference amicably with or without the assistance of third parties.
- 31.8 In any event, no arbitration shall commence earlier than 90 days after the service of the notice of a dispute or difference, except as provided for at sub-clause 31.9 herein.
- 31.9 Notwithstanding anything stated herein, the following matters may be referred to arbitration before the practical completion of the works or abandonment of the works or termination of the sub-contract without having to comply with sub clause 31.8 herein.
- 31.9.1 Whether or not the issue of an instruction by the Project Manager is authorized by the main contract or these conditions, and
- 31.9.2 Whether or not a payment certificate has been improperly withheld or is not in accordance with the main contract or these conditions or though issued, it has not been honoured.
- 31.10 All other matters in dispute shall only be referred to arbitration after the practical completion or alleged practical completion of the works or abandonment of the works or termination or alleged termination of the sub-contract, unless the project manager the contractor and the sub-contractor agree otherwise in writing.
- 31.11 The Arbitrator shall, without prejudice to the generality of his powers, have power to direct such measurements, computations, tests, or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject or included in any payment certificate.
- 31.12 The Arbitrator shall, without prejudice to the generality of his powers, have power to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion decision, requirement or notice had been given.
- 31.13 Provided that any decision of the Project Manager which is final and binding on the contractor under the main contract shall be final and binding between the contractor and the sub-contractor.
- 31.14 The award of such Arbitrator shall be final and binding upon the parties.

**SUB CONTRACTOR’S PERFORMANCE BOND**

BY THIS AGREEMENT we .....(SURETY)  
of .....  
are bound to .....(CONTRACTOR)  
in the sum of Kenya shillings .....  
.....(Kshs. ....)  
to be paid by us to the said .....(CONTRACTOR)  
WHEREAS by an agreement in writing dated .....  
.....(SUB-CONTRACTOR)  
entered into a sub-contract with .....(CONTRACTOR)

to carry out and complete the works therein stated in the manner and by the time therein specified all in accordance with the provisions of the said sub-contract, namely:  
(description of works)  
.....

NOW the condition of the above written bond is such that if the said sub-contractor, his executors, administrator, successors or assigns shall duly perform his obligations under the sub-contract, or if on default by the sub-contractor the surety shall satisfy and discharge the damages sustained by the contractor thereby up to the amount of the above written bond, then this obligation shall be void, otherwise it shall remain in full force and effect. Upon default, and without prejudice to his other rights under the sub-contract, the contractor shall be entitled to demand forfeiture of the bond and we undertake to honour the demand in the amount stated above.

PROVIDED always and it is hereby agreed and declared that no alteration in the terms of the said sub-contract or in the extend or nature of the works to be carried out and no extension of time by the contractor under the sub-contract shall in any way release the surety from any liability under the above written bond.

IN WITNESS whereof we have set out hand this..... day of .....  
.....

Surety

Witness

Authorised by Power of Attorney No.....

**APPENDIX**

**Clause**

Name of sub-contractor’s insurers	6.0.....
Name of sub-contractor’s surety	7.0.....
Amount of surety	7.0.....
Period of possession of site	8.1.....
Date of commencement of works	8.2.....
Date for practical completion	8.2.....
Interval for application of payment certificates	23.1.....
Minimum amount of payment certificate	23.4.....
Percentage of certified value retained	23.6.....
Limit of retention fund, if any	23.6.....
Name of the sub-contractor’s bank for Purposes of interest calculation.	23.7, 23.8.....
Defects liability period	23.11.....
Period of final measurement and valuation	23.12.....
Damages of delay in completion	27.1 at the rate of Kshs. 100,000 /wk
	..

Signed by the said:

.....

.....

**CONTRACTOR**

**SUB-CONTRACTOR**

**APPENDIX TO AGREEMENT AND CONDITIONS OF SUB-CONTRACT FOR BUILDING WORKS**

**Modify Clause 28.4**

This is a fixed price contract.



**SECTION C**

**SUB-CONTRACT PRELIMINARIES**

**AND**

**GENERAL CONDITIONS**

CONTRACT PRELIMINARIES AND GENERAL CONDITIONS

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## **SECTION C**

### **SUB-CONTRACT PRELIMINARIES AND GENERAL CONDITIONS**

#### **1.01 Examination of Tender Documents**

The tenderer is required to check the number of pages of this document and should he find any missing or indistinct, he must inform the Engineer at once and have the same rectified.

All tenderers shall be deemed to have carefully examined the following:

- a) Work detailed in the Specification and in the Contract Drawings.
- b) The Republic of Kenya Document “General Conditions of Contract for Electrical and Mechanical Works”.
- c) Other documents to which reference is made.

He shall also be deemed to have included for any expenditure which may be incurred in conforming to the above items (a), (b), (c) and observe this expense as being attached to the contract placed for the whole or any part of the work.

The tenderer shall ensure that all ambiguities, doubts or obscure points of detail, are clarified with the Engineer before submission of his tender, as no claims for alleged deficiencies in the information given shall be considered after this date.

#### **1.02 Discrepancies**

The Sub-contractor shall include all work either shown on the Contract Drawings or detailed in the specification. No claim or extra cost shall be considered for works which has been shown on the drawings or in the specification alone.

Should the drawing and the specification appear to conflict, the Sub-contractor shall query the points at the time of tendering and satisfy himself that he has included for the work intended, as no claim for extra payment on this account shall be considered after the contract is awarded.

#### **1.03 Conditions of Sub-Contract Agreement**

The Sub-contractor shall be required to enter into a Sub-contract with the Main Contractor.

The Conditions of the Contract between the Main Contractor and the Sub-contractor as hereinafter defined shall be the latest edition of the Agreement and Schedule of Conditions of Kenya Association of Building and Civil Engineering Contractors as particularly modified and amended hereinafter.

For the purpose of this contract the Agreement and Schedule of Conditions and any such modifications and amendments shall read and construed together. In any event of discrepancy the modifications and amendments shall prevail.

#### **1.04 Payment**

Payment will be made through certificates direct to the subcontractor. All the subcontractors valuations claim must done through the main contractor and subsequently forwarded to the consultants . All payments will be less retention as specified in the Main Contract. No payment will become due until materials are delivered to site.

1.05 **Definition of Terms**

Throughout these contract documents units of measurements, terms and expressions are abbreviated and wherever used hereinafter and in all other documents they shall be interpreted as follows:

- i. The term “**Employer**” shall mean **Kenya Medical Supplies Authority**
- ii. The Term “**Project Manager** ” Shall Mean **Works secretary, State Department of Public Works, Ministry of Transport, Infrastructure, Housing and Urban Development**
- iii. The term “**Architect:** ” shall mean **Maestro Architects Ltd**
- iv. The term “**Quantity Surveyor**” shall mean **M & M Construction Consultants.**
- v. The term “**Civil/Structural Engineers** ” shall mean **Kiri Consult Ltd**
- vi. **Engineer:** The term “**Engineer**” shall mean **Norkun Intakes Ltd**
- vii. **Main Contractor:** The term “**Main Contractor**” shall mean the firm or company appointed to carry out the Building Works and shall include his or their heir, executors, assigns, administrators, successors, and duly appointed representatives.
- vii) **Sub-contractor:** The term “**Sub-contractor**” shall mean the persons or person, firm or Company whose tender for this work has been accepted, and who has entered into a contract agreement with the Contractor for the execution of the Sub-contract Works, and shall include his or their heirs, executors, administrators, assigns, successors and duly appointed representatives.
- viii) **Sub-contract Works:** The term “**Sub-contract Works**” shall mean all or any portion of the work, materials and articles, whether the same are being manufactured or prepared, which are to be used in the execution of this Sub-contract and whether the same may be on site or not.
- ix) **Contract Drawings:** The term “**Contract Drawings**” shall mean those drawings required or referred to herein and forming part of the Bills of Quantities.
- x) **Working Drawings:** The term “**Working Drawings**” shall mean those drawings required to be prepared by the Sub-contractor as hereinafter described.
- xi) **Record Drawings:** The term “**Record Drawings**” shall mean those drawings required to be prepared by the Sub-contractor showing “as installed” and other records for the Sub-contract Works.
- xii) **Abbreviations:**
  - CM** shall mean **Cubic Metre**
  - SM** shall mean **Square Metre**
  - LM** shall mean **Linear Metre**
  - M** shall mean **Metre**
  - LS** shall mean **Lump Sum**
  - mm** shall mean **Millimetres**
  - No.** shall mean **Number**
  - Kg.** shall mean **Kilogramme**
  - KEBS** shall mean **Kenya Bureau of Standards**
  - BS** shall mean. **Current standard British Standard Specification published by the British Standard Institution, 2 Park Street, London W1, England**

“**Ditto**” shall mean the whole of the preceding description in which it occurs.

Where it occurs in description of succeeding item it shall mean the same as in the first description of the series in which it occurs except as qualified in the description concerned.

Where it occurs in brackets it shall mean the whole of the preceding description which is contained within the appropriate brackets.

**1.06 Site Location**

The site of the Sub-contract Works is situated **at Embakasi Nairobi**

The tenderer is recommended to visit the site and shall be deemed to have satisfied himself with regard to access, possible conditions, the risk of injury or damage to property on/or adjacent to the site, and the conditions under which the sub-contract Works shall have to be carried out and no claims for extras will be considered on account of lack of knowledge in this respect.

**1.07 Duration of Sub-Contract**

The Sub-Contractor shall be required to phase his work in accordance with the Main contractor’s program (or its revision). The program is to be agreed with the Main contractor.

**1.08 Scope of Sub-Contract Works**

The sub-contractor shall supply, deliver, unload, hoist, fix, test, commission and hand-over in satisfactory working order the complete installations specified hereinafter and/or as shown on the Contract Drawings attached hereto, including the provision of labour, transport and plant for unloading material and storage, and handling into position and fixing, also the supply of ladders, scaffolding the other mechanical devices to plant, installation, painting, testing, setting to work, the removal from site from time to time of all superfluous material and rubbish caused by the works.

The sub-contractor shall supply all accessories, whether of items or equipment supplied by the Main Contractor but to be fixed and commissioned under this Sub-contract.

**1.09 Extent of the Sub-contractor’s Duties**

At the commencement of the works, the Sub-contractor shall investigate and report to the Engineer if all materials and equipment to be used in the work and not specified as supplied by the others are available locally. If these materials and equipment are not available locally, the Sub-contractor shall at this stage place orders for the materials in question and copy the orders to the Engineer. Failure to do so shall in no way relieve the Sub-contractor from supplying the specified materials and equipment in time.

Materials supplied by others for installation and/or connection by the Subcontractor shall be carefully examined in the presence of the supplier before installation and connection. Any defects noted shall immediately be reported to the Engineer.

The Sub-contractor shall be responsible for verifying all dimensions relative to his work by actual measurements taken on site.

The Sub-contractor shall mark accurately on one set of drawings and indicate all alterations and/or modifications carried out to the designed system during the construction period. This information must be made available on site for inspection by the Engineer.

**1.10 Execution of the Works**

The works shall be carried out strictly in accordance with:

- a) All relevant Kenya Bureau of Standards Specifications.
- b) All relevant British Standard Specifications and Codes of Practice (hereinafter referred to as B.S. and C.P. respectively).
- c) This Specification.
- d) The Contract Drawings.
- e) The Bye-laws of the Local Authority.
- f) The Architect's and/or Engineer's Instructions.

The Contract Drawings and Specifications to be read and construed together.

**1.11 Validity of Tender**

The tender shall remain valid for acceptance within 120 days from the final date of submission of the tender, and this has to be confirmed by signing the Tender Bond. The tenderer shall be exempted from this Bond if the tender was previously withdrawn in writing to the Employer before the official opening.

**1.12 Firm – Price Sub-contract**

Unless specifically stated in the documents or the invitation to tender, this is a firm-price Contract and the Sub-contractor must allow in his tender for the increase in the cost of labour and/or materials during the duration of the contract. No claims will be allowed for increased costs arising from the fluctuations in duties and/or day to day currency fluctuations. The Sub-contractor will be deemed to have allowed in his tender for any increase in the cost of materials which may arise as a result of currency fluctuation during the contract period.

**1.13 Variation**

No alteration to the Sub-contract Works shall be carried out until receipt by the Sub-contractor of written instructions from the Project Manager.

Any variation from the contract price in respect of any extra work, alteration or omission requested or sanctioned by the Project Manager or Engineer shall be agreed and confirmed in writing at the same time such variations are decided and shall not affect the validity of the Contract. Schedule of Unit Rates shall be used to assess the value of such variations. No allowance shall be made for loss of profit on omitted works.

Where the Project Manager requires additional work to be performed, the Sub-contractor, if he considers it necessary, will give notice within seven (7) days to the Main Contractor of the length of time he (the Sub-contractor) requires over and above that allotted for completion of the Sub-contract.

If the Sub-contractor fails to give such notice he will be deemed responsible for the claims arising from the delay occasioned by reason of such extension of time.

**1.14 Prime Cost and Provisional Sums**

A specialist Sub-contractor may be nominated by the Project Manager to supply and/or install any equipment covered by the Prime Cost or Provisional Sums contained within the Sub-contract documents.

The work covered by Prime Cost and Provisional Sums may or may not be carried out at the discretion of the Architect.

The whole or any part of these sums utilized by the Sub-contractor shall be deducted from the value of the Sub-contract price when calculating the final account.



**1.15 Bond**

The tenderer must submit with his tender the name of one Surety who must be an established Bank only who will be willing to be bound to the Main Contractor for an amount equal to 5 % of the Sub-contract amount as per the Main Contract condition of contract.

**1.16 Government Legislation and Regulations**

The Sub-contractor's attention is called to the provision of the Factory Act 1972 and subsequent amendments and revisions, and allowance must be made in his tender for compliance therewith, in so far as they are applicable.

The Sub-contractor must also make himself acquainted with current legislation and any Government regulations regarding the movement, housing, security and control of labour, labour camps, passes for transport, etc.

The Sub-contractor shall allow for providing holidays and transport for work people, and for complying with Legislation, Regulations and Union Agreements.

**1.17 Import Duty and Value Added Tax**

The Sub-contractor will be required to pay full Import Duty and Value Added Tax on all items of equipment, fittings and plant, whether imported or locally manufactured. The tenderer shall make full allowance in his tender for all such taxes

**1.18 Insurance Company Fees**

Attention is drawn to the tenderers to allow for all necessary fees, where known, that may be payable in respect of any fees imposed by Insurance Companies or statutory authorities for testing or inspection.

No allowance shall be made to the Sub-contractor with respect to fees should these have been omitted by the tenderer due to his negligence in this respect.

**1.19 Provision of Services by the Main Contractor**

In accordance with Clause 1.08 of this Specification the Main Contractor shall make the following facilities available to the Sub-contractor:

- a) Attendance on the Sub-contractor and the carrying out of all work affecting the structure of the building which may be necessary, including all chasing, cutting away and making good brickwork, etc., except that all plugging for fixing, fittings, machinery, fan ducting, etc., and all drilling and tapping of steel work shall be the responsibility of the Sub-contractor. Any purpose made fixing brackets shall not constitute Builder's Work and shall be provided and installed by the Sub-contractor unless stated hereinafter otherwise.
- b) The provision of temporary water, lighting and power: All these services utilized shall be paid for by the Main Contractor. The Sub-contractor shall, however, allow for additional connections/extensions required for his purposes.
- c) Fixing of anchorage and pipe supports in the shuttering, except that all anchorage shall be  
Supplied by the Sub-contractor who shall also supply the Main Contractor with fully dimensioned drawings detailing the exact locations.
- d)
  - i) Provision of scaffolding, cranes, etc. but only in so far as it is required for the Main Contract Works. It shall be the Sub-contractor's responsibility to liaise with the Main Contractor to ensure that there is maximum co-operation with other Sub-contractors in the use of scaffolding, cranes, etc.
  - ii) Any specialist scaffolding, cranes, etc. by the Sub-contractor for his own exclusive use shall be paid for by the Sub-contractor.

**1.20 Suppliers**

The Sub-contractor shall submit names of any supplier for the materials to be incorporated, to the Engineer for approval. The information regarding the names of the suppliers may be submitted at different times, as may be convenient, but no sources of supply will be changed without prior approval.

Each supplier must be willing to admit the Engineer or his representative to his premises during working hours for the purpose of examining or obtaining samples of the materials in question.

**1.21 Samples and Materials Generally**

The Sub-contractor shall, when required, provide for approval at no extra cost, samples of all materials to be incorporated in the works. Such samples, when approved, shall be retained by the Engineer and shall form the standard for all such materials incorporated.

**1.22 Administrative Procedure and Contractual Responsibility**

Wherever within the Specification it is mentioned or implied that the Sub-contractor shall deal direct with the Employer or Engineer, it shall mean “through the Contractor” who is responsible to the Employer for the whole of the works including the Sub-contract Works.

**1.23 Bills of Quantities**

The Bills of Quantities have been prepared in accordance with the standard method of measurement of Building Works for East Africa, first Edition, Metric, 1970. All the Quantities are based on the Contract Drawings and are provisional and they shall not be held to gauge or to limit the amount or description of the work to be executed by the Sub-contractor but the value thereof shall be deducted from the Sub-contract Sum and the value of the work ordered by the Engineer and executed there under shall be measured and valued by the Engineer in accordance with the conditions of the Sub-contract.

All work liable to adjustment under this Sub-contract shall be left uncovered for a reasonable time to allow measurements needed for such adjustment to be taken by the Quantity Surveyor or Engineer. Immediately the work is ready for measuring the Sub-contractor shall give notice to the Quantity Surveyor or Engineer to carry out measurements before covering up. If the Sub-contractor shall make default in these respects he shall, if the Project Manager so directs, uncover the work to enable the necessary measurements to be taken and afterwards reinstate at his own expense.

**1.24 Sub-contractor’s Office in Kenya**

The Sub-contractor shall maintain (after first establishing if necessary) in Kenya an office staffed with competent Engineer Manager and such supporting technical and clerical staff as necessary to control and coordinate the execution and completion of the Sub-contract Works.

The Engineer Manager and his staff shall be empowered by the Sub-contractor to represent him at meetings and in discussions with the Main Contractor, the Engineer and other parties who may be concerned and any liaison with the Sub-contractor’s Head Office on matters relating to the design, execution and completion of the Sub-contract Works shall be effected through his office in Kenya.

It shall be the Sub-contractor’s responsibility to procure work permits, entry permits, licenses, registration, etc., in respect of all expatriate staff.

The Sub-contractor shall prepare a substantial proportion of his Working Drawings at his office in Kenya. No reasons for delays in the preparation or submission for approval or otherwise of such drawings or proposals will be accepted on the grounds that the Sub-contractor’s Head Office is remote from his office in Nairobi or the site of the Sub-contract Works or otherwise.

**1.25 Builder's Work**

All chasing, cutting away and making good will be done by the Main Contractor but the Sub-contractor shall mark out in advance and shall be responsible for accuracy of the size and position of all holes and chases required.

The Sub-contractor shall drill and plug holes in floors, walls, ceiling and roof for securing services and equipment requiring screw or bolt fixings.

Any purpose made fixing brackets shall not constitute builder's work and shall be provided and installed by the Sub-contractor unless stated hereinafter to the contrary.

**1.26 Structural Provision for the Works**

Preliminary major structural provision has been made for the Sub-contract Works based on outline information ascertained during the preparation of the Specification.

The preliminary major structural provision made will be deemed as adequate unless the Sub-contractor stated otherwise when submitting his tender.

Any major structural provision or alteration to major structural provisions required by the Sub-contractor shall be shown on Working Drawings to be submitted to the Engineer within 30 days of being appointed.

No requests for alterations to preliminary major structural provisions will be approved except where they are considered unavoidable by the Engineer. In no case will they be approved if building work is so far advanced as to cause additional costs or delays in the work of the Main Contractor.

**1.27 Position of Services, Plant, Equipment, Fittings and Apparatus**

The Contract Drawings give a general indication of the intended layout. The position of the equipment and apparatus, and also the exact routes of the ducts, main and distribution pipework shall be confirmed before installation is commenced. The exact siting of appliances, pipework, etc., may vary from that indicated.

The routes of services and positions of apparatus shall be determined by the approved dimensions detailed in the Working Drawings or on site by the Engineer in consultation with the Sub-contractor or the Main Contractor.

Services throughout the ducts shall be arranged to allow maximum access along the ducts and the services shall be readily accessible for maintenance. Any work which has to be re-done due to negligence in this respect shall be the Sub-contractor's responsibility.

The Sub-contractor shall be deemed to have allowed in his Sub-contract Sum for locating terminal points of services (e.g. lighting, switches, socket outlets, lighting points, control switches, thermostats and other initiating devices, taps, stop cocks) in positions plus or minus 1.2m horizontally and vertically from the locations shown on Contract Drawings. Within these limits no variations in the Sub-contract Sum will be made unless the work has already been executed in accordance with previously approved Working Drawings and with the approval of the Engineer.

**1.28 Checking of Work**

The Sub-contractor shall satisfy himself to the correctness of the connections he makes to all items of equipment supplied under the Sub-contract agreement and equipment supplied under other contracts before it is put into operation. Details of operation, working pressures, temperatures, voltages, phases, power rating, etc., shall be confirmed to others and confirmation received before the system is first operated.

**1.29 Setting to Work and Regulating System**

The Sub-contractor shall carry out such tests of the Sub-contract Works as required by British Standard Specifications or equal and approved codes as specified hereinafter and as customary.

No testing or commissioning shall be undertaken except in the presence of and to the satisfaction of the Engineer unless otherwise stated by him (Sub-contractor's own preliminary and proving tests excepted).

It will be deemed that the Sub-contractor has included in the Sub-contract Sum for the costs of all fuel, power, water and the like, for testing and commissioning as required as part of the Sub-contract Works. He shall submit for approval to the Engineer a suitable programme for testing and commissioning. The Engineer and Employer shall be given ample warning in writing, as to the date on which testing and commissioning will take place.

The Sub-contractor shall commission the Sub-contract Works and provide attendance during the commissioning of all services, plant and apparatus connected under the Sub-contract Agreement or other Sub-contract Agreements, related to the project.

Each system shall be properly balanced, graded and regulated to ensure that correct distribution is achieved and where existing installations are affected, the Sub-contractor shall also regulate these systems to ensure that their performance is maintained.

The proving of any system of plant or equipment as to compliance with the Specification shall not be approved by the Engineer, except at his discretion, until tests have been carried out under operating conditions pertaining to the most onerous conditions specified except where the time taken to obtain such conditions is unreasonable or exceeds 12 months after practical completion of the Sub-contract Works.

**1.30 Identification of Plant Components**

The Sub-contractor shall supply and fix identification labels to all plant, starters, switches and items of control equipment including valves, with white traffolyte or equal labels engraved in red lettering denoting its name, function and section controlled. The labels shall be mounted on equipment and in the most convenient positions. Care shall be taken to ensure the labels can be read without difficulty. This requirement shall apply also to major components of items of control equipment.

Details of the lettering of the labels and the method of mounting or supporting shall be forwarded to the Engineer for approval prior to manufacture.

**1.31 Contract Drawings**

The Contract Drawings when read in conjunction with the text of the Specification, have been completed in such detail as was considered necessary to enable competitive tenders to be obtained for the execution and completion of the Sub-contract works.

The Contract Drawings are not intended to be Working Drawings and shall not be used unless exceptionally they are released for this purpose.

**1.32 Working Drawings**

The Sub-contractor shall prepare such Working Drawings as may be necessary. The Working Drawings shall be complete in such detail not only that the Sub-contract Works can be executed on site but also that the Engineer can approve the Sub-contractor's proposals, detailed designs and intentions in the execution of the Sub-contract Works.

If the Sub-contractor requires any further instructions, details, Contract Drawings or information drawings to enable him to prepare his Working Drawings or proposals, the Sub-contractor shall accept at his own cost, the risk that any work, commenced or which he intends to commence at site may be rejected.

The Engineer, in giving his approval to the Working Drawings, will presume that any necessary action has been, or shall be taken by the Sub-contractor to ensure that the installations shown on the Working Drawings have been cleared with the Main Contractor and any other Sub-contractors whose installations and works might be affected.

If the Sub-contractor submits his Working Drawings to the Engineer without first liaising and obtaining clearance for his installations from the Main Contractor and other Sub-contractors whose installations and works might be affected, then he shall be liable to pay for any alterations or modification to his own, the Main Contractor's or other Sub-contractor's installations and works, which are incurred, notwithstanding any technical or other approval received from the Engineer.

Working Drawings to be prepared by the Sub-contractor shall include but not be restricted to the following:

- a) Any drawings required by the Main Contractor, or Engineer to enable structural provisions to be made including Builder's Working Drawings or Schedules and those for the detailing of holes, fixings, foundations, cables and paperwork ducting below or above ground or in or outside or below buildings.
- b) General Arrangement Drawings of all plant, control boards, fittings and apparatus or any part thereof and of installation layout arrangement of such plant and apparatus.
- c) Schematic Layout Drawings of services and of control equipment.
- d) Layout Drawings of all embedded and non-embedded paperwork, ducts and electrical conduits.
- e) Complete circuit drawings of the equipment, together with associated circuit description.
- f) Such other drawings as are called for in the text of the Specification or Schedules or as the Engineer may reasonably require.

Three copies of all Working Drawings shall be submitted to the Engineer for approval. One copy of the Working Drawings submitted to the Engineer for approval shall be returned to the Sub-contractor indicating approval or amendment therein.

Six copies of the approved Working Drawings shall be given to the Main Contractor by the Sub-contractor for information and distribution to other Sub-contractors carrying out work associated with or in close proximity to or which might be affected by the Sub-contract Works.

Approved Working Drawings shall not be departed from except as may be approved or directed by the Engineer.

Approval by the Engineer of Working Drawings shall neither relieve the Sub-contractor of any of his obligations under the Sub-contract nor relieve him from correcting any errors found subsequently in the Approved Working Drawings or other Working Drawings and in the Sub-contract Works on site or elsewhere associated therewith.

The Sub-contractor shall ensure that the Working Drawings are submitted to the Project Manager for approval at a time not unreasonably close to the date when such approval is required. Late submission of his Working Drawings will not relieve the Sub-contractor of his obligation to complete the Sub-contract Works within the agreed Contract Period and in a manner that would receive the approval of the Architect.

### **1.33 Record Drawings (As Installed) and Instructions**

During the execution of the Sub-contract Works the Sub-contractor shall, in a manner approved by the Engineer record on Working or other Drawings at site all information necessary for preparing Record Drawings of the installed Sub-contract Works. Marked-up Working or other Drawings and other documents shall be made available to the Engineer as he may require for inspection and checking.

Record Drawings, may, subject to the approval of the Engineer, include approved Working Drawings adjusted as necessary and certified by the Sub-contractor as a correct record of the installation of the Sub-contract Works.

They shall include but not restricted to the following drawings or information:

- a) Working Drawings amended as necessary but titled “Record Drawings” and certified as a true record of the “As Installed” Sub-contract Works. Subject to the approval of the Engineer such Working Drawings as may be inappropriate may be omitted.
- b) Fully dimensioned drawings of all plant and apparatus.
- c) General arrangement drawings of equipment, other areas containing plant forming part of the Sub-contract Works and the like, indicating the accurate size and location of the plant and apparatus suitability cross-referenced to the drawings mentioned in (b) above and hereinafter.
- d) Routes, types, sizes and arrangement of all pipework and ductwork including dates of installation of underground pipework.
- e) Relay adjustment charts and manuals.
- f) Routes, types, sizes and arrangement of all electric cables, conduits, ducts and wiring including the dates of installation of buried works.
- g) System schematic and trunking diagrams showing all salient information relating to control and instrumentation.
- h) Grading Charts.
- i) Valve schedules and locations suitability cross-referenced.
- j) Wiring and piping diagrams of plant and apparatus.
- k) Schematic diagrams of individual plant, apparatus and switch and control boards. These diagrams to include those peculiar to individual plant or apparatus and also those applicable to system operation as a whole.
- l) Operating Instruction

Schematic and wiring diagrams shall not be manufacturer’s multipurpose general issue drawings. They shall be prepared specially for the Sub-contract Works and shall contain no spurious or irrelevant information.

Marked-up drawings of the installation of the Sub-contract Works shall be kept to date and completed by the date of practical or section completion. Two copies of the Record Drawings of Sub-contract Works and two sets of the relay adjustment and grading charts and schematic diagrams on stiff backing shall be provided not later than one month later.

The Sub-contractor shall supply for fixing in sub-stations, switch-rooms, boiler houses, plant rooms, pump houses, the office of the Maintenance Engineer and other places, suitable valve and instructions charts, schematic diagrams of instrumentation and of the electrical reticulation as may be requested by the Engineer providing that the charts, diagrams, etc., relate to installations forming part of the Sub-contract Works. All such charts and diagrams shall be of suitable plastic material on a stiff backing and must be approved by the Engineer before final printing.

Notwithstanding the Sub-contractor's obligations referred to above, if the Sub-contractor fails to produce to the Engineer's approval, either:-

- a) The Marked-up Drawings during the execution of the Sub-contract Works or
- b) The Record Drawings, etc., within one month of the Section or Practical Completion

The Engineer shall have these drawings produced by others. The cost of obtaining the necessary information and preparing such drawings, etc., will be recovered from the Sub-contractor.

#### 1.34 **Maintenance Manual**

Upon Practical Completion of the Sub-contract Works, the Sub-contractor shall furnish the Engineer four copies of a Maintenance Manual relating to the installation forming part of all of the Sub-contract Works.

The manual shall be loose-leaf type, International A4 size with stiff covers and cloth bound. It may be in several volumes and shall be sub-divided into sections, each section covering one Engineering service system. It shall have a ready means of reference and a detailed index.

There shall be a separate volume dealing with Air Conditioning and Mechanical Ventilation installation where such installations are included in the Sub-contract Works.

The manual shall contain full operating and maintenance instructions for each item of equipment, plant and apparatus set out in a form dealing systematically with each system. It shall include as may be applicable to the Sub-contract Works the following and any other items listed in the text of the Specifications:

- a) System Description.
- b) Plant
- c) Valve Operation
- d) Switch Operation
- e) Procedure of Fault Finding
- f) Emergency Procedures
- g) Lubrication Requirements
- h) Maintenance and Servicing Periods and Procedures
- i) Colour Coding Legend for all Services
- j) Schematic and Wiring Diagrams of Plant and Apparatus
- k) Record Drawings, true to scale, folded to International A4 size
- l) Lists of Primary and Secondary Spares.

The manual is to be specially prepared for the Sub-contract Works and manufacturer's standard descriptive literature and plant operating instruction cards will not be accepted for inclusion unless exceptionally approved by the Engineer. The Sub-contractor shall, however, affix such cards, if suitable, adjacent to plant and apparatus. One spare set of all such cards shall be furnished to the Engineer.

#### 1.35 **Hand-over**

The Sub-contract Works shall be considered complete and the Maintenance and Defects Liability Period shall commence only when the Sub-contract Works and supporting services have been tested, commissioned and operated to the satisfaction of the Engineer and officially approved and accepted by the Employer, provided always that the handing over of the Sub-contract Works shall be coincident with the handing over of the Main Contract Works.

The procedure to be followed will be as follows:

- a) On the completion of the Sub-contract Works to the satisfaction of the Engineer and the Employer, the Sub-contractor shall request the Engineer, at site to arrange for handing over.

- b) The Engineer shall arrange a Hand-over Meeting or a series thereof, at site.
- c) The Sub-contractor shall arrange with the Engineer and Employer for a complete demonstration of each and every service to be carried out and for instruction to be given to the relevant operation staff and other representatives of the Employer.
- d) In the presence of the Employer and the Engineer, Hand-over will take place, subject to Agreement of the Hand-over Certificates and associated check lists.

**1.36 Painting**

It will be deemed that the Sub-contractor allowed for all protective and finish painting in the Sub-contract Sum for the Sub-contract Works, including colour coding of service pipework to the approval of the Engineer. Any special requirements are described in the text of the Specifications.

**1.37 Spares**

The Sub-contractor shall supply and deliver such spares suitably protected and boxed to the Engineer's approval as are called for in the Specifications or in the Price Schedules.

**1.38 Testing and Inspection – Manufactured Plant**

The Engineer reserves the right to inspect and test or witness of all manufactured plant equipment and materials.

The right of the Engineer relating to the inspection, examination and testing of plant during manufacture shall be applicable to Insurance companies and inspection authorities so nominated by the Engineer.

The Sub-contractor shall give two week's notice to the Engineer of his intention to carry out any inspection or tests and the Engineer or his representative shall be entitled to witness such tests and inspections

Six copies of all test certificates and performance curves shall be submitted as soon as possible after the completion of such tests, to the Engineer for his approval.

Plant or equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Sub-contractor's own risk and should the test certificate not be approved new tests may be ordered by the Engineer at the Sub-contractor's expense.

The foregoing provisions relate to tests at manufacturer's works and as appropriate to those carried out at site.

**1.39 Testing and Inspection -Installation**

Allow for testing each section of the Sub-contract Works installation as described hereinafter to the satisfaction of the Engineer.

**1.40 Labour Camps**

The Sub-contractor shall provide the necessary temporary workshop and mess-room in position to be approved by the Architect.

The work people employed by the Sub-contractor shall occupy or be about only that part of the site necessary for the performance of the work and the Sub-contractor shall instruct his employees accordingly.

If practicable, W.C. accommodation shall be allocated for the sole use of the Sub-contractor's workmen and the Sub-contractor will be required to keep the same clean and disinfected, to make good any damage thereto and leave in good condition.



**1.41 Storage of Materials**

Space for storage will be provided by the Main contractor but the sub-contractor will be responsible for provision of any lock-up sheds or stores required.

Nominated Sub-contractors are to be made liable for the cost of any storage accommodation provided specially for their use. No materials shall be stored or stacked on suspended slabs without the prior approval of the Project manager.

**1.42 Initial Maintenance**

The sub-contractor shall make routine maintenance once a month during the liability for the Defects Period and shall carry out all necessary adjustments and repairs, cleaning and oiling of moving parts. A monthly report of the inspection and any works done upon the installation shall be supplied to the Engineer.

The sub-contractor shall also provide a 24 -hour break-down service to attend to faults on or malfunctioning of the installation between the routine visits of inspection.

The sub-contractor shall allow in the sub-contract Sum of the initial maintenance, inspection and break-down service and shall provide for all tools, instruments, plant and scaffolding and the transportation thereof, as required for the correct and full execution of these obligations and the provision, use or installation of all materials as oils, greases, sandpaper, etc., or parts which are periodically renewed such as brake linings etc., or parts which are faulty for any reason whatsoever excepting always Acts of God such as storm, tempest, flood, earthquake and civil revolt, acts of war and vandalism.

**1.43 Maintenance and Servicing After Completion of the Initial Maintenance**

The sub-contractor shall, if required, enter into a maintenance and service agreement with the employer for the installation for a period of up to five years from the day following the last day of the liability for Defects Period which offers the same facilities as specified in Clause 1.42 (Initial Maintenance).

The terms of any such agreement shall not be less beneficial to the employer than the terms of Agreements for either similar installation.

The sub-contractor shall submit with his tender for the works, where called upon a firm quotation for the maintenance and service of the installation as specified herein, which shall be based upon the present day costs and may be varied only to take into account increases in material and labour unit rate costs between the time of tendering and the signing of the formal maintenance and service agreement and which shall remain valid and open for acceptance by the Employer to and including the last day of the fifth complete calendar month following the end of the liability for Defects Period.

**1.44 Trade Names**

Where trade names of manufacturer's catalogue numbers are mentioned in the Specification or the Bills of Quantities, the reference is intended as a guide to the type of article or quality of material required. Alternate brands of equal and approved quality will be acceptable.

**1.45 Water and Electricity for the Works**

These will be made available by the Main Contractor. The Sub-contractor shall be liable for the cost of any water or electric current used and for any installation provided especially for their own use by the Main Contractor.

**1.46 Protection**

The sub-contractor shall adequately cover up and protect his own work to prevent injury and also to cover up and protect from damage all parts of the building or premises where work is performed by him under the Contract.

**1.47 Defects After Completion**

The defects liability period will be 6 months from the date of completion of the Main Contract as certified by the Engineer.

**1.48 Damages for Delay**

Liquidated and Ascertained damages as stated in the Main Contract Agreement will be claimed against the Main Contract for any unauthorised delay in completion. The Sub-contractor shall be held liable for the whole or a portion of these damages should he cause delay in completion.

**1.49 Clear Away on Completion**

The sub-contractor shall, upon completion of the works, at his own expense, remove and clear away all plant, equipment, rubbish and unused materials, and shall leave the whole of the works in a clean and tidy state, to the satisfaction of the Engineer. On completion, the whole of the works shall be delivered up clean, complete and perfect in every respect to the satisfaction of the Engineer.

**1.50 Final Account**

On completion of the works the sub-contractor shall agree with the Engineer the value of any variations outstanding and as soon as possible thereafter submit to the Engineer his final statement of account showing the total sum claimed sub-divided as follows:

Statement A - detailing the tender amounts less the Prime Cost and Provisional Sums, included therein.

Statement B - detailing all the variation orders issued on the contract.

Statement C - Summarizing statement A and B giving the net grand total due to the Contractor for the execution of the Contract.

**1.51 Fair Wages**

The sub-contractor shall in respect of all persons employed anywhere by him in the execution of the sub-contract, in every factory, workshop or place occupied or used by him for execution of the Contract, observe and fulfill the following conditions:

- a) The sub-contractor shall pay rates of the wages and observe hours and conditions of labour not less favourable than those established for the trade or industry in the district where work is carried out.
- b) In the absence of any rates of wages, hours or conditions of labour so established the sub-contractor shall pay rates and observe hours and conditions of labour are not less favourable than the general level of wages, hours and conditions observed by other employers whose general circumstances in the trade or industry in which the Contractor is engaged are similar.

**1.52 Supervision**

During the progress of the works, the Sub-contractor shall provide and keep constantly available for consultation on site an experienced English - speaking Supervisor and shall provide reasonable office facilities, attendance, etc., for the Supervisor.

In addition, during the whole of the time the works are under construction, the sub-contractor shall maintain on site one experienced foreman or charge-hand and an adequate number of fitters, etc., for the work covered by the Specification. The number of this staff shall not be reduced without the prior written approval of the Project manager or Engineer.

Any instructions given to the Supervisor on site shall be deemed to have been given to the sub-contractor.

One copy of this Specification and one copy of each of the Contract Drawings (latest issue) must be retained on site at all times, and available for reference by the Engineer or sub-contractor.

**1.53 Test Certificates**

The Sub-contractor shall provide the Engineer with three copies of all test reports or certificates that are or may be required by this Specification.

**1.54 Labour**

The Sub-contractor shall provide skilled and unskilled labour as may be necessary for completion of the contract.

**1.55 Discount to the Main Contractor**

No discount to the Main Contractor will be included in the tender for this installation.

**1.56 Guarantee**

The whole of the work will be guaranteed for a period of six months from the date of the Engineer's certification of completion and under such guarantee the Sub-contractor shall remedy at his expense all defects in materials and apparatus due to faulty design, construction or workmanship which may develop in that period.

**1.57 Direct Contracts**

Notwithstanding the foregoing conditions, the Government reserves the right to place a "Direct Contract" for any goods or services required in the works which are covered by a P.C Sum in the Bills of Quantities and to pay for the same direct. In any such instance, profit relative to the P.C Sum in the priced Bills of Quantities will be adjusted as deserved for P.C Sum allowed.

**1.58 Attendance Upon the Tradesmen etc**

The Contractor shall allow for the attendance of trade upon trade and shall afford any tradesmen or other persons employed for the execution of any work not included in this contract every facility for carrying out their work and also for the use of ordinary scaffolding. The contractor however, shall not be required to erect any special scaffolding for them.

**1.59 Trade Unions**

The contractor shall recognize the freedom of his work people to be members of trade unions.

**1.60 Local and other Authorities notices and fees**

The contractor shall comply with and give all notices required by any Regulations, Act or by Law of any Local Authority or of any Public Service, Company or Authority who have any jurisdiction with regard to the works or with those systems the same are or will be connected and he shall pay and indemnify the Government against any fees or charges legally demandable under any regulation or by-law in respect of the works; provided that the said fees and charges if not expressly included in the contract sum or stated by way of provisional sum shall be added to the contract sum.

The contractor before making any variation from the contract drawings or specification necessitated by such compliance shall give the Project Manager written notice specifying and giving the reason for such variation and applying for instructions in reference thereto.

If the contractor within seven days of having applied for the same does not receive such instructions, he shall proceed with the works in conforming to the provision regulation or by-law in question and any variation thereby necessitated shall be deemed to be a variation in accordance to the conditions of contract.

**1.61 Assignment or subletting**

The contractor shall not without the written consent of the Project Manager assign this contract or sublet any portion of the works, provided that such consent shall not be unreasonably withheld to the prejudice of the contractor.

**1.62 Partial Completion**

If the Government shall take over any part or parts works, apparatus, equipment etc. then within seven days from the date on which the Government shall have taken possession of the relevant part, the Project Manager shall issue a Certificate stating his estimate of the approximate total value of the works which shall be the total value of that part and practical completion of the relevant part shall be deemed to have occurred, and the Defects Liability Period in respect of the relevant part be deemed to have commenced on the date Government shall have taken possession thereof.

The contractor shall make good any defects or other faults in the relevant part that had been deemed complete.

The contractor shall reduce the value of insurance by the full value of the relevant part

The contractor shall be paid for the part of works taken possession by the Government

**1.63 Temporary Works**

Where temporary works shall be deemed necessary, such as Temporary lighting, the contractor shall take precaution to prevent damage to such works.

The contractor shall include for the cost of and make necessary arrangements with the Project Manager for such temporary works. For temporary lighting, electricity shall be metered and paid for by the contract

**1.64 Patent Rights**

The contractor shall fully indemnify the Government of Kenya; against any action, claim or proceeding relating to infringement of any patent or design rights, and pay any royalties which may be payable in respect of any article or any part thereof, which shall have been supplied by the contractor to the Project Manager. In like manner the Government of Kenya shall fully indemnify the contractor against any such action, claim or proceedings for infringement under the works, the design thereof of which shall have been supplied by the Project Manager to the contractor, but this indemnify shall apply to the works only, and any permission or request to manufacture to the order of the Project Manager shall not relieve the contractor from liability should he manufacture for supply to other buyers.

**1.65 Mobilization and Demobilization**

The contractor shall mobilize labour plant and equipment to site according to his programme and schedule of work. He shall ensure optimum presence and utilization of labour, plant and equipment. He should not pay and maintain unnecessary labour force or maintain and service idle plant and equipment. Where necessary he shall demobilize and mobilize the labour, plant and equipment, as he deems fit to ensure optimum progress of the works and this shall be considered to be a continuous process as works progress. He shall make provision for this item in his tender. No claim will be entertained where the contractor has not made any provision for mobilization and demobilization of labour, plant and equipment in the preliminary bills of quantities or elsewhere in this tender.

**1.66 Extended Preliminaries**

Where it shall be necessary to extend the contract period by the Project manager the contractor shall still ensure availability on site, optimum labour, materials, plant and equipment. The contractor shall make provision for extended preliminaries, should the contract period be extended and this shall be in a form of a percentage of the total Contractor works. Where called upon in the Appendix to these Preliminaries the Contractor shall insert his percentage per month for extended preliminaries that shall form basis for compensation.

Lack of inserting the percentage shall mean that the sub-contractor has provided for this requirement elsewhere in the Bills of Quantities.

### **1.67 Supervision by Engineer and Site Meetings**

A competent Project Engineer appointed by the Engineer as his representative shall supervise the Contract works. The Project Engineer shall be responsible for issuing all the site instructions in any variations to the works and these shall be delivered through the Contractor with the authority of the Project Manager. Any instructions given verbal shall be confirmed in writing.

The project engineer and (or) the Engineer shall attend management meetings arranged by the Project Manager and for which the Contractor or his representative shall also attend. For the purpose of supervising the project, provisional sums are provided to cover for transport and allowances. The Contractor shall in his tender allow for the provision of management meetings and site inspections, as instructed by the Engineer, and also profit and attendance on these funds. The funds shall be expended according to Project Manager's instructions to the contractor.

### **1.68 Amendment to Scope of Contract Works**

No amendment to scope of sub-contract works is expected and in case of amendment or modification to scope of work, these shall be communicated to all tenderers in sufficient time before the deadline of the tender submission. However during the contract period and as the works progress the Project Manager may vary the works as per conditions of contract by issuing site instructions.

No claims shall be entertained on account of variation to scope of works either to increase the works (pre-financing) or reduction of works (loss of profit-see clause 1.70)

### **1.69 Contractor Obligation and Employers Obligation**

The sub-contractor will finance all activities as part of his obligation to this contract. The employer shall pay interim payment for materials and work completed on site as his obligation in this contract, as the works progresses. No claims will be entertained for pre-financing of the project by the sub-contractor, or for loss of profit (expectation loss) in case of premature termination, reduction or increase of works as the sub-contractor shall be deemed to have taken adequate measures in programming his works and expenditure and taken necessary financial precaution while executing the works. No interest shall be payable to the Contractor, except as relates to late payment as in the conditions of contract clause 23.3. The contractor shall where called upon, insert his price to compensate for any of the occurrence stated here (premature termination, reduction or increase of works), as a percentage of the contract sum in the Appendix to this section.

1.70 **APPENDIX TO SUB-CONTRACT PRELIMINARIES AND GENERAL CONDITIONS**

**1. ADD TO CLAUSE 1.17**

Prices quoted shall include **16% VAT**

In accordance with current Government policy, the **3% Withholding Tax** and **6% advance V,A.T** shall be deducted from all payments made to the sub-contractor, and the same shall subsequently be forwarded to the Kenya Revenue Authority (KRA). The applicable taxes shall be varied according to the Act and Regulations in force.

# **PART 02:**

## **PARTICULAR SPECIFICATIONS FOR ICT & SECURITY INSTALLATIONS**

**STRUCTURED  
CABLING  
PARTICULAR  
SPECIFICATIONS**



## **2a. PARTICULAR SPECIFICATIONS FOR STRUCTURED CABLING INSTALLATIONS**

### **1. SCOPE**

The scope of the contract is twofold namely supply, deliver, install, test and provide certification for a complete and fully operational structured cabling system and to perform the disconnections, removal, relocations etc. of the existing telephone and computer installations.

This will involve backbone connection from the server in the Computer room to the new GIBIC/switches and Horizontal cabling from the administration cabinet

The structured cabling shall be of star topology.

The entire installation shall be purely [Cat 6A \(Unless Otherwise stated in the Bills of Quantities\)](#) structured cabling.

All necessary accessories shall be inclusive.

### **2. DEFINITIONS & INTEPRATION OF ICT TERMS**

The terms, phrases and abbreviations shall be deemed to have the following meanings wherever used hereinafter and in all contract documents.

**Data Point:** Shall in the case mean an installation complete with data cable linked from the patch panel in the respective area cabinet to the outlet via the pathways installed by others to close proximity of the desk but excluding the faceplate.

**Telephone / Voice Point:** Shall in the case mean an installation complete with telephone cable linked from the patch panel in the respective area cabinet to the outlet via the pathways installed by others to close proximity of the desk but excluding the faceplate.

### **3. DATA OUTLETS & CABLING**

Data outlets cabling shall be as [CAT 6A](#) UTP requirements and as specified in ISO 11801.

The data outlets cabling shall be drawn in trunking or conduits and the points mounted on trunking faceplates, wall recessed patress boxes, floor outlet communications stations, floor mounted pedestals or floor boxes.

The trunking and pedestals are to be supplied and installed by others unless otherwise specified in bills of quantities.

The UTP data outlet jacks shall feature 110, Krone LSA or universal style insulation displacement connectors.

The same tools required for termination of the patch panels shall be used for the data jacks.

All the [Cat 6A](#) Snap-in data jacks shall be fully compliant with category 6A TSB 40A requirements.

#### **4. TELEPHONE OUTLETS & CABLING**

This shall involve drawing of telephone multicore cable from the supply undertaking termination point to the main distribution center and the necessary terminations from the distribution terminal to the administration cabinet.

Cabling shall be done to the various RJ45 work area outlets using [Cat 6A UTP](#) or [SC TP 4](#) pair stranded cable.

The telephone outlets cabling shall be drawn in trunking or conduits and the points mounted on trunking faceplates, wall recessed patch boxes, floor outlet communications stations, floor mounted pedestals or floor boxes.

The trunking and pedestals are to be supplied and installed by others unless otherwise specified in bills of quantities.

The UTP data outlet jacks shall feature 110, Krone LSA or universal style insulation displacement connectors.

The same tools required for termination of the patch panels shall be used for the data jacks.

All the [Cat 6A](#) Snap-in data jacks shall be fully compliant with category 6A TSB 40A requirements.

#### **5. BACKBONE & HORIZONTAL CABLING**

[Cat 6A](#), Unscreened Twisted pair (UTP) 4 pair Copper cables conforming to EIA/TIA 568A and ISO 11801 Standards, radiate from the administration cabinet in the server room to the various works areas.

[Cat 6A](#) UTP 4 pair copper cables should be laid in trunking / Conduits from the Hubs to the data outlets.

[Cat 6A](#) UTP 4 pair copper cables should be laid in trunking / conduits from the patch panels to the telephone outlets as shown on the drawing.

Cable installations should be carried out by trained cable technicians skilled in the installation of telecommunications cables and use of associated tools such as IDC punch down tools and hand cables held cable testers.

Maximum pulling forces should not be infringed during installation to avoid cable damage or performance impairment. Recommended minimum bending radius during and after installation should be adhered to.

It is important to minimize the twisting of cable during installation and cables must never be laid off over the flange of a cable reel.

During installation, cable management precautions that should be observed include the elimination of cable stress caused by tension, sharp bends and tightly bunched cables.

Cables should be dressed into neat groups and fixed into place whether in trunking, cable tray or cabinet, using nylon cable ties. Cable ties should be fitted at 300mm centers and should be fitted with just enough tension, such as not to deform cables.

Installed cables should be clearly identified at both ends with printed self-laminated wrap round labels.

During installation and subsequently, care should be taken to prevent damage to the cabling and especially where cables are exposed in cable trays.

## **6. PATCHCORDS**

All Patch cords shall be factory fabricated

**CAT 6A** stranded 4 pair UTP RJ45 connector terminated cables shall be provided as per the specified lengths in the bills of quantities

## **7. PATCH PANELS**

**Cat 6A** UTP patch panels shall be used.

Patch Panels shall be able to fit into any standard 19-inch equipment rack, secured to the rack firmly with nuts and bolts at all the four corners.

## **8. NETWORK SWITCHES**

The network switches used shall be able to support Gigabit speeds and will have power over Ethernet capability, UTP Star cabling topology, preferably a switching hub capable of being set up as a Virtual LAN (V-LAN) and compatible with any existing LAN Management devices.

The new network switches should have a minimum of (24No) twenty-four UTP cable connections employing standard RJ45 female connectors plus one (1No.) GIBIC Fast Ethernet port for stacking or connecting to the backbone.

All the ports shall be individually numbered.

## **9. EQUIPMENT CABINETS**

The work-group network or switches and patch panels arrangement shall be housed in an equipment cabinet/rack to be supplied by the sub – contractor to be appointed.

The cabinet should be constructed to enhance cooling and ventilation.

Cabinets shall be required to have the following:

### a) Front Doors

- For Server room Free Standing cabinets, the front door shall be perforated (75%) Arc-Fold with Swing
- For other wall mount cabinets, the front door shall be made of Tempered glass

- b) Rear Doors
  - For Free Standing Cabinets they shall have 1 x Double-section Full Perforation with Swing Handle Lock (Hexagon Honey-Comb)
- c) Side doors
  - For Free Standing Cabinets they shall have 2 x Lift Off Type with Quick Release Catch & Cam Lock
  - For Wall Mounted Cabinets they shall have 2 x Lift Off Type with Quick Release Catch & Cam Lock
- d) Top Tray - 6 x 4-inch Top Fan Tray with Guard & Filter (Low Noise)
- e) Frame – Shall be Full Vented Top Frame with Front / Rear / Side Cable Entrance
- f) Finish – Shall be as Epoxy Powder Coating (RAL 9004 Black)
- g) Complete with Cable Management, Lock & Key, Panel Mounts, Base frame with provision for cable entrance, Set of Heavy Duty Castor wheels, Set of Levelling stands
- h) 12 Way Power Distribution unit with 13A UK Sockets for 240V and all other accessories required.

## **10. EARTHING**

All data equipment cabinets must be earthed for safety.

All earth conductors shall be colour coded as green or green & yellow insulated

All earth conductors shall be made of copper.

Each cabinet must have its own specific conductor connecting it to earth. Serial connections from one cabinet to another are not allowed.

Each patch panel installed in the data cabinet should also be earthed to the cabinet using a separate conductor.

## **11. TESTING**

The installation shall be Tested and Certified **CAT 6A** compliant per ISO 11801 requirements.

The test must include but not limited to:

- Basic link test
- Attenuation
- Attenuation to Cross Talk Ratio (ACR)
- Near End Cross Talk (NEXT)
- Wire map
- Cable length
- Impedance

Every single cable must be tested in both directions.

**2b. PARTICULAR QUALIFICATION FOR STRUCTURED CABLING BIDDERS**

**TABLE 01:**

**NOTE:** All Attachments should be bound in 1No. document with fliers separating the particular sections which shall be presented as part of the Bid. **Presentation shall follow the order stated below.**

<b>BIDDERS REQUIREMENTS</b>			
Item	Feature	Minimum Requirements	Bidder's Response / Comment ( or X )
<b>A</b>	<b><u>MANDATORY REQUIREMENTS FOR BID EVALUATION</u></b>		
<b>A1</b>	<b>Company / Firm Registration Certificate</b>	Attach Certificate	
<b>A2</b>	<b>Registration with Relevant Bodies &amp; Category as Applicable</b>		
	<b>(Note: For any document Listed, Documentary Evidence of the Certificate Should be attached)</b>		
		NCA	
		LOCAL AUTHORITY	
		P.I.N. Registration Certificate	
		VAT Registration Certificate	
		Tax Compliance Certificate	
		<a href="#">CCK</a>	
		<a href="#">Manufacturers Authorization Letter</a>	
		OTHER (Fill in Pen)	
<b>A3</b>	<b>Company Profile</b> A detailed soft company profile indicating the principle place of business MUST be attached to the Bid (Hard Copy or Soft copy in CD / USB Flash drive)	Attach Copy	
<b>A4</b>	<b>Power of attorney of signatory of Bid (if Joint Venture)</b>	Attach Copy	
<b>A5</b>	<b>Long Lead Items Program of Works:</b> Bidder to attach a Proposed program (Work method and schedule), Descriptions, drawings, and charts, as necessary, which show the lead times for the long lead items timelines	Attach	

<b>BIDDERS REQUIREMENTS</b>			
<b>Item</b>	<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b>A6</b>	<b>Indicate Total Annual Revenue of Construction work performed in the last 3 years in KShs.</b> <ul style="list-style-type: none"> <li>• Attach Proof of Financial Statements</li> <li>• Attach Bank Contacts: Name, Address &amp; Telephone Numbers of the banks that may provide references if contacted by Employer</li> </ul>		
		2014	
		2015	
		2016	
<b>B</b>	<b><u>OTHER REQUIREMENTS</u></b>		
<b>B1</b>	<b>Brochures of Equipment's offered</b>	Attach with all details	
<b>B2</b>	<b>Financial Resources Access:</b> <ul style="list-style-type: none"> <li>• Evidence of access to Financial Resources to meet the qualification requirements: cash in hand, lines of credit, etc.</li> <li>• List here as appropriate &amp; Note that Proof in Documentary Evidence may be require to be provided upon request</li> </ul>	Attach	
<b>B3</b>	<b>Equipment Guarantee (By bidder) and warranty period specified by manufacturer</b> <b>Note:</b> Minimum of 24 Months is required <b>Note:</b> Schedule to be attached of all equipment on warranty	Attach:  Note: Warranty shall be specific from date of completion of project.	
<b>B4</b>	<b>Annual Maintenance Charges</b> <ul style="list-style-type: none"> <li>• After Expiry of DLP and Warranty Period, Indicate the proposed charges to be levied for annual maintenance of equipment &amp; accessories</li> <li>• NOTE: The above are to be Labour only charges excluding parts which shall be fitted only with prior approval by the client.</li> </ul>		
		1 <sup>st</sup> Year (KShs.)	<b><u>Kshs.</u></b>
		2 <sup>nd</sup> Year (KShs.)	<b><u>Kshs.</u></b>
		3 <sup>rd</sup> Year (KShs.)	<b><u>Kshs.</u></b>
<b>B5</b>	<b>Foreign Currency</b>	State Foreign currency used in the pricing (if any) and rate of exchange to KShs.	1..... (Foreign Currency)  = ..... KShs.

<b>BIDDERS REQUIREMENTS</b>			
<b>Item</b>	<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b>B6</b>	<b>Response Time</b>	In event of emergency, the response time shall be how many hours (Preferred is 3 Hours)	..... <b>Hours</b>
<b>B7</b>	<b>Delivery Period of Equipment from Date of Award (Fill Where Applicable)</b>		
		Days	
		Weeks	
		Months	
		Years	
<b>B8</b>	<b>Delivery Period of Site Works from Date of Award (Fill Where Applicable)</b>		
		Days	
		Weeks	
		Months	
		Years	

**TABLE 02:**

<b>1.11</b>	<b>Work of a similar nature and volume performed as Prime Contractor over the last five years. The values should be indicated in the same currency used above. Also list details of work under way or committed, including expected completion date.</b>			
PROJECT NAME & COUNTRY	CLIENT / CONTACT PERSON	LEAD CONSULTANT	TYPE OF WORK DONE & YEAR OF COMPLETION	CONTRACT VALUE (KShs.)

**TABLE 03:**

<b>1.12</b>	<b>Qualification and experience of key personnel proposed for administration and execution of the Contract. Attach biographical data.</b>		
POSITION	NAME	QUALIFICATIONS	YEARS OF EXPERIENCE IN PROPOSED POSITION
<b>PROJECT MANAGER</b>			
<b>SITE FOREMAN</b>			
<b>OTHER(S)</b>			



**TABLE 04:**

1.13 Proposed contracts and firms involved.			
SECTION OF THE WORKS	VALUE OF CONTRACT	CONTRACTOR (NAME & ADDRESS)	EXPIRIENCE IN SIMILAR WORK

**TABLE 05:**

1.14 Information on current litigation in which the Bidder is involved.		
OTHER PARTY(IES)	CAUSE OF DISPUTE	AMOUNT INVOLVED

**TABLE 06:**

<b>1.15</b>	<b>Additional Requirements:</b>	
	Bidders should provide any additional information required in these documents to fulfill the requirements thereof if applicable	

Signed (As in form of Tender) \_\_\_\_\_

Official Stamp & Date \_\_\_\_\_

## **2c. SPECIAL NOTES TO ALL STRUCTURED CABLING TENDERERS**

1. **CONTRACT TYPE:** This is a fixed price Contract and no claims shall be entertained on whatever ground. The Contractor is advised to include all such costs as he projects may arise in his unit rates. Any variations in the exchange rate will also be no excuse for any variations in the contract sum.
2. **COPYRIGHT:** The copyright of this specification is vested in the Engineers and no part thereof may be reproduced without their express permission, given in writing.
3. **CURRENCY:** The specifications must be priced in [Kenya Currency i.e. Shillings and Cents](#) unless Otherwise as may be expressly stated
4. **QUALIFICATION:** The tenderer shall not otherwise qualify the text of this specification. Any alteration or qualification made without authority will be ignored and the text of the specification as printed adhered to.
5. **BILLS OF QUANTITIES:** The Bills shall be read in conjunction with the Preliminaries, General Conditions of Contract, Technical Specifications and Drawings
6. **PAGES IN DOCUMENT:** The tenderer is required to check the number of pages in this document and should any be found to be missing or the figures indistinct, he/she must inform the Engineers at once and have the same rectified. Should the tenderer be in doubt the precise meaning of any item, word or figures or for any reason whatsoever observe any apparent omission of words or figures, he must inform the Engineers in order that the correct meaning may be decided upon before the date for the submission of the tenders.
7. **RATES & PRICES:** The rates and prices tendered in the priced Bills of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Plant, equipment, labor, supervision, materials, erection, maintenance, insurance, profit, together with all general risks, liabilities and obligations set out or implied in the Contract, including taxes and duties (including V.A.T). The quantities given are provisional and are for guidance only. The whole works shall be re-measured upon practical completion.
8. **FILLING OF RATES:** A rate or price shall be entered against each item in the priced Bills of Quantities, whether quantities are stated or not. The cost of items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bills of Quantities.
9. **PRICE ALLOWANCES:** The tenderer shall be deemed to have made allowances in his unit prices generally to cover items of preliminaries or additions to prime cost Sums or other items priced against the respective items.
10. **TAXES:** The tenderer's price shall include all government taxes including duties, VAT, etc. No claims whatsoever will be allowed if the tenderer does not price them as aforementioned. VAT must be calculated for all sums as filled in the document which includes contingencies, PC Sums etc.
11. **COST:** The whole cost of complying with the provision of the Contract shall be included in the Items provided in the Bills of Quantities, and where no items are provided the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.
12. **TENDER EXPENSES:** In no case will expense incurred by the tenderer in preparation of this tender be reimbursed.

13. **REFERENCES:** General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bills of Quantities. Reference to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bills of Quantities.

14. **PC SUMMS & CONTINGENCIES:** Provisional Sums and contingencies included and so designated in the Bills of Quantities shall be expended in whole or in part at the sole discretion of the Engineer.

Under no circumstances shall the contingencies in the BQ be used to cater for contractor’s omissions or underquoting of items listed in the Bills.

Under no Circumstances shall the contractor claim any costs e.g. profits, attendance, etc. connected to the PC sums and contingencies if the client were to remove the PC Sum item

15. **ERRORS:** No liability whatsoever will be admitted nor claim allowed in respect of errors in the completed tender due to mistakes in this document which should have been rectified in the manner described above.

Errors in pricing will be corrected by the Engineer for any arithmetic errors in computation or summation as follows: -

a) Where there is a discrepancy between amounts in figures and in words, the amount in words will govern; and

b) Where there is a discrepancy between the unit rate and the total amount derived from the multiplication of the unit price and the quantity, the unit rate as quoted will govern, unless in the opinion of the Engineer, there is an obviously gross misplacement of the decimal point in the unit prices, in which event the total amount as quoted will govern and the unit rate will be corrected.

16. **MATERIALS ORDERING:** The Contractors shall be solely responsible for the accurate ordering of materials in accordance with the drawings and these specifications.

17. **CLIENT SUPPLY ITEMS:** The client has the right to choose between the contractor to supply specific fittings / items as specified and the fittings / items being a direct procurement by the client.

Under no Circumstances shall the contractor claim any costs e.g. profits, attendance, etc. connected to the “Client Supplied” items if the client were to Omit any items noted as “Client Supply” in the Bills

Signed (As in form of Tender) \_\_\_\_\_

Official Stamp & Date \_\_\_\_\_

**SECURITY**

**PARTICULAR**

**SPECIFICATIONS**

## **2d. PARTICULAR SPECIFICATIONS FOR SECURITY INSTALLATIONS**

### **CCTV PARTICULAR SPECIFICATIONS**

#### **SPECIFIC NOTES TO TENDERERS**

##### **EXTENT OF INSALLATION**

The Contractor shall carry out all the necessary works for successful installation of the services mentioned as described and set out in the technical specifications, Bills of Quantities and accompanying drawings to the satisfaction of the consulting engineers.

This will include the supply & delivery of equipment, fix, install, connect, test, label, commissioning & the associated labour to a clean and neat working system that meets every detail as described in the specification

##### **WARRANTIE**

- All equipment supplied under the scope, including all associated installations shall be warranted by the manufacturer against electronic failure for the duration specified in the specifications and if possible, a lifetime warranted against Electronic & Programming failure. ("Lifetime" means that if the electronics & programming should fail at any time it will always be replaced).
  
- The **bidder to specify the recommended lifespan (if any)** of the system by which date replacement of the entire system is recommended.

##### **SYSTEM SPECIFICATIONS**

The items described in the schedules to be priced are to meet the under listed minimum specifications and of the stated model or equal and approved:

#### **BMS CONNECTION**

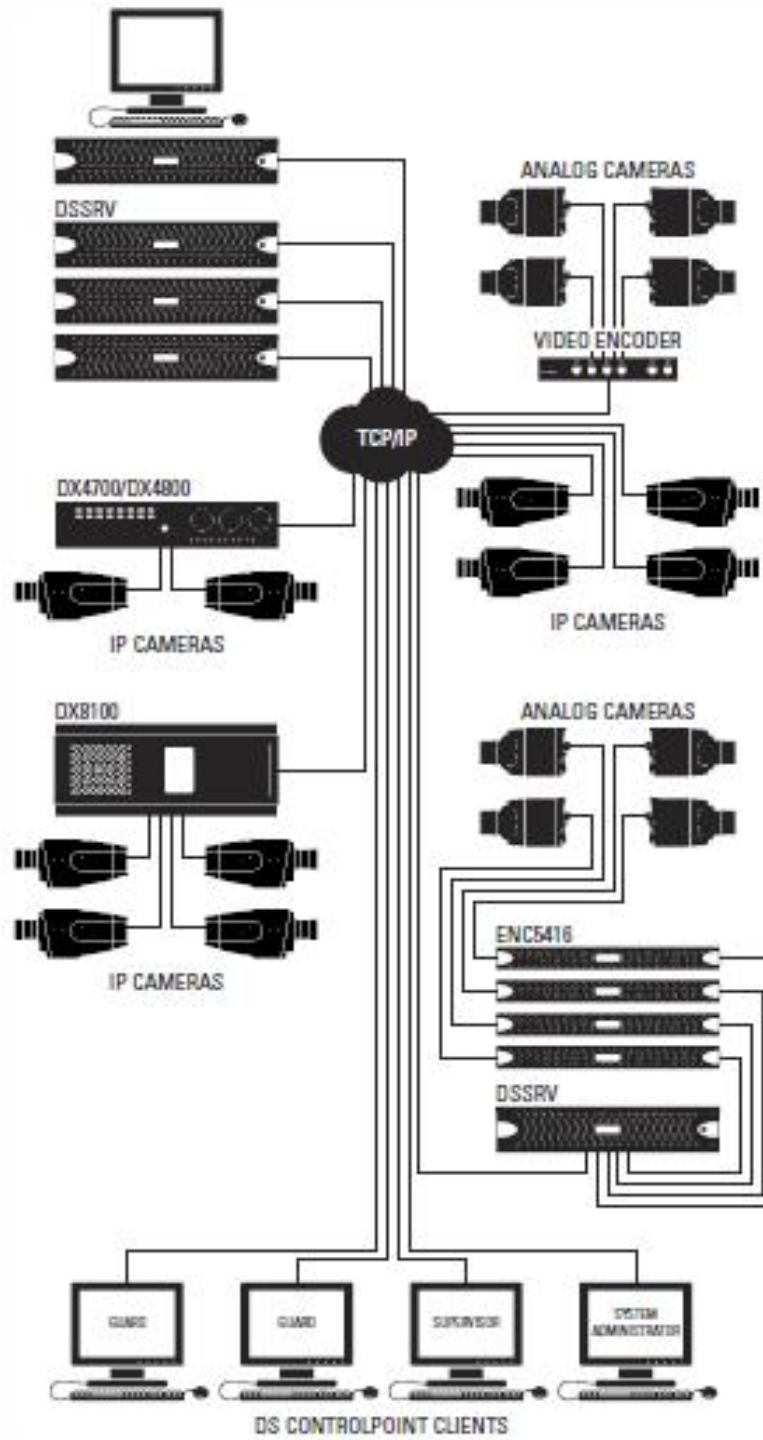
The CCTV system should be BMS compatible

The BMS protocol to be used is to be “BACNET IP protocol”

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## EQUIPMENT

### CCTV ARCHITECTURE



## **CCTV CAMERAS & SYSTEMS**

The CCTV Cameras & Systems to be quoted for in this document should have the following as a minimum and should be included in the costs. They should be:

- POE (Power over Ethernet) Capable, 12VDC or 24VAC power options unless otherwise stated
- Complete with appropriate bases
- Complete with appropriate brackets for wall mounting where applicable
- Complete with appropriate brackets for pendant mounting where applicable
- Complete with appropriate junction boxes, adapters, etc. where applicable.
- Having a password protection option.
- Contain a built-in web server making video and configuration available to multiple clients in a standard browser environment using HTTP, without the need for additional software.
- Operating software should NOT have annual renewable licenses.
- Shall not require any additional software to operate, and shall support full functionality when operating in the applied environment i.e. MS Internet Explorer 8.x or higher on Windows 7 or higher.
- Supporting both fixed IP addresses and dynamically assigned IP addresses provided by a Dynamic Host Control Protocol (DHCP) server.
- Able to allow event functions to be configurable via the web interface.
- Able to provide embedded on-screen text with support for date & time, and a customer-specific text, camera name, of at least 45 ASCII characters.
- Able to accept external time synchronization from an NTP (Network Time Protocol) server.
- Able to provide the ability to apply a privacy mask to the image.
- Able to allow for the overlay of a graphical image, such as a logotype, into the image.
- Able to allow all customer-specific settings to be stored in a non- volatile memory and shall not be lost during power cuts or soft reset.
- Able to provide a connection list of all currently connected viewers. The file shall include information about connecting IP address, time of connecting and the type of stream accessed.
- Able to be monitored by a Watchdog functionality, which shall automatically re-initiate processes or restart the unit if a malfunction is detected.
- Be replaceable and available in a number of different colours to match interior design.

The CCTV Cameras should support the following protocols as a minimum:

- TCP/IP, UDP/IP (unicast, multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/ v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, and 802.1x (EAP)

The CCTV Cameras should be supported by the following Certifications, Ratings & Patents as a minimum:

- CE, class A
- FCC, class A
- UL/cUL listed
- C-Tick



- US Patents 5,931,432; 6,793,415 B2; 6,802,656 B2; 6,821,222 B2
- Meets NEMA Type 4X and IP66 Standards when installed properly (B52-F-E and B52-PG-E)
- ONVIF Profile S
- Environmental models: IEC 60068-2-1 / 2 / 6 / 14 / 27 / 30 and 78

### **CCTV CABLING**

The CCTV cabling should follow the following guidelines:

- i.) Cabling should be done in CAT 6A Cables shielded UTP cables
- ii.) Cabling should be housed in conduits
- iii.) Cabling Should be done with ease of installation through identical wiring methods
- iv.) Maximum cabling distance shall not be more than 100m from a switch

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Kindly, **tick ( )** where it meets and **cross (X)** where it does not meet specifications on the appropriate tables below.

### **CCTV MODEL 01: Internal Indoor IP Dome Camera (80 Degree View)**



The camera should meet the following specifications.

<b>Internal Indoor IP Dome Camera (80° View)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Application</b>	Indoor IP	
<b>View Angle</b>	80 Degree Minimum	
<b>Day/Night</b>	Day/Night Capability	
<b>Frames per second</b>	Up to 30 Images per Second (IPS) at 1080p	
<b>Tampering</b>	Should Have Tampering detection (Blurring, Blinding & Scene Change)	
<b>Construction</b>	Die Cast Aluminum, Polycarbonate Bubble	
<b>Durability</b>	IP66 Ingress Protection, IK10 (20J) impact resistance	
<b>Finish</b>	Preferable Light Gray (RAL 7035) with Satin Texture	
<b>Mounting</b>	Adjustable stand / clamp for easy mounting	
<b><u>CAMERA</u></b>		
<b>Max Resolution</b>	5 Megapixel (MPx) 2592 x 1944 (5.0 MPx) Resolution	
<b>Image sensor</b>	1/3.2-inch CMOS	
<b>Electronic Shutter</b>	Range of 1/5 to 1/10,000 sec	
<b>Dynamic Range</b>	65dB WDR (Wide Dynamic Range ) at full resolution	
<b>Noise Reduction</b>	Yes (ON / OFF Selectable ) Digital	
<b>Illumination</b>	0.30 lux @ f/1.2 for Color	
<b>IR Illumination</b>	Integrated Adaptive IR Illumination upto 15m, auto ON in Night mode or OFF	
<b>Lens</b>	3-9 mm, Varifocal	
<b>Focus</b>	Autofocus	
<b><u>VIDEO</u></b>		
<b>Video Streams</b>	Up to 2 Simultaneous Video Streams	
<b>Video Analytics</b>	Motion Detection and Camera Sabotage Analytics	
<b>Aspect ratio</b>	4:3 @ 5MPx	
<b>Video Encoding</b>	H.264 and MJPEG Compression Capability	
<b><u>ELECTRICAL</u></b>		
<b>Network Port</b>	RJ-45 connector for 100Base-TX	
<b>Power Input</b>	Power over Ethernet PoE (IEEE 802.3af) or 24 VAC Power Input	
<b>Power Consumption</b>	15W Maximum	
<b>Local Storage</b>	Accessible Edge Storage with Micro SD Card (32GB)	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +50°C (-40°F to 122°F)	
<b><u>INTEGRATION</u></b>		
<b>Compatibility</b>	Compatible with Third-Party Video Systems	
<b>Connectivity</b>	ONVIF Profile S Standard Conformant or equivalent	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	

**CCTV MODEL 02: Panoramic IP Dome Camera (180 Degree View) - Indoor / Outdoor**



The camera should meet the following specifications.

<b>Panoramic IP Dome Camera (180<sup>0</sup> View) - Indoor / Outdoor</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Application</b>	Indoor or Outdoor IP	
<b>View Angle</b>	180 Degree Minimum Panoramic View	
<b>Day/Night</b>	Day/Night Functionality with Mechanical IR cut filter	
<b>Binning Mode</b>	Binning Mode for Strong Low Light Performance	
<b>Frames per second</b>	5.2fps	
<b>Tampering</b>	Should Have Tampering detection (Blurring, Blinding & Scene Change)	
<b>Construction</b>	Die Cast Aluminum, Polycarbonate dome Bubble	
<b>Durability</b>	IP66 Ingress Protection, IK10 (20J) impact resistance dome	
<b>Finish</b>	Preferable Light Gray (RAL 7035) with Satin Texture	
<b>Mounting</b>	Adjustable stand / clamp for easy mounting	
<b>Gimbal</b>	Easily Adjustable, 2-Axis w/360 <sup>0</sup> pan and 90 <sup>0</sup> tilt. Up to 4 Individual Camera Gimbals can be independently placed in any orientation around a 3600 track with extra positions for looking straight down.	
<b><u>CAMERA</u></b>		
<b>Max Resolution</b>	12 Megapixel (MPx) 8192 x 1536 Resolution	
<b>Image sensor</b>	4 x 3MP CMOS	
<b>Resolution @Full FOV</b>	Total: 8192 H x 1536 V & Per Sensor: 2048 H x 1536 V	
<b>Resolution @ 1/4</b>	Total: 4096 H x 768 V & Per Sensor: 1024 H x 768 V	
<b>Electronic Shutter</b>		
<b>Dynamic Range</b>	100dB WDR (Wide Dynamic Range ) at full resolution	
<b>Noise Reduction</b>	Noise cancellation	
<b>Illumination</b>	0.25 lux for Color in Binning mode & 0.3 Lux for Color mode	

<b>IR Illumination</b>	Electro-Mechanical IR Cut Filter	
<b>Lens</b>	IR 8 mm, F/1.6', H-FOV = 33°	
<b><u>VIDEO</u></b>		
<b>Video Streams</b>	8 non-identical streams (2 per sensor)	
<b>Video Frame Rates</b>	Max 5.2fps (8192 x 1536) 16.7fps (4096 x 768)	
<b>Video Encoding</b>	H.264 (MPEG-4, Part 10)/Motion JPEG	
<b><u>ELECTRICAL</u></b>		
<b>Network Port</b>	RJ-45 connector for 100Base-TX	
<b>Network Interface</b>	100 Base-T Ethernet	
<b>Power Input</b>	Power over Ethernet PoE (IEEE 802.3af) or 24 VAC Power Input	
<b>Power Consumption</b>	15W Maximum	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +50°C (-40°F to 122°F)	
<b><u>INTEGRATION</u></b>		
<b>Compatibility</b>	Compatible with Third-Party Video Systems	
<b>Connectivity</b>	ONVIF Profile S Standard Conformant or equivalent	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	



**CCTV MODEL 03: Panoramic IP Dome Camera (360 Degree View) - Indoor / Outdoor**



The camera should meet the following specifications.

<b>Panoramic IP Dome Camera (360° View) - Indoor / Outdoor</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Application</b>	Indoor or Outdoor IP	
<b>View Angle</b>	360 Degree Minimum Panoramic View	

<b>Day/Night</b>	Day/Night Functionality with Mechanical IR cut filter	
<b>Binning Mode</b>	Binning Mode for Strong Low Light Performance	
<b>Frames per second</b>	5.2fps (8192 x 1536)	
<b>Tampering</b>	Should Have Tampering detection (Blurring, Blinding & Scene Change)	
<b>Construction</b>	Die Cast Aluminum, Polycarbonate dome Bubble	
<b>Durability</b>	IP66 Ingress Protection, IK10 (20J) impact resistance dome	
<b>Finish</b>	Preferable Light Gray (RAL 7035) with Satin Texture	
<b>Mounting</b>	Adjustable stand / clamp for easy mounting	
<b>Gimbal</b>	Easily Adjustable, 2-Axis w/360° pan and 90° tilt.	
<b><u>CAMERA</u></b>		
<b>Max Resolution</b>	12 Megapixel (MPx) 8192 x 1536 Resolution	
<b>Image sensor</b>	4 x 3MP CMOS all customizable	
<b>Resolution @Full FOV</b>	Total: 8192 H x 1536 V & Per Sensor: 2048 H x 1536 V	
<b>Resolution @ 1/4</b>	Total: 4096 H x 768 V & Per Sensor: 1024 H x 768 V	
<b>Electronic Shutter</b>	Programmable shutter speed	
<b>Dynamic Range</b>	100dB WDR (Wide Dynamic Range ) at full resolution	
<b>Noise Reduction</b>	Noise cancellation	
<b>Illumination</b>	0.15 lux for Color in Binning mode & 0.5 Lux for Color mode	
<b>IR Illumination</b>	IR corrected lens	
<b>Lens</b>	IR 8 mm, F/1.6', H-FOV = 33°	
<b><u>VIDEO</u></b>		
<b>Video Streams</b>	8 Non-identical Streams (2 Per Sensor)	
<b>Video Frame Rates</b>	Max 5.2fps (8192 x 1536) 16.7fps (4096 x 768)	
<b>Video Encoding</b>	H.264 and MJPEG Compression Capability	
<b><u>ELECTRICAL</u></b>		
<b>Network Port</b>	RJ-45 connector for 100Base-TX	
<b>Network Interface</b>	100 Base-T Ethernet	
<b>Power Input</b>	Power over Ethernet PoE (IEEE 802.3af) or 24 VAC Power Input	
<b>Power Consumption</b>	15W Maximum	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +50°C (-40°F to 122°F)	
<b><u>INTEGRATION</u></b>		
<b>Compatibility</b>	Compatible with Third-Party Video Systems	
<b>Connectivity</b>	ONVIF Profile S Standard Conformant or equivalent	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	

**CCTV MODEL 04: External Outdoor IP Camera (80 Degree View)**



The camera should meet the following specifications.

<b>External Outdoor IP Camera (80° View)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Application</b>	Outdoor	
<b>View Angle</b>	80 Degree Minimum	
<b>Day/Night</b>	Day/Night Capability	
<b>Frames per second</b>	Up to 30 Images per Second (IPS) at 1080p	
<b>Tampering</b>	Should Have Tampering detection (Blurring, Blinding & Scene Change)	
<b>Construction</b>	Die Cast Aluminum	
<b>Durability</b>	IP66 Ingress Protection, IK10 (20J) impact resistance	
<b>Finish</b>	Preferable Light Gray (RAL 7035) with Satin Texture	
<b>Mounting</b>	Adjustable stand / clamp for easy mounting	
<b><u>CAMERA</u></b>		
<b>Max Resolution</b>	5 Megapixel (MPx) 2592 x 1944 (5.0 MPx) Resolution	
<b>Image sensor</b>	1/3.2-inch CMOS	
<b>Electronic Shutter</b>	Range of 1/5 to 1/10,000 sec	
<b>Dynamic Range</b>	65dB WDR (Wide Dynamic Range ) at full resolution	
<b>Noise Reduction</b>	Yes (ON / OFF Selectable ) Digital	
<b>Illumination</b>	0.30 lux @ f/1.2 for Color	
<b>IR Illumination</b>	Integrated Adaptive IR Illumination upto 25m, auto ON in Night mode or OFF	
<b>Lens</b>	3-9 mm, Varifocal	
<b>Focus</b>	Autofocus Motorized Remote Zoom Lens	
<b><u>VIDEO</u></b>		
<b>Video Streams</b>	Up to 2 Simultaneous Video Streams	
<b>Video Analytics</b>	Motion Detection and Camera Sabotage Analytics	
<b>Aspect ratio</b>	4:3 @ 5MPx	
<b>Video Encoding</b>	H.264 and MJPEG Compression Capability	
<b><u>ELECTRICAL</u></b>		
<b>Network Port</b>	RJ-45 connector for 100Base-TX	
<b>Power Input</b>	Power over Ethernet PoE (IEEE 802.3af) or 24 VAC Power Input	

<b>Power Consumption</b>	15W Maximum	
<b>Local Storage</b>	Accessible Edge Storage with Micro SD Card (32GB)	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +50°C (-40°F to 122°F)	
<b><u>INTEGRATION</u></b>		
<b>Compatibility</b>	Compatible with Third-Party Video Systems	
<b>Connectivity</b>	ONVIF Profile S Standard Conformant or equivalent	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	

**CCTV MODEL 05: Outdoor PTZ (Pan, Tilt & Zoom) Camera (360 Degree View)**



The camera should meet the following specifications.

<b>Outdoor PTZ (Pan, Tilt &amp; Zoom) Camera (360 Degree View)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Application</b>	Outdoor	
<b>View Angle</b>	360° Pan rotation @ 280° per second with Tilt & Zoom Capability	
<b>Day/Night</b>	Day/Night Capability	
<b>Frames per second</b>	Up to 30 Images per Second (IPS) at 1080p	
<b>Tampering</b>	Should Have Tampering detection (Blurring, Blinding & Scene Change)	
<b>Construction</b>	Die Cast Aluminum	
<b>Durability</b>	IP66 Ingress Protection, IK10 (20J) impact resistance	
<b>Finish</b>	Preferable Light Gray (RAL 7035) with Satin Texture	
<b>Mounting</b>	Adjustable stand / clamp for easy mounting	
<b><u>CAMERA</u></b>		
<b>Max Resolution</b>	3 Megapixel (MPx) 1920 x 1080 Resolution	
<b>Image sensor</b>	1/2.8-inch Type Exmor CMOS	
<b>Optical Zoom</b>	20X	

<b>Digital Zoom</b>	12X	
<b>Dynamic Range</b>	80dB WDR (Wide Dynamic Range ) at full resolution	
<b>Noise Reduction</b>	Yes , Active Noise filtering	
<b>Illumination</b>	Sensitivity in lux for 90% reflectance, f/1.6 (wide-angle), 28 dB gain at 30 IRE (30% of signal level) with sensitivity boost OFF; 4X improvement to sensitivity with sensitivity boost ON  0.65 lux for Color (33ms) & 0.07 Lux for Color (250ms)	
<b>IR Illumination</b>	IR Cut Filter	
<b>IR Cut Filter</b>	Yes, Should be inclusive	
<b>IR Trace</b>	Yes, Should be inclusive	
<b>Lens</b>	f/1.6 ~ f/3.5 focal length 4.7mm (wide) ~ 94.0mm (tele)	
<b>Iris Control</b>	Auto Iris with Manual Override	
<b>Horizontal View Angle</b>	55.4 <sup>0</sup> (wide) ~ 2.9 <sup>0</sup> (tele)	
<b>Aspect ratio</b>	16:9	
<b><u>VIDEO</u></b>		
<b>Video Streams</b>	Up to 2 Simultaneous Video Streams	
<b>Video Analytics</b>	Motion Detection and Camera Sabotage Analytics	
<b>Aspect ratio</b>	16:9	
<b>Video Encoding</b>	H.264 and MJPEG Compression Capability	
<b><u>ELECTRICAL</u></b>		
<b>Network Port</b>	RJ-45 connector for 100Base-TX	
<b>Power Input</b>	Power over Ethernet PoE (IEEE 802.3af) or 24 VAC Nominal Power Input, 24 VDC Nominal Power Input	
<b>Power Consumption</b>	15W Maximum	
<b>Local Storage</b>	Accessible Edge Storage with Micro SD Card (32GB)	
<b><u>MECHANICAL</u></b>		
<b>Variable Speed</b>	0.1 <sup>0</sup> to 280 <sup>0</sup>	
<b>Preset Accuracy</b>	± 0.1 <sup>0</sup>	
<b>Pan Movement</b>	360 <sup>0</sup> Continuous Pan rotation	
<b>Vertical Tilt</b>	+1 <sup>0</sup> to -90 <sup>0</sup>	
<b>Manual Pan Speed</b>	0.1 <sup>0</sup> to 80 <sup>0</sup> / sec Manual Operation	
<b>Manual Tilt Speed</b>	0.1 <sup>0</sup> to 40 <sup>0</sup> / sec Manual Operation	
<b>Preset Pan Speed</b>	280 <sup>0</sup> / sec	
<b>Preset Tilt Speed</b>	160 <sup>0</sup> / sec	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +50°C (-40°F to 122°F)	
<b><u>INTEGRATION</u></b>		
<b>Compatibility</b>	Compatible with Third-Party Video Systems	
<b>Connectivity</b>	ONVIF Profile S Standard Conformant or equivalent	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	



The Equipment should be adaptable to function both as a Network Video Recorder (NVR) or a Digital Video Recorder (DVR)



The NVR should operate on a fully open architecture thus making it compatible with other manufacturer’s devices.

The NVR should:

- Be Rack-mountable
- Have enough storage capacity of information for permanent recording of all cameras for minimum of 30 days in regards with the number of cameras
- Be a fully scalable multimedia management system. This network-based system architecture should enable simultaneous monitoring of video and audio, live and recorded, from multiple stations.
- Be complete with all accessories i.e. power cords, USB Keyboard & Mouse, Bixel Key, Rack mount kits, documentation, resource and recovery discs, etc

The NVR should be supported by the following Certifications, Ratings & Patents as a minimum:

- CE, class A; Meets EN50130-4 standard requirements
- FCC, class A
- UL/cUL listed
- C-Tick

The NVR should meet the following specifications.

<b>NETWORK VIDEO RECORDER (NVR)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder’s Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Support</b>	280 Mbps ( recording, viewing & Export) to support IP and analog video	
<b>Camera Streams</b>	Supports up to 128 IP Camera Streams; up to 64 Analog Cameras per server	
<b>Software</b>	Optimized to Support Pre-Installed DS NVs Software & Integrated into the NVR Hardware	
<b>Recording</b>	Records H.264, MJPEG, and MPEG-4 IP Streams	
<b>Compatibility</b>	~ Compatible with Third-Party IP Cameras & Network Encoders ~ Compatible with DS Control Point for Simultaneous Monitoring of All DS Series and DX Series Products in a Single Client Interface ~ Compatible with the DS Archive Utility	
<b>Expandability</b>	Expandable by Networking an Unlimited Number of Servers and Encoders (Dependent on Available Network Bandwidth)	

<b>Recording</b>	Recording Rate Configurable per Individual Camera	
<b>Viewing, Control, Management</b>	Unlimited Operators	
<b>Hard Disk Drives</b>	~ Front Accessible Hard drives ~ Up to 6No. hot-swappable HDDS	
<b>Internal Storage</b>	Up to 24TB internal per server	
<b>External Storage</b>	Up to 24TB internal per server	
<b>Storage Options</b>	Capability for local or network-attached storage for backup and export	
<b>Deployment</b>	Stand-alone or network recorder	
<b><u>SYSTEM</u></b>		
<b>Processor</b>	2nd Generation Intel® Core™ i7	
<b>Operating System</b>	Windows 7 Ultimate 64-bit SP1	
<b>Internal Memory</b>	8 GB RAM	
<b>Internal Storage (JBOD or RAID 5)</b>	DS-SRV = [ 500 GB, 3 TB, 6 TB, 9 TB, 12 TB, 15 TB, or 18 TB] DS-SRV-DVD = [ 500 GB, 3 TB, 6 TB, 9 TB, or 12 TB]  (This Will be as Specified in the Bills of Quantities)	
<b>RAID Level</b>	RAID 5	
<b>External Storage</b>	Up to 24 TB JBOD or RAID 5 through DX8100HDDI (requires optional DS-SRV-SCSI card)	
<b><u>NETWORK</u></b>		
<b>Interface</b>	2 Gigabit Ethernet RJ-45 (1000Base-T)	
<b>Auxiliary Interfaces</b>	USB Ports 1 front (USB 2.0) 4 rear (2 USB 3.0; 2 USB 2.0)	
<b><u>POWER</u></b>		
<b>Power Input</b>	100 to 240 VAC, 50/60 Hz, auto ranging	
<b>Power Supply</b>	Internal	
<b>Power Consumption</b>	213W Maximum	
<b><u>CONNECTIONS</u></b>		
<b>Video Out</b>	2 DVI-D connectors	
<b>Audio Out</b>	1, 1/8-inch audio jack connector	
<b><u>FRONT INDICATORS</u></b>		
<b>Buttons</b>	Power	
<b>Indicators</b>	Unit Status            Green, amber, red Primary Network       Green, amber, red Secondary Network     Green, amber, red Software Status        Green, amber, red (based on diagnostics) Hard Disk Status        Green, red, off (behind bezel)	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of 10°C to 35°C (50°F to 95°F)	
<b>Operating Humidity</b>	20% to 80%, noncondensing	
<b>Connectivity</b>	ONVIF Profile S Standard Conformant or equivalent	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	

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**MONITOR**

The Monitor should be of High definition.



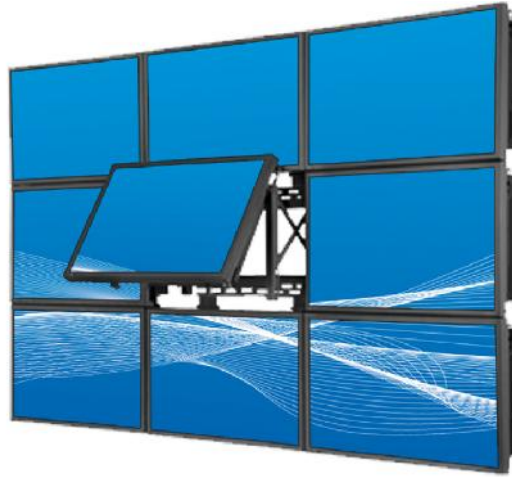
The Monitor should meet the following specifications.

<b>MONITOR</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Size</b>	32" LED Commercial Screens.	
<b>Native Resolution</b>	Minimum 1920 x 1080p full HD native resolution.	
<b>LED Backlight Technology</b>	Must use energy saving LED backlighting rather than cold cathode fluorescent lights (CCFL)	
<b>PIP</b>	Must provide picture-in-picture (PIP) for any combination of 2 inputs.	
<b>Energy Star certified</b>	Must be energy Star certified, ensuring reliability in a 24/7 security installation environment	
<b>Design</b>	Must be constructed of a lightweight aluminum frame composition for desktop or wall-mount installations.	
<b>Compliance</b>	ENERGY STAR® Level 5.1 Compliant	
<b>Response Time</b>	6.5ms Response Time (typical)	
<b>Viewing Angle (H/V)</b>	178°/178°	
<b>Refresh Rate</b>	60 Hz	
<b>Panel Life</b>	50,000 plus hours (typical)	
<b>Display Colors</b>	1.07 billion	
<b>Panel Aspect Ratio</b>	16:9	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	



**VIDEO WALL & ACCESSORIES**

The Video wall and the Network Based Graphic controller should be integrated to form a compatible system that achieves a display that is comfortable to the human eye.



The Video Wall will have key features such as:

- Almost unlimited number of cascadable displays
- Expandable for future system upgrades
- Frameless design, minimal gaps
- Optimized for video walls (profile frame, ventilation system, etc.)
- Robust metal design
- Best image quality
- Optional with sensor-based Color adjustment system for LCD video walls (EYE-LCD-CAS)

The Video Wall should meet the following specifications.

<b>VIDEO WALL</b>		
Feature	Minimum Requirements	Bidder's Response / Comment ( or X )
<b><u>VIDEO WALL SYSTEM C/W MOUNTS</u></b>		
<b>Modular-Version</b>	With stacking frame for LCD based display walls.	
<b>Mount</b>	Stackable frames enable quick and simple assembly of display walls	
<b>Gamma Correct</b>	Dynamic adjustment over the complete gamma curve	
<b>Internal Split Controller</b>	Images scalable over several modules, possible up to a matrix of 10x10 displays	
<b>Loop-through for RGB and DVI Signals:</b>	Signal loop from display to display. Customer advantage: No additional signal distributors necessary	
<b>PIP</b>	Picture-in-Picture (Video on data representation) on one display; possible with all displays of a display wall.	
<b>PSS</b>	Panel-Security-System. Security features for long-term operation to reduce the so-called image sticking effect.	
<b>PSC</b>	Panel-Self-Control. Provides various functions, such as automatic panel dimming, automatic temperature and	

	ventilation adjustments and emergency cut-out.	
<b>Control</b>	Internal control board enables the addressing and control of all functions.	
<b>PDS</b>	Panel-Database-Solution. Open interface, easy connection to other systems avoids maloperations. User-friendly GUI.	
<b>PSM</b>	Panel-Status-Monitoring. Comprehensive and detailed survey of the complete system (status messages).	
<b>Service-friendly</b>	Modular design, pluggable component connections results in short MTTR (optional: Front maintenance version).	
<b>Optimal Ventilation Concept:</b>	Ventilation ducts for air-supply and exhaust.	
<b>Technology</b>	S-PVA TFT	
<b>Display Resolution</b>	1,366 x 768 Pixel (WXGA)	
<b>Pixel Pitch</b>	0.7455 mm (H/V)	
<b>Backlight MTBF</b>	50,000 hrs.	
<b>Ambient Light Sensor</b>	Automatic adjustment to the ambient light conditions (e.g. day and night adjustment)	
<b><u>DISPLAY CHARACTERISTICS</u></b>		
<b>Colours</b>	8 Bit / 16.7 million	
<b>Aspect Ratio</b>	16:9	
<b>Viewing Angle</b>	H 178° / V 178°	
<b>Response Time</b>	8 ms	
<b>Contrast Ratio</b>	3000 : 1	
<b>Brightness</b>	typ. 500 cd/m2 (max. 700 cd/m2)	
<b><u>CONNECTORS</u></b>		
<b>Inputs</b>	Power Supply 100-250V 50/60Hz 2 x DVI IN (DVI) 2 x RGB IN (HD15 + DVI) 2 x Composite Video (BNC) 1 x S-Video (Mini-DIN 4pol) 1 x IR (Mini Jack 2.5 mm) 1 x RS232	
<b>Outputs</b>	1 x DVI-D 1 x RS232	
<b><u>DIMENSIONS</u></b>		
<b>Display</b>	with Stacking Frame 1026.6 x 580.8 x 232 mm (WxHxD)	
<b>Bezel Width</b>	2.7 mm bottom/right, 4.6 mm top/left (Active-to-Active: 7.3 mm)	
<b><u>ENVIROMENTAL</u></b>		
<b>Power Consumption</b>	300 Watt	
<b>DPMS</b>	< 1 Watt	
<b>Thermal Load</b>	230 Watt	
<b>Temperature</b>	typ. 0 - 40 °C	
<b>Humidity</b>	typ. 25 - 60 % (max. 90% RH)	
<b><u>CERTIFICATES</u></b>		
<b>EMI</b>	CE	
<b>ISO</b>	ISO 13406/2 (pixel error class 2)	
<b><u>SUPPORT &amp; LOCAL DEALERSHIP</u></b>		
<b>Authorized distributor</b>	Attach Manufacturer's Authorization Form	

<b>Warranty</b>	3 Year Manufacturer’s warranty	
<b>Support</b>	2 Years comprehensive preventive and maintenance contract	
<b>Reference</b>	At least 3 similar reference sites within country with contact number of the customer	
<b>Electrical Engineering Services</b>	Category of Registration with National Construction Authority (NCA 1 -3)	
<b>Local Support</b>	Equipped local lab and qualified/certified personnel to provide after sale support	
<b>Spares</b>	Stored locally for fast replacement and minimum down time of the system.	
<b>Standard /Rating</b>	ISO 9001	

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**NETWORK BASED GRAPHIC CONTROLLER (FOR VIDEO WALL):**



The Network Based Graphic Controller will have key features such as:

- Redundant power supply units, hot swappable
- Redundant SATA Solid State Disk with RAID1, hot swappable
- Windows Disk Imaging and Disaster Recovery, in the event of a system or disk crash, security attack or other fatal failure you can restore your entire controller within minutes - no reinstallation is required.

For the Bus system:

- The core of the system MUST be ultra-fast PCIe Switch Fabric with PCIe X4 slots and a total bandwidth of 192GB/s for transmitting Windows® information, network data, video, digital streams and graphic signals to each output card. This guarantees a very high bandwidth without decreasing frame rates when numerous inputs are displayed simultaneously

For the IP Decoder Board:

- Up to 512 video signals in one system
- Simultaneous decoding of up to 32 channels in D1 resolution per IP-decoder board
- Simultaneous decoding of up to 16 channels in full HD resolution per IP-decoder board
- Supports MPEG2, MPEG4, H264

For the RGB / DVI Inputs:

- Display of the source output in freely moveable, scalable and placeable windows on the display wall
- Up to 40 RGB/DVI input sources

For the SDI Inputs:

- Display of the source output in freely moveable, scalable and placeable windows on the display wall
- Up to 20 SDI inputs
- Video Modes: SD-SDI (480i/576i), HD-SDI (up to 1080i), 3G-SDI (up to 1080p) & 2k digital cinema modes

The Network Based Graphic Controller should meet the following specifications.

<b>NETWORK BASED GRAPHIC CONTROLLER (FOR VIDEO WALL)</b>		
Feature	Minimum Requirements	Bidder's Response / Comment ( or X )
<b><u>NETWORK BASED GRAPHIC CONTROLLER</u></b>		
<b>Operating System</b>	Win2003+2008 Server 32/64Bit, Windows 7 32/64Bit or Higher	
<b>Processor</b>	Up to two Intel® 64-bit XEON® Processors Quad Core Intel® Xeon® Processor E5606 with 2,13 GHz (optionally up to 12 core with 3,3 GHz )	
<b>RAM</b>	8GB DDR3 ECC RAM (expandable up to 64GB)	
<b>Expansion Slots</b>	7 x PCI express X8	
<b>Hard Disk</b>	SATA 3.0Gbps, Hot Swap 180GB, SSD (optional: 180 GB, RAID1 Hot Swap, optionally expandable up to 1 TB)  <b>(EXACT SPEC TO BE AS IN BILLS OF QUANTITIES)</b>	
<b>DVD-RW drive:</b>	Reading speed: DVD: 16x / CD: 48x max write speed: DVD-R: 24x / DVD+R: 24x / DVD-RW: 6x / DVD+RW: 8x / DVD-R DL: 12x / DVD+R9: 12x / CD-R: 48x / CD-RW: 32x	
<b>Ethernet</b>	2 x 10/100/1000 Mbps RJ45 Ports standard integrated	
<b>Power Supply</b>	100-240 V, 50-60Hz, 800 Watt, optional: redundant, Hot Swap	
<b>Accessories</b>	104-key keyboard, 2-key-wheel/button-Mouse, with extension cable up to 50m, DVI cable for Cubes (fiberglass) for distances up to 100m	
<b>Expansion Slots</b>	8x PCI express X4 1x PCI express X8 (up to 33 with further extension boxes)	
<b>BUS</b>	Switch Fabric with max. Bandwidth to 192GB/s	
<b>Graphic Memory</b>	512MB per card	
<b>Wall Configuration</b>	Any rectangular or non-rectangular array up to 36 display modules	
<b>Resolution</b>	640x480 up to 1920x1200 and HDTV 1080p per Output	
<b>Color Depth</b>	16/32 Bit	
<b>Output Signal</b>	DVI-I Connector (analog and digital) optional: VGA to	

	DVI-I adapter	
<b><u>VIDEO INPUT CARD</u></b>		
<b>Inputs</b>	8 x Composite oder S-Video BNC Connectors	
<b>Input format</b>	NTSC, PAL, SECAM	
<b>Decoder</b>	High-Quality Video Decoder mit De-interlacing	
<b>Scaling &amp; Display:</b>	Display of multiple video sources in any size, everywhere on the wall. Control of colour, brightness, contrast	
<b><u>DVI INPUT CARD</u></b>		
<b>Inputs</b>	2 x DVI-I / HD15	
<b>Signal Processing</b>	RGB/DVI with full Refresh; integrated Scaler	
<b>Format</b>	RGB with separate Syncs for H and V, DVI-I	
<b>Resolution</b>	Up to 1920x1200 Pixels	
<b>Pixel Format</b>	16Bit/32Bit, YUV422, RGB 8:8:8	
<b>Scaling &amp; Display</b>	Display of multiple sources of any size, everywhere on the video wall	
<b><u>IP DECODER</u></b>		
<b>Decoder</b>	32x D1 Decoder 16x HD 1080p Decoder	
<b>LAN</b>	Standard integrity 10/100/1000 Mbps RJ45 Ports	
<b>Format</b>	H264, MPEG2, MPEG4	
<b>Resolution</b>	QCIF up to Megapixels	
<b>Frame rates</b>	25/30 Frames per channel	
<b><u>SUPPORT &amp; LOCAL DEALERSHIP</u></b>		
<b>Authorized distributor</b>	Attach Manufacturer's Authorization Form	
<b>Warranty</b>	3 Year Manufacturer's warranty	
<b>Support</b>	2 Years comprehensive preventive and maintenance contract	
<b>Reference</b>	At least 3 similar reference sites within country with contact number of the customer	
<b>Electrical Engineering Services</b>	Category of Registration with National Construction Authority (NCA 1 -3)	
<b>Local Support</b>	Equipped local lab and qualified/certified personnel to provide after sale support	
<b>Spares</b>	Stored locally for fast replacement and minimum down time of the system.	
<b>Standard /Rating</b>	ISO 9001	



**JOYSTICK CONTROLLER MODULE**





The Joystick Controller Module should meet the following specifications.

<b>JOYSTICK CONTROLLER MODULE</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>LCD</b>	5" TFT touch LCD	
<b>Control</b>	Control PTZ dome cameras, DVRs and matrix switchers	
<b>Control Operation</b>	Centralized control of up to 255 units with a single controller	
<b>Connections</b>	Connect up to 16 controllers in a system	
<b>Outlook Design</b>	Ergonomic design and easy-to-use keypad	
<b>Joystick</b>	3D joystick to control PTZ function	
<b>Joystick / Jogshuttle Flexibility</b>	Detachable joystick/jogshuttle for universal use (right/left hand use)	
<b>Protocol</b>	Support for multi-protocol	
<b>Interface Use</b>	User friendly Graphical User Interface (GUI)	
<b><u>COMMUNICATION</u></b>		
<b>Interface</b>	RS-485/422 (Operating distance 1km), TTL (Matrix)	
<b>Data Port</b>	<ul style="list-style-type: none"> <li>• 8-pin RJ-45 connector (Female) (RS-485 serial port)</li> <li>• BNC (Video input, Loop through), USB 2.0 (F/W updatable)</li> </ul>	
<b>Baud Rate</b>	2,400 ~ 38,400bps	
<b>Protocol</b>	<ul style="list-style-type: none"> <li>• PTZ - Samsung-T/E, Pelco-D/P, Panasonic, Vicon, AD, Honeywell, ELMO, Bosch, GE</li> <li>• DVR - SRD, SVR</li> <li>• Matrix - SMX-25632</li> <li>• Receiver - Samsung-T</li> </ul>	
<b><u>OPERATIONAL</u></b>		
<b>LCD Display</b>	5" TFT touch LCD	
<b>Joystick</b>	3 Axis twist zoom	
<b>Jog Shuttle</b>	DVR playback control	
<b>On Screen Display</b>	English	
<b><u>ELECTRICAL</u></b>		
<b>Input Voltage</b>	12V DC	
<b>Input Current</b>	4A	
<b>Power Consumption</b>	Max 4W	
<b><u>MECHANICAL</u></b>		
<b>Dimensions</b>	459mm x 59mm x 178mm (18.07" x 2.32" x 7") Max	

<b>Weight</b>	1.5Kg (3.3 lb.) Max	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	

**WORKSTATION**

The Workstation should be compatible with current IP systems.



The Workstation should meet the following specifications.

<b>WORKSTATION</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>HARDWARE</u></b>		
<b>Processor</b>	Intel® Core™2 Quad or Intel® Core™ i5, 3.0GHz	
<b>Operating System</b>	Microsoft® Windows® 7 Professional (32 bit and 64-bit) with DirectX 11, Microsoft® Windows® XP Service Pack 3 with DirectX 9.0 or Microsoft® Windows® Vista SP2	
<b>HDD Capacity</b>	2TB	
<b>System Memory</b>	16GB minimum but expandable	
<b>Graphics Card (On client PC)</b>	Dedicated PCI/E graphics controller card with 1024 MB or greater dedicated video memory	
<b>Optical drive</b>	DVD	
<b>DVI</b>	Two DVI-I monitor outputs, USB keyboard, and mouse.	
<b>Viewing, Control, Management</b>	Shall allow any combination of live or playback video on the same monitor at the same time.	
<b>Web Browser</b>	Internet Explorer® 8.0 (or later) or Mozilla® Firefox® 3.5 ( or later)	
<b>Media Player</b>	Pelco Media Player or Quick Time® 7.6.5 for Windows XP, Windows Vista and Windows 7.	
<b>Accessories</b>	15Inch Monitor, USB Keyboard, Mouse, Desk Speakers	
<b><u>SOFTWARE INTERFACE</u></b>		
<b>Central Monitoring</b>	Through a single client user interface, a user must be able to monitor and manage all hardware devices in a system	
<b>Integration</b>	Hybrid Solution that must seamlessly Integrate analog	

	Cameras, encoders, and the latest IP technology	
<b>Third – Party Support</b>	Must support third-party applications, video analytics, and data transaction information	
<b>Monitors</b>	Must support multiple monitors	
<b>Operation</b>	Shall have Quick Sort by Device Name, IP Address, or Custom Definition	
<b>Video Authentication</b>	Shall be capable of video authentication	
<b>Video Analytics</b>	Shall support video analytics (Active Alert)	
<b>Alerts Monitoring</b>	Data from third-party devices, alarms, events, and audio shall be displayed in any window Pane	
<b>Keyboard Interface</b>	USB 2.0	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	

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**SOFTWARE**

**NOTE:** Operating software should NOT have annual renewable licenses.

The IP Video management System Software should meet the following specifications.

<b>IP VIDEO MANAGEMENT SOFTWARE</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b>Integrated VMS</b>	The IP video management system shall consist of and VMS embedded in a purpose built NVR server. The VMS shall consist of base software with individual, non-expiring licenses in the required quantity.	
<b>Updates</b>	The IP video management system software updates shall be downloadable from a publicly available website.	
<b>Support</b>	The IP video management system shall support up to 128 combined IP and analog video streams, with up to 64 direct-attached analog cameras. Analog streams shall be supported using third-party encoders.	
<b>Recording Throughput</b>	The IP video management system shall provide 280 Mbps throughput for recording of analog and IP video streams, playback and export.	
<b>Recording Streams</b>	The IP video management system shall support recording of JPEG, MPEG-4 and H.264 IP streams.	
<b>Video Streams</b>	The IP video management system shall support H.264 Megapixel video streams up to 10 Megapixel resolution with quantities based on a total system of 280 Mbps throughput for recording of analog and IP video streams, playback and export.	
<b>Processor</b>	The IP video management system shall operate on a 2nd Generation Intel® Core™ i7 processor and 8 GB of RAM.	

<b>Operating System</b>	The IP video management system shall utilize a Windows® 7 Ultimate 64-bit operating system.	
<b>Optical Drive</b>	The IP video management system shall support and have an option for an internal DVD+/-RW	
<b>DVI-D ports</b>	The IP video management system shall contain two DVI-D ports.	
<b>Camera Upgrade</b>	The IP video management system shall allow expansion of IP video channel capacity through a licensing without any hardware modification	
<b>Third Party Support</b>	The IP video management system shall support multiple models of IP cameras and encoders and including multiple third-party manufacturers.	
<b>Audio recording</b>	The IP video management system shall support audio recording from cameras in addition to third-party manufacturer's audio recording.	
<b>Storage</b>	The IP video management system shall support recording the internal server with additional storage utilizing SCSI attached external storage.	
<b>Recording</b>	The IP video management system shall be capable of continuous scheduled alarm/event and motion recording. Pre- and post- alarm recording shall also be available and shall be fully programmable on a per channel basis.	
<b>Monitoring</b>	The IP video management system shall support network health and monitoring utilizing third-party SNMP monitoring tools.	
<b>Operation</b>	The IP video management system shall indicate system performance and operation status utilizing a variety of HTML reports.	
<b>Diagnostic</b>	The IP video management system shall display system health monitoring data utilizing front panel LED displays and display popups.	
<b>Video Analytics</b>	The IP video management system shall optionally support on-board video analytics in quantities of two or four channels with Active Alert software and also provide video analytics monitoring including tracking and counting objects and people.	
<b>Open Architecture</b>	The IP video management system shall have a fully open architecture with support for both IP-specific camera as well as cameras with ONVIF compliance.	
<b>Automatic Detection</b>	The IP video management system shall support automatic detection of IP cameras. Third-party IP	

	cameras shall be automatically detected dependent on IP driver versions and manufacturers specifications	
<b>Modular /Scalability</b>	The IP video management system shall support an unlimited number of systems connected over a network. Each system shall contain two 1GB network ports; one for IP camera/encoder data, and one to connect to a network for client computer access.	
<b>Viewing and Management</b>	The IP video management system shall be viewed, managed, and played back through a single user interface simultaneously with other video management systems through client workstation software.	

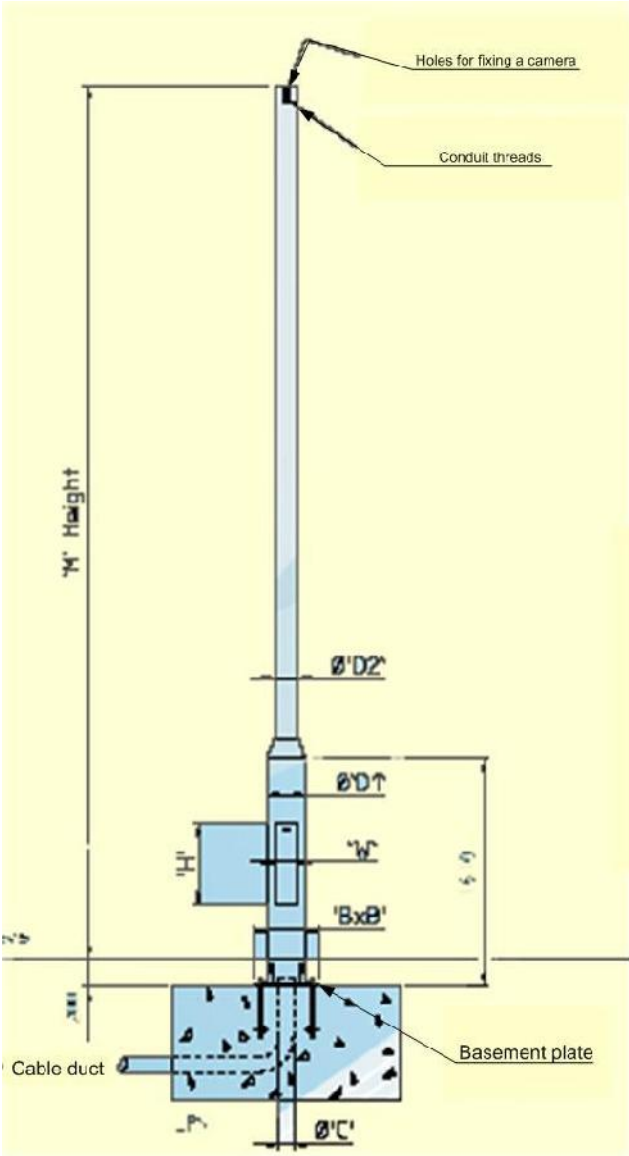
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### CAMERA POLES

The camera poles for any outdoor cameras shall be supplied & installed by the contractor. The minimum thresholds for installing this poles & cameras are as follows:

- A stable solution for achieving desired camera height, required height may be up to 8 meters.
- Excellent stability characteristics for achieving minimum camera movement.
- Pole should be circular
- Pole shall be tapering at the bottom.
- A desirable column where aesthetics are of importance.
- Totally concealed cable management facility
- Hot dipped galvanized for maximum weather protection both internally and externally.
- Should be painted Black on the external as the final finish
- Custom & bespoke versions tailored to customers' requirements.

The following drawing demonstrates the required columns and their technical specification.



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END

## **ACCESS CONTROL (INTEGRATED) PARTICULAR SPECIFICATIONS**

### **SPECIFIC NOTES TO TENDERERS**

#### **EXTENT OF INSALLATION**

The Contractor shall carry out all the necessary works for successful installation of the services mentioned as described and set out in the technical specifications, Bills of Quantities and accompanying drawings to the satisfaction of the consulting engineers.

This will include the supply & delivery of equipment, fix, install, connect, test, label, commissioning & the associated labour to a clean and neat working system that meets every detail as described in the specification

#### **WARRANTIES**

- All equipment supplied under the scope, including all associated installations shall be warranted by the manufacturer against electronic failure for the duration specified in the specifications and if possible, a lifetime warranted against Electronic & Programming failure. ("Lifetime" means that if the electronics & programming should fail at any time it will always be replaced).
- The **bidder to specify the recommended lifespan (if any)** of the system by which date replacement of the entire system is recommended.

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#### **SYSTEM SPECIFICATIONS**

The items described in the schedules to be priced are to meet the under listed minimum specifications and of the stated model or equal and approved.

#### **STANDARDS**

The Access Control system should follow the following standards:

- ISO/IEC 7810 for Cards
- Any other as listed in the Sections that follow

### BMS CONNECTION

The Access Control system should be BMS compatible

The BMS protocol to be used is to be “BACNET IP protocol”

### ACCESS CONTROL SYSTEM

The Integrated Access Control & Intrusion alarm System shall be installed on the premises to ensure control and protection of the premises to the levels desired.

The Access control system will be installed in various restricted locations as will be specified in the project. This can be passages, sensitive rooms, etc.

The access control system may include any of the following as will be specified in the Bills of Quantities:

- 1) Proximity Coded Card (credential)
- 2) Proximity Card Reader with Pin Pad
- 3) Proximity Card Reader
- 4) Biometric Finger print Reader
- 5) Barcode Readers
- 6) Card Reader Controllers
- 7) Magnetic Door Contacts (Slim line)
- 8) Electric strike
- 9) Electromagnetic Locks ( Maglock )
- 10) Door Closers
- 11) Access Control Software serving as the central ISMS

The distribution of the controllers of the integrated access and intrusion alarm systems shall be determined by the contractor during the detailed design, taking into consideration the locations of the controlled elements, the capacity of the controllers (how many doors may be connected to one controller), cabling aspects, power supply etc...

The contractor shall take into consideration that for system survivability reasons, no more than 6 doors should be controlled by one controller.

Each door controlled by the access control system shall be equipped with the following elements:

- 1) Card readers installed near the frame of the door, at the external and internal sides at height of 120cm.
- 2) Electric strike lock integrated into the frame of the door.
- 3) A magnetic contact, serving as opening detector, based on 2 units. One unit is integrated into the frame and the other is integrated into the door itself.



- 4) Door closer.
- 5) Local buzzer initiating an alarm signal whenever the door is left open longer than a predefined period or whenever a non-authorized opening are detected by the access control system.

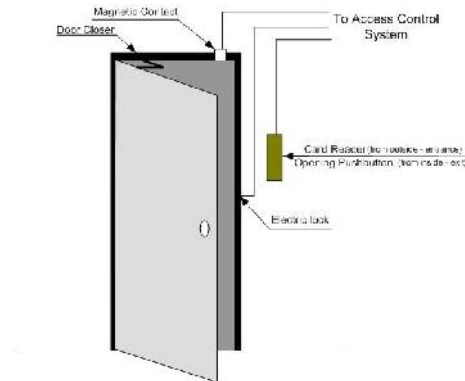
### ACCESS CONTROL CABLING

The access control cabling should follow the following guidelines:

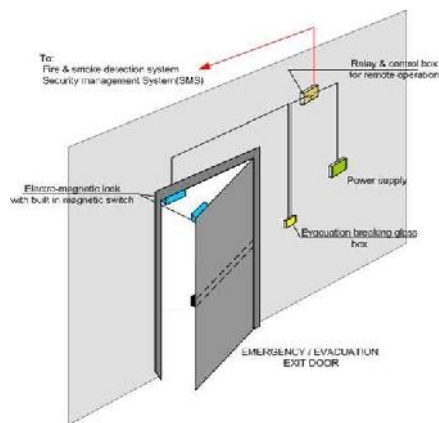
- v.) Cabling should be done in 5-Conductor #22 AWG Shielded UTP cables
- vi.) Cabling should be housed in conduits
- vii.) Cabling Should be done with ease of installation through identical wiring methods
- viii.) Maximum cabling distance shall not be more than 150m from a panel

### DOOR INSTALLATIONS

#### A. ELECTRIC STRIKE ARCHITECTURE



#### B. MAGNETIC CONTACT ARCHITECTURE



**EQUIPMENT**

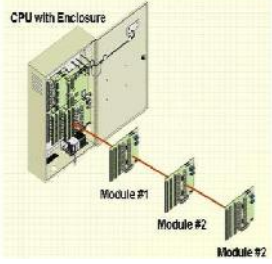
**CARD READER CONTROLLER**



This should meet the following specifications.

<b>Card Reader Controller</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Compatibility</b>	The card reader controller shall be fully compatible with the system management software and card reader and shall be able to handle the full capacity of card holders.	
<b>Expandability</b>	It shall be expandable and upgradeable.	
<b>Operation</b>	The controller shall be able to operate either as an off-line stand-alone unit or as a component of an on-line system. Should the control computer for any reason not be active or in case of a communications link failure, the controller shall record all transactions for later automatic uploading to the control computer.	
<b>Data</b>	All data relating to valid access control cards and alarm inputs shall be updated at all card reader terminals periodically or after each parameter modification.	
<b>Transactions</b>	Each controller shall be able to process and store at least 20,000 transactions in the off- line mode. Storage of information shall be by means of a non-volatile memory.	
<b>Storage</b>	The system shall support storage of cardholder biometric information (e.g. fingerprint or hand geometry templates) at the panel (as part of the cardholder record).	
<b>Battery</b>	The controller shall be supplied complete with battery back-up for uninterrupted access control for up to ten hours in the case of a main power failure. Mains supply failure shall be communicated to the control computer as an alarm condition. As requested, the battery and charging system shall be installed in a separate enclosure.	
<b>Activation Relays</b>	The controller shall be able to activate relays for external circuit such as locks for the doors and door insecure alarms. The	

	decision on whether to activate these relays or not must be in both online and offline modes of operation.	
<b>Alarm Sources</b>	The controller shall have alarm inputs available as well as exact location of alarm sources. It shall be possible to extend the number of digital and analogue inputs and outputs by adding relevant extension board.	
<b>Alarm Status</b>	The controller shall have the capability to activate an alarm circuit and shall report changes in alarm status to the control computer in the online mode of operation.	
<b>Tamper Switches</b>	Tamper switches shall be installed in the cabinets of the controller boxes to raise an alarm both locally and at the control computer if the door is opened and unless approved by the customer, card reader controllers shall be installed in protected cabinets.	
<b>Network</b>	The system shall include a network interface module. The module shall be 10 Mbps Ethernet based and capable of residing on a Local Area Network (LAN) or Wide Area Network (WAN) without connectivity to a PC serial port. The controller with the network interface module shall be able to communicate with the database server through industry standard switches and routers.	
<b>Offline Operation</b>	In the event that the controller loses communication with system software, it shall continue to function normally (stand-alone). While in this offline state, the controller shall make access granted/denied decisions and maintain a log of the events that occur. Events shall be stored in local memory and uploaded to the system software after communications are restored.	
<b>Readers</b>	The controller shall be modular supporting 4, 8, and 12 readers. (Alternative configuration of readers may be offered).	
<b>Capacity</b>	The capacities of the required controller shall be as follows: <ul style="list-style-type: none"> <li>• At least 12 Reader Configurations</li> <li>• 2,000 Cardholders</li> <li>• 20,000 History Transactions</li> <li>• 16 site codes</li> <li>• 4 Authorization Groups per Cardholder</li> <li>• 64 Time Periods with 7 Segments Per Period</li> <li>• 366 Days (Leap Year)</li> <li>• 1 Year Battery Backed Clock Calendar and Memory</li> </ul>	
<b>Enclosure</b>	16 AWG CRS enclosure with Tamperproof Lock, and Key <ul style="list-style-type: none"> <li>• Medium: 457 mm x 292 mm x 152 mm</li> <li>• Large: 554 mm x 409 mm x 145 mm</li> </ul>	
<b>Cabling Requirements</b>	Typical Cabling Requirements of the required controller should be as following: <ul style="list-style-type: none"> <li>• Host-to-Controller: Cat 5/6 Maximum Total Distance 100 m</li> <li>• Host-to-Controller: 4 conductors Maximum Total Distance 1,219 m</li> <li>• Controller-to-Controller: 4 Conductors Maximum Total Distance 1,219 m</li> <li>• Controller-to-Door: Reader: 6 Conductors Maximum 152</li> <li>• Door Strike: 2 Conductors Maximum 609 m</li> <li>• Door Status: 2 Conductors Maximum 609 m</li> <li>• REX: 2 Conductors Maximum 609 m</li> <li>• Controller-to-Input-Point: 2 Conductors Maximum 609 m</li> </ul>	

<b>Modular Configuration of Controller</b>		
<b>Modules</b>	Modules maybe: <ul style="list-style-type: none"> <li>• Ethernet Communication Adapter</li> <li>• 4 Reader Expansion Board</li> <li>• 8 Reader Expansion Board</li> <li>• 16 Relay Outputs and 16 Inputs</li> <li>• 16 Inputs</li> <li>• 8 Supervised Inputs</li> <li>• 16 Supervised Inputs</li> </ul>	
<b><u>ELECTRICAL</u></b>		
<b>Current</b>	Current: 2.5A @ 24 VDC	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of 0°C to +46°C	
<b>Humidity</b>	0% to 90% relative humidity non- condensing	
<b><u>INTEGRATION</u></b>		
<b>Compatibility</b>	Compatible with Third-Party Systems	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	



**PROXIMITY CARD READER WITH PINPAD**



This should meet the following specifications.

<b>Proximity Card Reader With Pin Pad</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Application</b>	Both Indoor & Outdoor	
<b>Type</b>	Contactless (Proximity) Fixed Pin pad for Code Entry with Backlit Keys	
<b>Dimensions</b>	115mm x 155mm x 32m as a maximum	
<b>Rating / Durability</b>	IP55 as a minimum with IK10 (20J) impact resistance	
<b>Construction</b>	UL94 Polycarbonate as a Minimum  The Keypad should be backlit and made of High impact clear Polycarbonate plastic. The characters are to be silk-screened on sub-surface of keys to eliminate wear.	
<b>Finish Colour</b>	Black , Charcoal or Light Gray as approved by the project architect / Interior Designer	
<b>Material Compliance</b>	Contactless smart card reader shall be fully compliant with Restriction of Hazardous Substances directive (RoHS) restricting the use of specific hazardous materials found in electrical and electronic products.  The substances banned under RoHS are Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent Chromium (CrVI), Polybrominated Biphenyls (PBB) and Polybrominated Diphenyl ethers (PBDE).	
<b><u>PROGRAMMING &amp; SOFTWARE</u></b>		
<b>Keys</b>	The Fixed sector keys should provide user with a defined key sector to allow them to select a key sequence to protect their Badge ID numbers and also enable the user select the source of their credentials.	
<b>Smart Card Compatibility</b>	Should securely read access Control Data from 13.56MHz contactless Smart Cards	
<b>Compatibility to Systems</b>	Universal compatibility with most access control systems. This is by outputting card data in compliance with the SIA AC-01 Wiegand standard.	
<b>Read Range</b>	Optimal read range and read speed for increased access control throughput.  Contactless smart card reader shall provide the following typical contactless read ranges: <ul style="list-style-type: none"> <li>• Up to 8.9 cm using ISO 15693 HID iCLASS card.</li> <li>• Up to 3.8 cm using ISO 15693 HID iCLASS Key or Tag</li> <li>• Up to 5.1 cm using MIFARE/DESFire card (CSN)</li> </ul>	
<b>Availability</b>	Global, off-the-shelf availability.	
<b>Programming</b>	Built in compatibility across the product line without the need of special programming.  This should ensure Secure access control data exchange between the smart card and the reader utilizing key diversification and mutual authentication routines.	
<b>Reader Programming</b>	The contactless smart card reader shall provide customizable reader behavior options either from the factory, or defined in the field through the use of pre-configured command cards. Reader behavior programming options shall include: <ul style="list-style-type: none"> <li>• LED &amp; Audio configurations</li> <li>• Disabling of reading specific card technologies (typically used after migration is complete to new technology).</li> </ul>	

	<ul style="list-style-type: none"> <li>• ISO 14443A CSN (E.g. MIFARE/DESFire) output configuration.</li> <li>• Wiegand output spacing and timing.</li> </ul>	
<b>Control Formats</b>	Backwards compatibility with legacy 125 KHz proximity access control formats (E.g. 26-bit, 32, 35-bit, 37-bit, 56-bit, and HID Corporate 1000 formats).	
<b>Transmission Encryption</b>	Reader shall be compatible with HID’s iCLASS mutual authentication algorithm using 64-bit authentication keys. All RF data transmission between the card and reader shall encrypted using a secure algorithm to ensure that the communication between the card and reader can never be copied and repeated back to the reader (sniffing and replay).	
<b>Indicators</b>	<p>Customizable behavior for indicator lights and audible tones.</p> <p>AUDIO BEEPER: Provides various tone sequences to signify:</p> <ul style="list-style-type: none"> <li>• Access Granted</li> <li>• Access Denied</li> <li>• Power up &amp;</li> <li>• Diagnostics</li> </ul> <p>LIGHT BAR: A high-intensity light bar shall provide clear visual status in the following colours:</p> <ul style="list-style-type: none"> <li>• Red</li> <li>• Green</li> <li>• Amber</li> </ul> <p>The light bar shall provide uniform distribution of light. Thus eliminating bright individual light spots</p>	
<b>Safety</b>	<p>Contactless smart card reader shall be suitable for global deployment by meeting worldwide radio and safety regulatory compliance including:</p> <ul style="list-style-type: none"> <li>• UL294 (US)</li> <li>• cUL (Canada)</li> <li>• FCC Certification (US)</li> <li>• IC (Canada)</li> <li>• CE (EU)</li> <li>• C-tick (Australia, New Zealand)</li> <li>• SRRC (China)</li> <li>• MIC (Korea)</li> <li>• NCC (Taiwan)</li> <li>• iDA (Singapore)</li> </ul>	
<b>Mounting</b>	<p>Consist of two-piece design with mounting plate and either separate front bezel and reader body (totaling three-pieces) or combined front bezel/reader body (totaling two-pieces). This shall also be suitable for Mullion mounting through the use of universal international mounting holes</p>	
<b>Monitoring</b>	Contactless smart card reader shall provide ability of an on-line “I’m Alive” message so the reader’s functional health can be monitored at all times when paired with a compatible access control panel.	
<b>Tamper Action &amp; Warning</b>	<p>Contactless smart card reader shall provide the ability to transmit an alarm signal via and integrated optical tamper switch if an attempt is made to remove the reader from the wall. The tamper switch shall be programmable to provide a selectable action to provide a selectable action compatible with various tamper communication schemes provided by access control panel manufacturers. The selectable action shall include one of the following:</p> <ul style="list-style-type: none"> <li>• During a tamper state, the “I’m Alive” message is inverted.</li> <li>• The reader open collector line changes from a high state (5V) to a low state (Ground).</li> <li>• Upon reception of a “Reader Status Report Request”</li> </ul>	

	(0x67), the reader responds with a “Reader Tamper Status Report” (0x4B) responds. For more information, see HADP/OSDP Specification. .	
<b>Expandability</b>	The contactless smart card reader shall provide the ability to upgrade its application code through the use of pre-configured firmware cards. This feature shall allow previously installed readers be reconfigured to modify their behavior and capabilities as the project environment evolves. The reader shall also allow the reader firmware to be upgraded in the field without the need to remove the reader from the wall through the use of factory-provided Application Cards.	
<b><u>ELECTRICAL</u></b>		
<b>Operating Voltage</b>	5-16VDC, reverse voltage protected	
<b>Current</b>	Low Current: 55 mA AVG, 116 mA PEAK @ 12 VDC	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -35°C to +65°C (-31°F to 149°F)	
<b>Humidity</b>	5% to 95% relative humidity non- condensing	
<b><u>INTEGRATION</u></b>		
<b>Compatibility</b>	Compatible with Third-Party Systems	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	



**PROXIMITY CARD READER**



This should meet the following specifications.

<b>Proximity Card Reader</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder’s Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Application</b>	Both Indoor & Outdoor	
<b>Type</b>	Contactless (Proximity)	
<b>Dimensions</b>	43mm x 155mm x 28mm as a maximum	

<b>Rating / Durability</b>	IP55 as a minimum with IK10 (20J) impact resistance	
<b>Construction</b>	UL94 Polycarbonate as a Minimum	
<b>Finish Colour</b>	Black , Charcoal or Light Gray as approved by the project architect / Interior Designer	
<b>Material Compliance</b>	Contactless smart card reader shall be fully compliant with Restriction of Hazardous Substances directive (RoHS) restricting the use of specific hazardous materials found in electrical and electronic products. The substances banned under RoHS are Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent Chromium (CrVI), Polybrominated Biphenyls (PBB) and Polybrominated Diphenyl ethers (PBDE).	
<b>PROGRAMMING &amp; SOFTWARE</b>		
<b>Smart Card Compatibility</b>	Should securely read access Control Data from 13.56MHz contactless Smart Cards	
<b>Compatibility to Systems</b>	Universal compatibility with most access control systems. This is by outputting card data in compliance with the SIA AC-01 Wiegand standard.	
<b>Read Range</b>	Optimal read range and read speed for increased access control throughput.  Contactless smart card reader shall provide the following typical contactless read ranges: <ul style="list-style-type: none"> <li>• Up to 8.9 cm using ISO 15693 HID iCLASS card.</li> <li>• Up to 3.8 cm using ISO 15693 HID iCLASS Key or Tag</li> <li>• Up to 5.1 cm using MIFARE/DESFire card (CSN)</li> </ul>	
<b>Availability</b>	Global, off-the-shelf availability.	
<b>Programming</b>	Built in compatibility across the product line without the need of special programming. This should ensure Secure access control data exchange between the smart card and the reader utilizing key diversification and mutual authentication routines.	
<b>Reader Programming</b>	The contactless smart card reader shall provide customizable reader behavior options either from the factory, or defined in the field through the use of pre-configured command cards. Reader behavior programming options shall include: <ul style="list-style-type: none"> <li>• LED &amp; Audio configurations</li> <li>• Disablement of reading specific card technologies (typically used after migration is complete to new technology).</li> <li>• ISO 14443A CSN (E.g. MIFARE/DESFire) output configuration.</li> <li>• Wiegand output spacing and timing.</li> </ul>	
<b>Control Formats</b>	Backwards compatibility with legacy 125 KHz proximity access control formats (E.g. 26-bit, 32, 35-bit, 37-bit, 56-bit, and HID Corporate 1000 formats).	
<b>Transmission Encryption</b>	Reader shall be compatible with HID's iCLASS mutual authentication algorithm using 64-bit authentication keys. All RF data transmission between the card and reader shall encrypted using a secure algorithm to ensure that the communication between the card and reader can never be copied and repeated back to the reader (sniffing and replay).	
<b>Indicators</b>	Customizable behavior for indicator lights and audible tones.  AUDIO BEEPER: Provides various tone sequences to signify: <ul style="list-style-type: none"> <li>• Access Granted</li> <li>• Access Denied</li> <li>• Power up &amp;</li> <li>• Diagnostics</li> </ul> LIGHT BAR: A high-intensity light bar shall provide clear visual	



	<p>status in the following colours:</p> <ul style="list-style-type: none"> <li>• Red</li> <li>• Green</li> <li>• Amber</li> </ul> <p>The light bar shall provide uniform distribution of light. Thus eliminating bright individual light spots</p>	
<b>Safety</b>	<p>Contactless smart card reader shall be suitable for global deployment by meeting worldwide radio and safety regulatory compliance including:</p> <ul style="list-style-type: none"> <li>• UL294 (US)</li> <li>• cUL (Canada)</li> <li>• FCC Certification (US)</li> <li>• IC (Canada)</li> <li>• CE (EU)</li> <li>• C-tick (Australia, New Zealand)</li> <li>• SRRC (China)</li> <li>• MIC (Korea)</li> <li>• NCC (Taiwan)</li> <li>• iDA (Singapore)</li> </ul>	
<b>Mounting</b>	<p>Consist of two-piece design with mounting plate and either separate front bezel and reader body (totaling three-pieces) or combined front bezel/reader body (totaling two-pieces). This shall also be suitable for Mullion mounting through the use of universal international mounting holes</p>	
<b>Monitoring</b>	<p>Contactless smart card reader shall provide ability of an on-line “I’m Alive” message so the reader’s functional health can be monitored at all times when paired with a compatible access control panel.</p>	
<b>Tamper Action &amp; Warning</b>	<p>Contactless smart card reader shall provide the ability to transmit an alarm signal via and integrated optical tamper switch if an attempt is made to remove the reader from the wall. The tamper switch shall be programmable to provide a selectable action to provide a selectable action compatible with various tamper communication schemes provided by access control panel manufacturers. The selectable action shall include one of the following:</p> <ul style="list-style-type: none"> <li>• During a tamper state, the “I’m Alive” message is inverted.</li> <li>• The reader open collector line changes from a high state (5V) to a low state (Ground).</li> <li>• Upon reception of a “Reader Status Report Request” (0x67), the reader responds with a “Reader Tamper Status Report” (0x4B) responds. For more information, see HADP/OSDP Specification. .</li> </ul>	
<b>Expandability</b>	<p>The contactless smart card reader shall provide the ability to upgrade its application code through the use of pre-configured firmware cards. This feature shall allow previously installed readers be reconfigured to modify their behavior and capabilities as the project environment evolves.</p> <p>The reader shall also allow the reader firmware to be upgraded in the field without the need to remove the reader from the wall through the use of factory-provided Application Cards.</p>	
<b><u>ELECTRICAL</u></b>		
<b>Operating Voltage</b>	5-16VDC, reverse voltage protected	
<b>Current</b>	Low Current: 55 mA AVG, 116 mA PEAK @ 12 VDC	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -35°C to +65°C (-31°F to 149°F)	
<b>Humidity</b>	5% to 95% relative humidity non- condensing	

<b><u>INTEGRATION</u></b>		
<b>Compatibility</b>	Compatible with Third-Party Systems	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**BIOMETRIC FINGERPRINT READER WITH PIN PAD**



This should meet the following specifications.

<b>Biometric Fingerprint Reader With Pin Pad</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Application</b>	Indoor	
<b>Type</b>	Contactless (Proximity) Fixed Pin pad for Code Entry with Backlit Keys Fingerprint Biometric Enrolment	
<b>Fingerprint Sensor Type</b>	Optical	
<b>Sensor Resolution</b>	500dpi, 256-bit gray scale, 18 x 22 mm Sensor area	
<b>Timing</b>	Card Read < 0.5 Sec Fingerprint capture < 2 Sec, Typical 1 Sec Verification of captured Finger < 1 Sec	
<b>Language Support</b>	Field Enroller: English as a basic Reader: English as a Basic	
<b>Dimensions</b>	214mm x 106mm x 58mm as a maximum	
<b>Rating / Durability</b>	IP55 as a minimum with IK10 (20J) impact resistance	
<b>Graphical Display</b>	LCD Screen. 60mm x 18mm viewing area, 120 x 32 resolution Factory preset to provide written instructions to the user. Fully Customizable and describes the function of the user	

	function keys	
<b>Construction</b>	<p>UL94 Polycarbonate as a Minimum</p> <p>The Keypad should be backlit and made of High impact clear Polycarbonate plastic. The characters are to be silk-screened on sub-surface of keys to eliminate wear.</p>	
<b>Finish Colour</b>	Black , Charcoal or Light Gray as approved by the project architect / Interior Designer	
<b>Material Compliance</b>	<p>Contactless smart card reader shall be fully compliant with Restriction of Hazardous Substances directive (RoHS) restricting the use of specific hazardous materials found in electrical and electronic products.</p> <p>The substances banned under RoHS are Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent Chromium (CrVI), Polybrominated Biphenyls (PBB) and Polybrominated Diphenyl ethers (PBDE).</p>	
<b><u>PROGRAMMING &amp; SOFTWARE</u></b>		
<b>Keys</b>	The Fixed sector keys should provide user with a defined key sector to allow them to select a key sequence to protect their Badge ID numbers and also enable the user select the source of their credentials.	
<b>Smart Card Compatibility</b>	Should securely read access Control Data from 13.56MHz contactless Smart Cards	
<b>Compatibility to Systems</b>	Universal compatibility with most access control systems. This is by outputting card data in compliance with the SIA AC-01 Wiegand standard.	
<b>Read Range</b>	<p>Optimal read range and read speed for increased access control throughput.</p> <p>Contactless smart card reader shall provide the following typical contactless read ranges:</p> <ul style="list-style-type: none"> <li>• Up to 8.9 cm using ISO 15693 HID iCLASS card.</li> <li>• Up to 3.8 cm using ISO 15693 HID iCLASS Key or Tag</li> <li>• Up to 5.1 cm using MIFARE/DESFire card (CSN)</li> </ul>	
<b>Availability</b>	Global, off-the-shelf availability.	
<b>Programming</b>	<p>Built in compatibility across the product line without the need of special programming.</p> <p>This should ensure Secure access control data exchange between the smart card and the reader utilizing key diversification and mutual authentication routines.</p>	
<b>Reader Programming</b>	<p>The contactless smart card reader shall provide customizable reader behavior options either from the factory, or defined in the field through the use of pre-configured command cards. Reader behavior programming options shall include:</p> <ul style="list-style-type: none"> <li>• LED &amp; Audio configurations</li> <li>• Disabling of reading specific card technologies (typically used after migration is complete to new technology).</li> <li>• ISO 14443A CSN (E.g. MIFARE/DESFire) output configuration.</li> <li>• Wiegand output spacing and timing.</li> </ul>	
<b>Control Formats</b>	Backwards compatibility with legacy 125 KHz proximity access control formats (E.g. 26-bit, 32, 35-bit, 37-bit, 56-bit, and HID Corporate 1000 formats).	
<b>Transmission Encryption</b>	Reader shall be compatible with HID's iCLASS mutual authentication algorithm using 64-bit authentication keys. All RF data transmission between the card and reader shall be encrypted using a secure algorithm to ensure that the communication between the card and reader can never be copied and repeated back to the reader (sniffing and replay).	
<b>Indicators</b>	Customizable behavior for indicator lights and audible tones.	

	<p>AUDIO BEEPER: Provides various tone sequences to signify:</p> <ul style="list-style-type: none"> <li>• Access Granted</li> <li>• Access Denied</li> <li>• Power up &amp;</li> <li>• Diagnostics</li> </ul> <p>LIGHT BAR: A high-intensity light bar shall provide clear visual status in the following colours:</p> <ul style="list-style-type: none"> <li>• Red</li> <li>• Green</li> <li>• Amber</li> </ul> <p>The light bar shall provide uniform distribution of light. Thus eliminating bright individual light spots</p>	
<b>Safety</b>	<p>Contactless smart card reader shall be suitable for global deployment by meeting worldwide radio and safety regulatory compliance including:</p> <ul style="list-style-type: none"> <li>• UL294 (US)</li> <li>• cUL (Canada)</li> <li>• FCC Certification (US)</li> <li>• IC (Canada)</li> <li>• CE (EU)</li> <li>• C-tick (Australia, New Zealand)</li> <li>• SRRC (China)</li> <li>• MIC (Korea)</li> <li>• NCC (Taiwan)</li> <li>• iDA (Singapore)</li> </ul>	
<b>Mounting</b>	<p>Consist of two-piece design with mounting plate and either separate front bezel and reader body (totaling three-pieces) or combined front bezel/reader body (totaling two-pieces). This shall also be suitable for Mullion mounting through the use of universal international mounting holes</p>	
<b>Monitoring</b>	<p>Contactless smart card reader shall provide ability of an on-line “I’m Alive” message so the reader’s functional health can be monitored at all times when paired with a compatible access control panel.</p>	
<b>Tamper Action &amp; Warning</b>	<p>Contactless smart card reader shall provide the ability to transmit an alarm signal via an integrated optical tamper switch if an attempt is made to remove the reader from the wall. The tamper switch shall be programmable to provide a selectable action to provide a selectable action compatible with various tamper communication schemes provided by access control panel manufacturers. The selectable action shall include one of the following:</p> <ul style="list-style-type: none"> <li>• During a tamper state, the “I’m Alive” message is inverted.</li> <li>• The reader open collector line changes from a high state (5V) to a low state (Ground).</li> <li>• Upon reception of a “Reader Status Report Request” (0x67), the reader responds with a “Reader Tamper Status Report” (0x4B) responds. For more information, see HADP/OSDP Specification.</li> </ul>	
<b>Expandability</b>	<p>The contactless smart card reader shall provide the ability to upgrade its application code through the use of pre-configured firmware cards. This feature shall allow previously installed readers be reconfigured to modify their behavior and capabilities as the project environment evolves.</p> <p>The reader shall also allow the reader firmware to be upgraded in</p>	

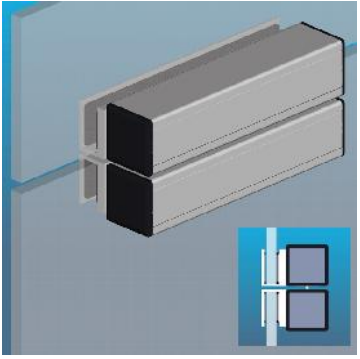
	the field without the need to remove the reader from the wall through the use of factory-provided Application Cards.	
<b><u>ELECTRICAL</u></b>		
<b>Operating Voltage</b>	5-16VDC, reverse voltage protected	
<b>Current</b>	Low Current: 55 mA AVG, 299 mA PEAK @ 12 VDC	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -35°C to +65°C (-31°F to 149°F)	
<b>Humidity</b>	5% to 95% relative humidity non- condensing	
<b><u>INTEGRATION</u></b>		
<b>Compatibility</b>	Compatible with Third-Party Systems	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**MAGNETIC DOOR CONTACT (SLIMLINE)**



This should meet the following specifications.

<b>Magnetic Door Contact ( Slim line)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Mounting</b>	The magnetic contact shall either be flush, surface or floor mounted depending on the type of door the contact is to be installed	
<b>Cabling</b>	All magnetic contacts shall be cabled with standard 2m wire.	
<b>Operating Gap</b>	The maximum operating gap shall be 9mm	
<b>Fixing Screws</b>	The mounting screws should be concealed to prevent tampering when installed	
<b>Door Fitting</b>	The contractor shall choose the proper model to fit the door and shall be responsible for all fixing materials and brackets to successfully and aesthetically mount the locks in the doors.	

<b>Fixing Detail</b>		
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**DOOR CLOSER**



This should meet the following specifications.

<b>Door Closer</b>		
Feature	Minimum Requirements	Bidder's Response / Comment ( or X )
<b><u>GENERAL</u></b>		
<b>Operation</b>	The required door closer shall be sufficient to close and lock the door without undue impact upon the components of an access control system	
<b>Design</b>	Universal design, used on all common door types  Rack-and-pinion design	
<b>Installation</b>	Easy to install and does not require mounting back plates	
<b>Closing speed</b>	Adjustable closing speed via two independent valves 180 – 15	
<b>Body</b>	Cast aluminum body	

<b>Projection</b>	2-7/8" (73mm) projection	
<b>Piston Diameter</b>	1-3/8" (35mm) diameter piston	
<b>Pinion Journals</b>	5/8" (16mm) diameter pinion journals	
<b>Valves</b>	Standard, separate and independent, latch, sweep and back check intensity valves  Staked valves	
<b>Swing</b>	All standard arm applications allow doors to swing 180°, conditions permitting	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**ELECTRIC STRIKE LOCK**



This should meet the following specifications.

<b>Electric Strike Lock</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Fitting</b>	The required electric strike lock shall be fitted with 5/8" latch or 3/4" latch with 1/8" door gap. The exact model shall be coordinated with the Door Installer to fit the strike where it is going to be installed.	
<b>Locksets</b>	The electric strike shall be designed for use with locksets with up to 3/4" latch-bolts.	
<b>Traffic</b>	The quality construction shall fit high traffic applications.	
<b>Profile</b>	The electric strike shall have compact low profile design enabling quick and easy installation where jamb space is limited	
<b>Features</b>	The lock shall have at least the following features: <ul style="list-style-type: none"> <li>• Latch position status standard</li> <li>• Keeper closed &amp; deadlocked/unlocked status standard</li> <li>• Field selectable fail secure – failsafe</li> <li>• Field selectable voltage, 12/24V AC/DC</li> <li>• ¼" Horizontal alignment adjustment</li> <li>• Low profile, 1-3/16" deep</li> <li>• Plug-in wire connectors</li> <li>• Mounting tabs</li> <li>• Non-handed</li> </ul>	

	<ul style="list-style-type: none"> <li>• All stainless steel parts with durable die cast body for corrosion resistance</li> <li>• Fewer moving parts for maximum life</li> <li>• Stainless steel standard with square corner faceplate</li> <li>• Aluminum standard with radius corner faceplate</li> <li>• ANSI/ BHMA A156.31, Grade 2</li> </ul>	
<b>ELECTRICAL</b>		
<b>Voltage Coil</b>	Dual Voltage Coil: <ul style="list-style-type: none"> <li>• 280/140mA @ 12/24V DC</li> <li>• 170/85mA @ 12/24V AC</li> </ul>	
<b>Latch Position Status</b>	Latch Position Status (std): SPDT, Dry 3Amp @ 30V	
<b>Keeper Closed &amp; Locked Status</b>	Keeper Closed & Locked Status (std): SPDT, Dry 3Amp @ 30V	
<b>Keeper Open/Closed Status</b>	Keeper Open/Closed Status (optional): SPDT, Dry 3Amp @ 30V	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

***ELECTROMAGNETIC LOCK (MAGLOCK)***



This should meet the following specifications:

<b>Electromagnetic Lock ( Maglock)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Mounting</b>	Surface mounted / Flush Mounted	
<b>Sensor</b>	Dry contact sensor for door condition indication (can be hooked up to an indication light or buzzer)	
<b>Solenoid</b>	Internally mounted	
<b>Certification</b>	Internationally recognized certification	
<b>Concealing</b>	Full concealment design	



<b>Compatibility to Systems</b>	Universal compatibility with all access control systems.	
<b>Load</b>	Single: 600 Kg (1200 lb.) Magnetic Lock Dual: 600 Kg (1200 lb.) Magnetic Lock ( 2 Wing Doors )	
<b>ELECTRICAL</b>		
<b>Power</b>	Should functions on DC current for quiet operation	
<b>Voltage</b>	12 or 24 volt option	
<b>Current</b>	Low Current Draw. 1A	
<b>WARRANTIES</b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**EMERGENCY BREAKGLASS UNIT**



This should meet the following specifications:

<b>Emergency Break glass Unit (Hinged Cover)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b>GENERAL</b>		
<b>Operating Voltage</b>	24V dc	
<b>Connections</b>	4-Way Terminal Block	
<b>Operating method</b>	Glass element with plastic safety film or resettable plastic element with integral alarm indicator	
<b>Test/reset facility</b>	Unique key	
<b>Colour</b>	Green to international standards	
<b>Illustration</b>	"IN CASE OF EMERGENCY BREAK GLASS" Writing	
<b>IP rating</b>	IP42	
<b>Compatibility</b>	Should be compatible with the access control system	
<b>Protection</b>	In-built Short circuit Isolators	
<b>Indication</b>	Red Status LED	
<b>Status Notification</b>	LED set to blink to indicate normal communication with the system under normal conditions LED automatically illuminates if unit is triggered	
<b>Mounting</b>	Surface Mount / Recessed	

<b>Depth</b>	Maximum depth as 87mm including base for Surface mount	
<b><u>ENVIROMENTAL</u></b>		
<b>Temp. range</b>	-10°C to +55°C	
<b><u>ACCESSORIES</u></b>		
<b>Semi recess Bezel</b>	To be used for all flush call points	
<b>Hinged Clear cover</b>	All break glass should come with protective hinged cover designed to prevent accidental activation of call point. (as in image above)	
<b>Resettable Plastic Element</b>	All Call points should come with a Resettable plastic element which is designed to replace the standard glass element for speed and simplicity of resetting after activation. The Resettable element should contain a high visibility flag which along with the high visibility front mounted LED provides clear indication of when the call point has been triggered	
<b>Replacement Test Key</b>	All Call Points Should be supplied with a test key. This will be used to test the call point as well as to open the call point for installation purposes or to replace the element.	
<b>Replacement Glass Elements</b>	Each Call point should come with a spare glass element to be handed over to the system owner for replacement in future.	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**[DOOR RELEASE KEYSWITCH](#)**



This should meet the following specifications.

<b>Door Release Key switch</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Type</b>	Slim	
<b>Dimensions</b>	86mm (H) X50mm (W)	
<b>Finish</b>	Brushed Finish Stainless Steel	
<b>Release mechanism</b>	Special Key release (Anti-Copy)	
<b>No. Of Keys</b>	3No.	

<b>Application</b>	Indoor & Outdoor use	
<b>ELECTRICAL</b>		
<b>Current</b>	Max Continuous Current: 10A @ 12VDC	
<b>Voltage</b>	12VDC	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**REQUEST TO EXIT (RTE) SWITCH**



This should meet the following specifications:

<b>Request To Exit (RTE) switch</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Type</b>	Wide / Slim ( As to be specified in Bills )	
<b>Dimensions</b>	Wide: 86mm (H) X 86mm (W) Slim: 86mm (H) X 50mm (W)	
<b>Finish</b>	Brushed Finish Stainless Steel	
<b>Illustration</b>	"Press button to open door" pictogram	
<b>Release mechanism</b>	Wide: Normally Open - Common - Normally Closed Slim: Single Pole Press-To-Make	
<b>Application</b>	Indoor & Outdoor use	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**PROXIMITY ACCESS CARD (ORDINARY)**



This should meet the following specifications.

<b>Proximity Access Card (Ordinary)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Function</b>	Function as an access control card, used with access readers to gain entry and exit to/from controlled portals and to hold identification information specific to the user.	
<b>Frequency</b>	Shall be a passive device, with an operating frequency of 125KHz.	
<b>Code Number</b>	The card shall contain a 14 digit unique number.	
<b>Authentication Key</b>	Each application area shall contain a unique diversified authentication key to reduce the risk of compromised data or duplicate cards.	
<b><u>MATERIAL &amp; CONSTRUCTION</u></b>		
<b>Material</b>	Card shall be made of PVC materials.  Card surface shall be glossy and of a material compatible with direct to card dye-sublimation or thermal transfer printing.  Card construction shall meet durability requirements of ISO 7810.	
<b>Range</b>	TK4100 Card for access control (125KHz/134.2KHz)  Other Chip IC:EM4200, EM4305, T5577,Mifare 1K,Mifare Ultralight, etc.	
<b>Thickness</b>	TK4100 Card Thickness:0.8~1.2mm	
<b>Size</b>	CR80 86 x 54mm, or customized	
<b>Printing</b>	Full color offset printing on both sides	
<b>Magnetic Strip</b>	300oe, 2750oe, 4000oe	
<b>Notch</b>	Should come complete with notch for clipping Neck straps	





This should meet the following specifications:

<b>Access Control Server</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Model</b>	HP ProLiant DL580G5 X7460 16GB (4P) or equivalent to approval	
<b>Operating System</b>	Microsoft Windows 2008 Server R2 ready.	
<b>Processor</b>	Intel Leona X7460 (6 core, 2.67GHz, bomb L3, 130W)	
<b>Cash Memory</b>	12MB 1.3	
<b>Memory Type</b>	X7460 models: 8GB PC2-5300 Fully buffered DIMMs (DDR2 667 Hz)	
<b>Memory</b>	32 GB RAM, OEM installed	
<b>Storage Controller</b>	4P Base Models: HP Smart Array P411i/512MB BBWC controller	
<b>Internal Hard Disk</b>	<ul style="list-style-type: none"> <li>• Capacity: 16 X boob SAS of 10k Hot plug z.s-inch Enterprise HDD</li> <li>• CD ROM Drive: 24 X IDE DVD ROM/CD-RW Drive</li> <li>• Operating System: Red Hat Linux 5 or Microsoft Windows 2008 Server R2 Ready</li> <li>• LAN Card: Dual NC371i Multi-function Gigabit Server Adaptors (Embedded)</li> </ul>	
<b>HP Storage Works SCSI</b>	<ul style="list-style-type: none"> <li>• Tape Drives, External: 1 x external LTO-3 Ultrium 960 Drive</li> <li>• Power Supply (4) standard (third and fourth power supplies for redundancy)</li> <li>• Form Factor: Rack mountable, with complete mounting kit</li> <li>• SAN SWITCH: TWO (2) HP Storage Works 8/16 SAN Switch with licenses and 24 x HP Storage Works 8/4Gb SW Single PK SFP Transceiver</li> </ul>	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

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**ACCESS CONTROL WORKSTATIONS**



This should meet the following specifications:

<b>Access Control Workstations</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Model</b>	HP dc7900 Convertible Minitower or equivalent to approval	
<b>Operating System</b>	Genuine Microsoft Windows 2007 ready & Included	
<b>Processor</b>	Intel Pentium Duo Core 2 with Processor as E8500 3.16 GHz 6 MB L2 cache 1333 MHz FSB	
<b>Cache Description</b>	1MB	
<b>Chipset</b>	Intel Q45 chipset	
<b>Memory</b>	4 GB 800 MHz DDR2 SDRAM PC2-4200 (533 MHz) Non-ECC Single chip OEM installed	
<b>Hard Drive</b>	Internal: 250 GB 7200 rpm SATA 3.0 Gb/s Hard Drive	
<b>Hard Disk Controller</b>	250 GB 7200 rpm SATA 3.0 Gb/s	
<b>Optical Drive</b>	SATA DVD-RW Supermulti Lightscribe (Double Layer/Dual Format)	
<b>Mouse / Pointing Device</b>	USB z-Button Optical Scroll Mouse with mouse pad Cache	
<b>I/O (Input/Output) Ports</b>	USB (2 rear and 2 front) 1 standard serial and 1 optional serial, 1 RJ-45, 1 VGA, audio in/out; headphone and microphone	
<b>Keyboard</b>	USB Standard QWERTY Keyboard	
<b>Graphic(s) Card</b>	Intel integrated Graphics Media Accelerator 4500	
<b>Monitor</b>	17" LCD TFT wide angle view antiglare / static coat	
<b>Network Characteristics</b>	Intel Pro/1000 CT PCIe xl Gigabit NIC	
<b>Software/ driver and utilities</b>	Preloaded Software: Adobe Acrobat Reader, Intervideo, WinDVD	
<b>Multimedia</b>	Integrated High Definition audio with ADI1884 coded and embedded Stereo Speakers (A11 speakers are stereo)	
<b>Power</b>	220v power supply – Active PFC, supplied with square pins power cable.	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**END**

## **PEDESTRIAN CONTROL (TURNSTILES, DETECTORS & READERS) PARTICULAR SPECIFICATIONS**

### **SPECIFIC NOTES TO TENDERERS**

#### **EXTENT OF INSALLATION**

The Contractor shall carry out all the necessary works for successful installation of the services mentioned as described and set out in the technical specifications, Bills of Quantities and accompanying drawings to the satisfaction of the consulting engineers.

This will include the supply & delivery of equipment, fix, install, connect, test, label, commissioning & the associated labour to a clean and neat working system that meets every detail as described in the specification

#### **WARRANTIES**

- All equipment supplied under the scope, including all associated installations shall be warranted by the manufacturer against electronic failure for the duration specified in the specifications and if possible, a lifetime warranted against Electronic & Programming failure. ("Lifetime" means that if the electronics & programming should fail at any time it will always be replaced).
  
- The **bidder to specify the recommended lifespan (if any)** of the system by which date replacement of the entire system is recommended.

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#### **SYSTEM SPECIFICATIONS**

The items described in the schedules to be priced are to meet the under listed minimum specifications and of the stated model or equal and approved:

## PEDESTRIAN CONTROL SYSTEM

The Pedestrian Control System shall be installed on the premises to ensure control and protection of the premises to the levels desired.

The system will be installed in various restricted locations as will be specified in the project. This can be entrances to parking's, entrances to premises, etc.

The Pedestrian Control System may include any of the following as will be specified in the Bills of Quantities:

- 12) Turnstiles
- 13) Walk Through Metal Detectors
- 14) Barcode Readers

The distribution of the systems shall be determined by the contractor during the detailed design, taking into consideration the locations of the controlled elements, the capacity of the controllers, cabling aspects, power supply etc.

The contractor shall take into consideration that for system survivability reasons, i.e. number of devices that should be controlled by one controller, etc.

## STANDARDS

- The system should follow the required standards.
- The equipment should be compatible with any access control system and accommodate a wide variety of operating modes for maximum flexibility.

## SAFTEY

- 1) Turnstiles will be equipped with an ANTI-PANIC device, which in the event of a power failure or an emergency ensures a prompt opening of glass wings or unlocks the arm of the tripod arm from the horizontal position and drops the arm down to a vertical position. The result is a clear walkway necessary for fast and easy evacuation of people.
- 2) **Fire Alarm Integration:** Turnstiles must be able to get a generated and received signal from a fire alarm system to the emergency input of the turnstile control electronics, which ensures a prompt opening of glass



wings or dropping of the tripod arm down to a vertical position without reference to the existing state of turnstile. This should be done by either a N/C or N/O voltage-free contact.

- 3) The turnstiles will be supplied with Electro-mechanical drive unit where the Operation of the tripod turnstile should be controlled by the electro-mechanical mechanism. This mechanism should have the following standard features:
  - A locking system with electromagnets that prevents two passages in one time
  - A self-centering mechanism to complete rotation of the turnstile into the home position
  - A hydraulic shock absorber to ensure smooth and progressive slowing down operation
  - A blocking mechanism that prevents from reverse rotation in the event of a single directional unit
- 4) The glass flap turnstile should have an Anti-pinch function i.e. wings will open when the anti-pinch sensors detect the person inside the passage, which prevents person from being nipped or hurt. Intelligent sensor will auto reverse the flap if there is a sudden incoming obstacle while the flap is closing. Flap will also auto reverse if there is something blocking the flap to avoid motor overload and damage itself.
- 5) Walk Through Metal detectors shall be safe for pregnant women, heart pacemakers and magnetic recording materials

### **BMS CONNECTION**

The system should be BMS compatible

The BMS protocol to be used is to be “BACNET IP protocol”

### **EQUIPMENT**

Kindly, **tick ( )** where it meets and **cross (X)** where it does not meet specifications on the appropriate tables below.

**HALF HEIGHT TRIPOD TURNSTILE**



Semi-automatic electro-mechanical tripod turnstile consisting of casing, magnetic force turn plate, reader module, main controller module, direction guide, limit switch etc. for use at entrances to restricted / controlled zones.

The Equipment should meet the following specifications.

<b>HALF HEIGHT TRIPOD TURNSTILE</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Application</b>	Indoor	
<b>Direction</b>	Double Directional.	
<b>Direction Guide Function</b>	<ul style="list-style-type: none"> <li>• Turnstile ready to read card - Green light in the middle turns on</li> <li>• After reading card and ready for passing - Upper Amber light turns on</li> <li>• If try to push the railing without permission - Red light turns on</li> </ul>	
<b>Timeout</b>	Adjustable time out facility (range from 6s to 30s) to cancel 'GO' signal if passage through the turnstile is not completed within the set time	
<b>Alarm</b>	Alarming output for pushing the railing without permission	
<b>Input</b>	Operable by two input signals (signals can be input by access controller, button or other equipment's)	
<b>Anti-panic Input</b>	One protected input to control ANTI-PANIC device for dropping the tripod arm automatically to create clear walkway.	
<b>Output</b>	Two outputs to check completed passage through the turnstile in certain direction	
<b>Operation Mode</b>	Input from card reader device or push button control will turn the turnstile 120° to access one person at the time. The turnstile can be set for different operational modes in either direction: <ul style="list-style-type: none"> <li>• Free access</li> <li>• Controlled access</li> <li>• Locked</li> </ul>	
<b>Railing operation</b>	Railing will be off when power off	

<b>Voice</b>	Voice Prompt available	
<b>Display screen</b>	Display Screen available	
<b>Counting Function</b>	N times card read, N Persons pass before rail closing	
<b>Ports</b>	RS485 communication. However, PC command through serial port to be allowed	
<b>Power Consumption</b>	Standby @ 0.1A, Typical @2A, Peak @3A.	
<b>Power Backup</b>	Should come with inbuilt backup Battery	
<b>Housing material</b>	2mm, AISI 304 Brushed stainless steel, corrosion resistant	
<b>Housing Size</b>	1300mm x 280mm x 950mm	
<b>Channel width</b>	550 - 600mm	
<b>Pass speed</b>	25 persons/min.	
<b>IP protection</b>	IP44	
<b>Operation Frequency</b>	300 Cycles per Hr.	
<b>Cycles (MCBF)</b>	5, 000, 000 cycles (Mean Cycle Before Failure )	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -30°C to +70°C	
<b>Relative humidity</b>	Maximum 80%	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	

**HALF HEIGHT GLASS FLAP TURNSTILE**



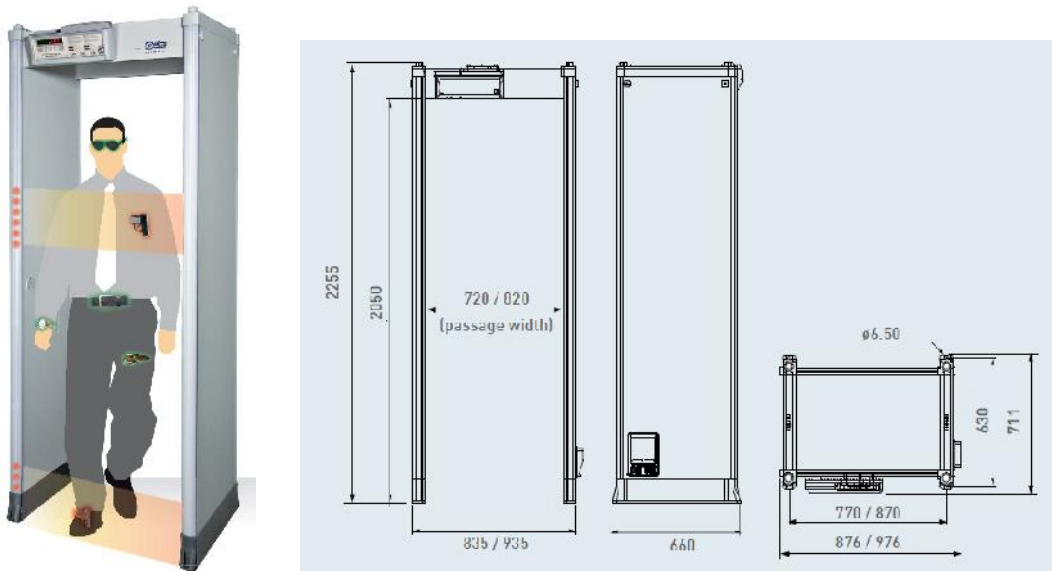
Semi-automatic electro-mechanical retractable glass flap turnstile consisting of casing, glass wings, reader module, main controller module, direction guide, limit switch etc. for use at entrances to restricted / controlled zones.

The Equipment should meet the following specifications.

<b>HALF HEIGHT GLASS FLAP TURNSTILE</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Application</b>	Indoor	
<b>Direction</b>	Double Directional. The units allow bi-directional traffic in one direction at a time. Each direction can be independently controlled	
<b>Direction Guide Function</b>	<ul style="list-style-type: none"> <li>• Turnstile ready to read card – Green Arrow on display is on</li> <li>• After user passes – Red Stop light turns on until wings close</li> </ul>	
<b>Timeout</b>	Adjustable time out facility (range from 6s to 30s) to cancel 'GO' signal if passage through the channel is not completed within the set time. Wings automatically close.	
<b>Alarm (Audible &amp; Visible)</b>	<ul style="list-style-type: none"> <li>• Alarming output for pushing the wings without permission</li> <li>• Alarm when tailgating or piggy-backing attempt is detected</li> <li>• Alarm for climbing over detection</li> </ul>	
<b>Input</b>	Operable by two input signals (signals can be input by access controller, button or other equipment's)	
<b>Anti-panic Input</b>	One protected input to control ANTI-PANIC device for opening the wings automatically to create clear walkway.	
<b>Output</b>	Two outputs to check completed passage through the turnstile in certain direction	
<b>Operation Mode</b>	Input from card reader device or push button control will open the wings to access one person at the time. The turnstile can be set for different operational modes in either direction: <ul style="list-style-type: none"> <li>• Free access</li> <li>• Controlled access</li> <li>• Locked</li> </ul>	
<b>Wing operation</b>	Wings open automatically when power off and close automatically when power on.	
<b>Voice</b>	Voice Prompt available	
<b>Display screen</b>	Display Screen available	
<b>Counting Function</b>	N times card read, N Persons pass before wings closing	
<b>Ports</b>	RS485 communication. However, PC command through serial port to be allowed	
<b>Power Consumption</b>	Standby @ 0.1A, Peak @10A.	
<b>Power Backup</b>	Should come with inbuilt backup Battery	
<b>Housing / Cabinet Shape</b>	Oval	
<b>Housing material</b>	2mm, AISI 304 Brushed stainless steel, corrosion resistant	
<b>Housing Size</b>	Unit Length - 1300mm Unit Width – 320mm Unit Height - 1100mm Door Flap Height – 940mm	
<b>Channel width</b>	900mm for Wheelchair Pass	
<b>Wings material</b>	Anti-scratch Tempered safety Acrylic glass wing of 10 mm.	
<b>Wings Color</b>	Blue Acrylic glass wing	
<b>Wings Snych</b>	Both Wings should be synchronized	
<b>Wings Speed</b>	0.5 sec opening / closing time	
<b>Pass speed</b>	30 persons/min. as a minimum	
<b>IP protection</b>	IP44	

<b>Operation Frequency</b>	300 Cycles per Hr.	
<b>Cycles (MCBF)</b>	5, 000, 000 cycles (Mean Cycle Before Failure )	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -30°C to +70°C	
<b>Relative humidity</b>	Maximum 80%	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	

**WALK THROUGH METAL DETECTORS**



Model: Should be as CEIA Model or equivalent to approval

This should meet the following specifications.

<b>Walk Through Metal Detectors (Multi Zone)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Function</b>	<ul style="list-style-type: none"> <li>• The Walk through Metal Detector should allow a high level of discrimination between significant metal masses, such as the weapons which are to be detected, and personal metal effects.</li> <li>• The Detector should have a "height on person" display which actually indicates, by means of illuminated LED's, the position of the weapon on the person.</li> <li>• It should be capable of detecting a wide range of threat objects composed of magnetic, non-magnetic metals and mixed alloys</li> <li>• It should have a Quick &amp; accurate analysis of all parts of the</li> </ul>	


	<p>body of people in transit, from the shoe level to the crossbar</p> <ul style="list-style-type: none"> <li>• It should have no periodic re-calibration and preventive maintenance required</li> <li>• No scheduled maintenance</li> <li>• Continuous self-diagnostic system</li> <li>• Fully digital design</li> <li>• It shall be safe for pregnant women, heart pacemakers and magnetic recording materials</li> </ul>	
<b>Detectable devices</b>	<ul style="list-style-type: none"> <li>• Provide superior target detection including items such as coins, jewelry, keys, cigarette packs and shoe shanks</li> <li>• Provide superior detection of guns, knives and other flat and rod-shaped weapons, regardless of archway location</li> <li>• Locate smaller objects, hard-to-find floor-level weapons, and moving targets regardless of speed.</li> </ul>	
<b><u>FEATURES</u></b>		
<b>Structure</b>	<ul style="list-style-type: none"> <li>• State-of-the-art, robust and washable panels</li> <li>• Protected against aging, weather and wear</li> </ul>	
<b>Display</b>	2 display bars programmable as zone indicators and/or pacing lights	
<b>Central Control Unit</b>	<ul style="list-style-type: none"> <li>• Ergonomic and robust design</li> <li>• High visibility alphanumeric display and programming keyboard</li> <li>• Made of advanced plastics or stainless steel and anti-vandalism construction</li> <li>• Access to the front panel protected by hardware key and two levels of passwords</li> </ul>	
<b>Alarm Signaling</b>	<p><b>VISUAL SIGNALS:</b></p> <ul style="list-style-type: none"> <li>• Multi-zone display bar for “height on person” localization</li> <li>• 2 light bars with selectable entry/exit and pacing indication</li> <li>• Green and red metering signals proportional to the mass of the detected target</li> </ul> <p><b>AUDIO SIGNALS:</b></p> <ul style="list-style-type: none"> <li>• 10 selectable continuous and pulsed tones</li> <li>• 10 selectable sound intensities ranging from 0 to 90 dbA at 1m</li> </ul>	
<b>Signaling Type</b>	<p><b>VISUAL:</b></p> <ul style="list-style-type: none"> <li>• Fixed or proportional to the mass in transit - visible from 6m under lighting of 4000lux.</li> </ul> <p><b>VISUAL ZONE INDICATION:</b></p> <ul style="list-style-type: none"> <li>• 2, 4, 8 or 20 independent zones selectable</li> </ul>	
<b>Programming</b>	<ul style="list-style-type: none"> <li>• Remote via RS-232, Infrared Remote Control Unit or Ethernet 10/100 base T interface</li> <li>• SECURITY LEVEL: International Standard (IS) command</li> <li>• Local by Control Unit alphanumeric display and keyboard</li> <li>• Programming access protected by user and super-user passwords</li> </ul>	
<b>Operational Features</b>	<ul style="list-style-type: none"> <li>• Quick reset time as short as 0.2 seconds for high throughput rate</li> <li>• Very high detection speed (up to 50 ft. /sec.)</li> <li>• One-touch key reading of inbound, outbound and Security Level Data</li> </ul>	

<b>Synchronization</b>	Automatic synchronization between two or more metal detectors with distance of down to 5cm without the use of external cables	
<b>Power Source</b>	Powered by safe low voltage DC i.e. @ 230V, 12-24 VAC/DC, 50Hz, Single phase	
<b>Power Backup</b>	Embedded battery back-up and charger Long life crossbar battery back-up to give up to 17.5 hours of autonomous working time.	
<b>Protection</b>	<ul style="list-style-type: none"> <li>• Password and hardware key access protection</li> <li>• Anti-tamper on/off switch with RS-232 interface, 65 minutes typical (50 minutes minimum) internal battery back-up with 12 hours mains disconnection diagnostic alarm.</li> <li>• Anti-vandalism, anti-tampering protection which includes stainless steel control unit, waterproof mains power supply adapter, protection covers for power supply and antenna connection compartments, equipped with screws requiring tools for removal.</li> </ul>	
<b>Application</b>	<ul style="list-style-type: none"> <li>• Weather resistant protection</li> <li>• IP65 protection (includes weather resistant and anti-vandalism options)</li> </ul>	
<b>Counter</b>	High precision transit counter containing Two photocells fitted into the archway allow counting of transits, alarms and percentage of alarms.	
<b>Alarms</b>	Programmable Random Alarm capability	
<b>Interfaces</b>	<ul style="list-style-type: none"> <li>• Integrated web-server &amp; logger (includes Ethernet and USB interface)</li> <li>• RS-232 communication</li> <li>• Infrared</li> </ul>	
<b>Dimensions</b>	<p><b>Passage:</b> Width - 820 mm useful passage width Height - 2050 mm useful passage Height</p> <p><b>Equipment:</b> Width - 976mm Depth - 711mm Height - 2255mm</p>	
<b>Remote Control Unit</b>	Remote Control unit (RCU) for full remote access, including alarm signaling and programming of the Walk Through Metal Detectors.	
<b>Remote Controller</b>	Infrared Remote Controller for wireless remote programming of the control unit.	
<b>Software</b>	Powerful, PC based installation and service Software. Includes oscilloscope and terminal functionality.	
<b>Connection Modules</b>	Extension cable to allows the connection of power supply and serial communication to personal computers or other accessories, such as RCU's	
<b>ENVIROMENTAL</b>		
<b>Temperature</b>	Operating Temp of -40°C to +70°C	
<b>WARRANTY</b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	



**BARCODE READERS**



This should meet the following specifications.

<b>Barcode Readers</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Function</b>	<ul style="list-style-type: none"> <li>• The required barcode reader should be designed to read 2D barcode images from smartphones, tablets or paper.</li> <li>• It should be design, with optimized imaging and a 2D omnidirectional barcode imager, ensures read reliability.</li> <li>• It should have a small-footprint slot-in design to enable fast easy integration into third-party public access kiosks and gates.</li> <li>• It should be rugged, water-resistant construction with no moving parts, enable it to withstand years of indoor and outdoor public access use</li> <li>• The barcode reader may be configured with data format settings.</li> <li>• Serial RS232 and serial or keyboard USB interface versions should be available.</li> <li>• When operated in interactive mode, the Barcode reader shall be controlled by the host application to give green light LED "successful read" feedback to the user.</li> </ul>	
<b>Barcodes compatible</b>	<p>The reader should read all popular linear, PDF417 and 2D symbols, including postal barcodes.</p> <p><b>Linear Barcodes:</b> These include EAN / UPC, Interleaved 2 of 5, Industrial 2 of 5, IATA 2 of 5, Code 39 and Code 128 formats.</p> 	



	<p><b>PDF417:</b></p> <p style="text-align: center;">PDF417</p>  <p><b>2D:</b> Include both stacked and matrix-style barcodes</p> 	
<b><u>FEATURES</u></b>		
<b>Construction Material</b>	ABS, Black in colour	
<b>Glass</b>	4mm Toughened White Soda Lime; BS EN60068-2-75 & IEC 62262:2002, rated to 3.5J impact	
<b>Application</b>	<ul style="list-style-type: none"> <li>Weather resistant protection. Fully sealed, robust, water-resistant units suitable, for integration into indoor or outdoor kiosks, podiums and gates</li> </ul>	
<b>Plug in mode</b>	Quick plug-in design	
<b>User Feedback</b>	Intuitive operation with user feedback (Green & Red LED lights)	
<b>Read Mode</b>	<ul style="list-style-type: none"> <li>Reads on face-down presentation of a barcode</li> <li>Reads 2D, PDF417 and linear symbols</li> </ul>	
<b>Interface</b>	<ul style="list-style-type: none"> <li>RS232 and USB (serial or keyboard) interface options</li> <li>Single interchangeable cable connection to host PC</li> <li>Interactive mode allows host application to control reader functions</li> <li>Fully configurable via detachable host interface</li> </ul>	
<b>Software</b>	FLASH upgradeable software	
<b>Power</b>	<ul style="list-style-type: none"> <li>Power (serial interface): 4.5 to 5.0 VDC via external power supply or via USB power stealer</li> <li>Power (USB interface): Via a single USB cable for combined data and power</li> <li>Current Typical: 310 mA Peak: 480 mA</li> </ul>	
<b>MTBF</b>	85,000 hours	
<b>Approvals</b>	<ul style="list-style-type: none"> <li>FCC 47CFR Part 15 Class A</li> <li>EN55022: 2006 + Amd1: 2007; EN55024: 1998 + Amd1: 2001 + Amd2, 200</li> <li>UL 60950-1 and CSA C22.2 No. 60950-1-07</li> <li>IEC 60950-1 2nd edition</li> <li>IEC 60950-1 2nd edition including amendment 1</li> </ul>	
<b><u>INTEGRATION</u></b>		
<b>Systems Integration</b>	<p>The system shall have the capability of integration with:</p> <ul style="list-style-type: none"> <li>Access Control system,</li> <li>Turnstiles</li> <li>Any other devices</li> </ul>	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -25°C to +70°C	
<b>Resilience</b>	Water-resistant to 1m depth, Dust-proof	
<b><u>WARRANTY</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**END**

## **VEHICULAR & GATE CONTROL PARTICULAR SPECIFICATIONS**

### **SPECIFIC NOTES TO TENDERERS**

#### **EXTENT OF INSALLATION**

The Contractor shall carry out all the necessary works for successful installation of the services mentioned as described and set out in the technical specifications, Bills of Quantities and accompanying drawings to the satisfaction of the consulting engineers.

This will include the supply & delivery of equipment, fix, install, connect, test, label, commissioning & the associated labour to a clean and neat working system that meets every detail as described in the specification

#### **WARRANTIES**

- All equipment supplied under the scope, including all associated installations shall be warranted by the manufacturer against electronic failure for the duration specified in the specifications and if possible, a lifetime warranted against Electronic & Programming failure. ("Lifetime" means that if the electronics & programming should fail at any time it will always be replaced).
- The **bidder to specify the recommended lifespan (if any)** of the system by which date replacement of the entire system is recommended.

#### **SYSTEM SPECIFICATIONS**

The items described in the schedules to be priced are to meet the under listed minimum specifications and of the stated model or equal and approved:

=====

### **VEHICULAR GATE CONTROL SYSTEM**

The Integrated Vehicular Gate Control System shall be installed on the premises to ensure control and protection of the premises to the levels desired.

The system will be installed in various restricted locations as will be specified in the project. This can be entrances to parking's, entrances to premises, etc.

The Integrated Vehicular Gate Control System may include any of the following as will be specified in the Bills of Quantities:

- 15) Traffic Arm / Boom Barrier
- 16) Bollards (Retracting)
- 17) Tyre Rippers
- 18) Loop Detectors (Vehicle)
- 19) License Plate Recognition
- 20) Under Vehicle Scanners (UVSS)
- 21) Traffic Lights
- 22) Card readers
- 23) Hand Held Explosives Detector

The distribution of the controllers of the integrated access and intrusion alarm systems shall be determined by the contractor during the detailed design, taking into consideration the locations of the controlled elements, the capacity of the controllers, cabling aspects, power supply etc.

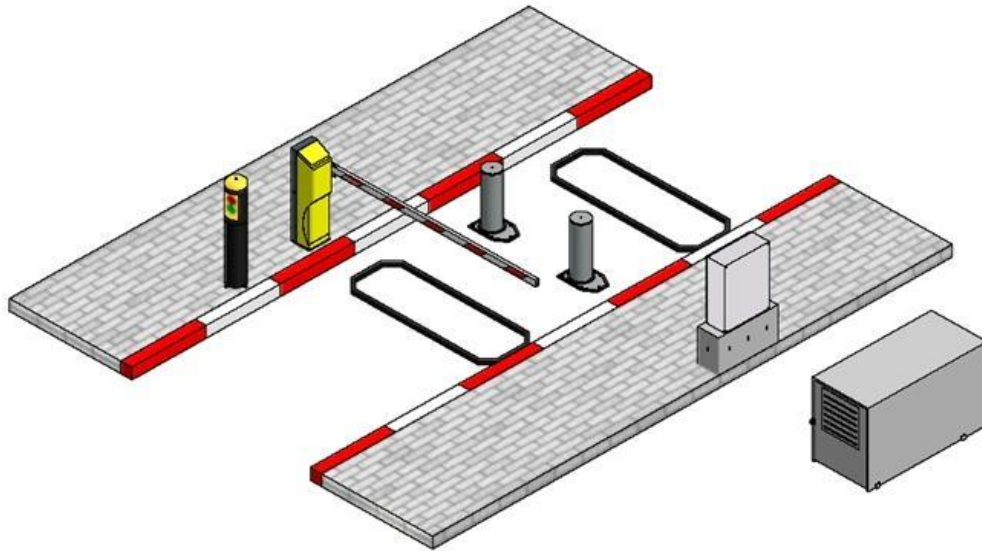
The contractor shall take into consideration that for system survivability reasons, i.e. number of devices that should be controlled by one controller, etc.

### **CONTROL CABLING**

The control cabling should follow the following guidelines:

- ix.) Cabling should be done in 5-Conductor #22 AWG Shielded Cat 6A UTP cables
- x.) Cabling should be housed in conduits
- xi.) Cabling Should be done with ease of installation through identical wiring methods
- xii.) Maximum cabling distance shall not be more than 100m from a panel

**GATE SYSTEM ARCHITECTURE**



**EQUIPMENT**

**TRAFFIC ARM / BOOM BARRIER**



This should meet the following specifications.

<b>Traffic Arm / Boom Barrier</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Function</b>	Function as an access control system, used with proximity cards, radio, tokens, keypads and intercoms, etc. to gain entry and exit to/from controlled portals and to hold identification information specific to the user.	
<b>Construction (Frame)</b>	Steel	

<b>Construction (Arm)</b>	Extruded Aluminum Tubing	
<b>Finish - Cabinet</b>	Off White including Top Cover with rounded edges	
<b>Finish - Arm</b>	Powder coated in white with red reflective tape	
<b>Arm Length</b>	As will Be specified in Bills Of Quantities	
<b>Standard Opening</b>	90 Degrees	
<b>Operating Speed</b>	2.0 to 7.0 seconds	
<b>Barrier response</b>	4 Sec Maximum	
<b>Operation Times</b>	24/7	
<b>Cycles</b>	Over 2000 Open/Close Cycles per day with approximate 100Cycles / hr.	
<b>Duty Rating</b>	100% Duty Rated	
<b>Dimensions</b>	Height – 1200mm Max Boom Width & Depth – Approx. 475mm	
<b>Drive Unit</b>	Motor & Gearbox	
<b>Manual Operation</b>	To be included ( Manual detachable rotating Lever [Key-Switch] to be supplied)	
<b>Controls</b>	Wire control (for switch signal) / Remote control (@ 418MHZ)	
<b>Closure</b>	Auto Closing	
<b>Operating Voltage</b>	230v 1Ph 50hz with Power Entry at bottom of cabinet	
<b>Operating Current</b>	6 Amps	
<b>Power</b>	0.37KW	
<b>Power Failure Action</b>	Power failure options to remain locked or unlocked during power failure mode	
<b>Safety Features</b>	Induction Loop or Photocell safety to be included. This is to prevent gate from closing during vehicle presence within sensor areas	
<b>Accessories</b>	LED Boom Lights to be attached on either side with antiglare  “STOP” Sign attached to arm	
<b>Approved Standards</b>	Conforming to C.E. BS6571 PT4	
<b>Communication</b>	RS485 communication module	
<b>Impact</b>	Impact-proof structure: When accident happens & the vehicle hits against the barrier beam, then the impact-proof structure should make the arm rotate for 90°, to avoid or reduce the damage from vehicles and barrier.	
<b>Relock</b>	Programmable electronic selections for automatic re-lock after a pre- determined time if no action is detected	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -20°C to +65°C	
<b>Application</b>	Outdoor	
<b><u>WARRANTY</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	



**BOLLARDS (FIXED)**



This should meet the following specifications.

<b>Bollards (Fixed)</b>		
Feature	Minimum Requirements	Bidder’s Response / Comment ( or X )
<b><u>GENERAL</u></b>		
<b>Function</b>	Bollards will be used to control access to secured areas	
<b>Type</b>	Fixed	
<b>Construction (Bollard)</b>	Bollard shall be a above ground assembly made from stainless steel 304	
<b>Finish</b>	<ul style="list-style-type: none"> <li>• Bollard shall have a stainless steel finish.</li> <li>• Bollard shall have yellow band at top section.</li> <li>• Bollard should be beveled at the top section</li> </ul>	
<b>Bollard Arrangement</b>	As specified in Bills of Quantities & Drawings	
<b>Bollard Height</b>	700mm as measured from the top of the foundation frame to the top of the Bollard assembly	
<b>Bollard Diameter</b>	220mm	
<b>Impact Resistance</b>	6.8 Ton @ 60Kmh	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +70°C	
<b>Application</b>	Outdoor (Fully Waterproof IP68)	
<b><u>WARRANTY</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	



**BOLLARDS (RETRACTING)**



This should meet the following specifications.

<b>Bollards (Retracting)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Function</b>	This defines the specifications for electro-hydraulic Bollard, consisting of (one, two, three or four) vertical lift retractable Bollards operating (independently or in sets of two, three or four), a Hydraulic Power Unit, the Controls And Logic Circuits and Related Features.	
<b>Type</b>	Electro-Hydraulic	
<b>Construction (Bollard)</b>	Bollard shall be a below ground assembly containing a heavy steel Cylindrical weldment capable of being raised to an above ground guard position. The guard position shall present a formidable obstacle to an approaching vehicle.	
<b>Finish</b>	<ul style="list-style-type: none"> <li>• The foundation and underside of the Bollard shall have asbestos free coating for corrosion protection.</li> <li>• The roadway plates shall have a non-skid surface.</li> <li>• Bollard shall be stainless steel</li> <li>• Bollard shall have yellow/black diagonal stripes at top section.</li> <li>• Bollards shall have a circular illuminating unit (LED based) on the top of the Bollards.</li> </ul>	
<b>Individual Operation</b>	Each individual Bollard shall be operated independently from any other Bollard within the system. Each Bollard shall have its own controls.	
<b>Set Operation</b>	<ul style="list-style-type: none"> <li>• Multi Bollards Operating in Sets: Bollard system shall have a Number of sets (As Specified in Bills of Quantities).</li> <li>• Each set of Bollards shall have its own controls and operate independently from each other set within the system.</li> </ul>	
<b>Bollard Arrangement</b>	As specified in Bills of Quantities	
<b>Bollard Height</b>	700mm as measured from the top of the foundation frame to the top of the Bollard assembly	
<b>Bollard Diameter</b>	200mm	

<b>Normal Operation</b>	Bollard(s) shall provide excellent security and positive control of normal traffic in both directions by providing an almost insurmountable obstacle to non-armored or non-tracked vehicles. The Bollard system shall be designed to stop a vehicle attacking from either direction and continue to operate when the vehicle is within the defined weight and velocity characteristics, minor repairs accepted.	
<b>Impact Resistance</b>	6.8 Ton @ 60Kmh	
<b>Operation Time</b>	3 – 8 Seconds	
<b>Emergency Operation Time</b>	1.2 Seconds	
<b>Operation Frequency</b>	200 Full Cycles per hr.	
<b>MTBF</b>	5,000,000	
<b>Power Off Operation</b>	The accumulator shall be sized to allow minimum three full cycle operations of a single Bollard in the event of a power breakdown.	
<b>Manual Operation</b>	A hand pump shall be furnished to allow the Bollards to be raised manually in the event of a prolonged power interruption.	
<b>Safety Lock Detector</b>	<ul style="list-style-type: none"> <li>• A Bollard vehicle detector safety loop (induction loop) shall be supplied to prevent the Bollard from being accidentally raised under an authorized vehicle.</li> <li>• The detector shall utilize digital logic have fully automatic tuning for stable and accurate long-term reliability. The output of the detector shall delay any Bollard rise signal (except for emergency command) when a vehicle is over the loop.</li> </ul>	
<b>Sump Pump</b>	An appropriate self-priming sump pump shall be supplied to drain water collected in the water sump arrangement near the Bollards foundations to an external drain	
<b><u>HYDRAULIC POWER UNIT (HPU)</u></b>		
<b>Hydraulic Circuit</b>	<ul style="list-style-type: none"> <li>• Circuit Unit shall consist of an electrically driven hydraulic pump, which shall pressurize a high-pressure manifold connected to a hydraulic accumulator.</li> <li>• Electrically actuated valves shall be installed on the manifold to allow oil to be driven to the up and/or down side of a double acting hydraulic cylinder to raise and lower the Bollard.</li> <li>• The hydraulic circuit shall include all necessary control logic, interconnect lines and valves.</li> <li>• Electric motor driving the hydraulic pump shall be fed from 440/3/50.</li> <li>• Motor shall be sufficiently sized for the continuous bollards operations.</li> </ul>	
<b>HPU Enclosure</b>	<ul style="list-style-type: none"> <li>• A Weatherproof lockable weather resistant enclosure shall be provided for the HPU.</li> <li>• The design shall provide for easy access to the HPU for maintenance and emergency operation of the hydraulic system.</li> <li>• Enclosure shall be provided with a corrosion resistant coating.</li> </ul>	
<b><u>CONTROL &amp; LOGIC CIRCUITS</u></b>		
<b>Control Circuit</b>	<ul style="list-style-type: none"> <li>• The controls will be PLC based.</li> <li>• A control circuit shall be provided to interface between all Bollard control stations. This circuit shall contain all relays, timers and other devices necessary for the Bollard operation.</li> <li>• The control circuit shall operate on 230 volts, single phase, 50 Hz. An internally mounted transformer shall reduce this to 24 VAC (24 VDC) for all external control stations.</li> </ul>	
<b>Construction</b>	The control circuit shall be mounted in a general-purpose enclosure. All device interconnect lines shall be run to terminal strips.	



<b>Control Panel</b>	<ul style="list-style-type: none"> <li>• A control panel shall be supplied to control the Bollard operation.</li> <li>• This panel shall have a key lockable main switch with "Main Power ON" and "Panel ON" lights. Push Buttons for "UP", "DOWN", "STOP" and "MIDDLE STOP" positions for each Bollard (or set) shall be provided.</li> <li>• Bollard position indicator lights shall be included for each Bollard (or set).</li> <li>• The control panel shall operate on 24 VAC (optionally 24 VDC).</li> </ul>	
<b>Central Control Panel</b>	<ul style="list-style-type: none"> <li>• A central control panel shall be supplied to control Bollard function.</li> <li>• This panel shall have a key lockable main switch with "Main Power ON" and "Panel ON" lights. Push Buttons for "UP", "DOWN", "STOP" and "MIDDLE STOP" positions for each Bollard (or set) shall be provided.</li> <li>• Bollard position indicator lights shall be included for each Bollard (or set).</li> <li>• The central control panel shall have a key lockable switch to arm or disarm the local control panel(s).</li> <li>• An indicator light shall show if the local control panel is armed.</li> <li>• The central control panel shall operation 24 VAC (optionally 24 VDC).</li> </ul>	
<b>Local Control Panel</b>	<ul style="list-style-type: none"> <li>• A local control panel shall also be supplied to control the Bollard operation.</li> <li>• This panel shall have a "Panel ON" light that is lit when enabled by a switch on the central control panel.</li> <li>• Buttons to raise or lower each Bollard (or set) shall be provided. "UP", "DOWN", "STOP" and "MIDDLE STOP" positions for each Bollard (or set) shall be provided on the panel.</li> <li>• The remote control panel shall operate on 24 VAC (optionally 24 VDC).</li> </ul>	
<b><u>INTEGRATION</u></b>		
<b>Systems Integration</b>	<p>The system shall have the capability of integration with:</p> <ul style="list-style-type: none"> <li>• Access Control system,</li> <li>• CCTV,</li> <li>• Loop detector,</li> <li>• Crash pad attached to boom-barrier and other crash-rated barriers such as Road blocker, Tyre killers, etc.</li> <li>• Any other devices</li> </ul>	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +70°C	
<b>Application</b>	Outdoor (Fully Waterproof IP68)	
<b><u>WARRANTY</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	



**TYRE RIPPERS (RETRACTING)**



This should meet the following specifications.

<b>Tyre Rippers (Retracting)</b>		
Feature	Minimum Requirements	Bidder's Response / Comment ( or X )
<b><u>GENERAL</u></b>		
<b>Function</b>	This is a preventive installation aimed at puncturing tyres of vehicles using special steel spikes. The rippers will be driven by an electromechanical drive unit controlled by a microcontroller. When the spikes are in 'UP' Position they will be able to puncture the tyres of the vehicle attempting to force entry into the secured area.	
<b>Type</b>	Electromechanical	
<b>Construction (Spikes)</b>	Made of Heavy duty corrosion free steel bolted to a solid rotating axis.	
<b>Frame</b>	Underground solid welded steel frame c/w drainage outlets	
<b>Casing</b>	Steel cover segments to cover the blocking spikes in the lowered position allowing passage of vehicles	
<b>Blocking Width</b>	As specified in Bills of Quantities	
<b>Spikes Blocking Height</b>	150mm above ground	
<b>Casing Depth</b>	235mm	
<b>Weight</b>	750Kg	
<b>Distance between adjacent spikes</b>	100mm (±10mm)	
<b>Operation Time</b>	3 – 8 Seconds	
<b>Emergency Operation Time</b>	1.2 Seconds	
<b>Operating Voltage</b>	230V, 50Hz, Single phase	
<b>Operation</b>	Automated operation using 'UP' / 'DOWN' push-button set.	
<b>Control Unit</b>	Micro controller based	
<b>Casing Colour</b>	Yellow & Black Stripes	
<b>Blocking Spikes Colour</b>	Red	
<b>Safety Lock Detector</b>	<ul style="list-style-type: none"> <li>• A Tyre Ripper vehicle detector safety loop (induction loop) shall be supplied to prevent the Spikes from being accidentally raised under an authorized vehicle.</li> <li>• The detector shall utilize digital logic have fully automatic tuning for stable and accurate long-term reliability. The output of the detector shall delay any Spike rise signal (except for</li> </ul>	

	emergency command) when a vehicle is over the loop.	
<b>Operation Frequency</b>	200 Full Cycles per hr.	
<b>MTBF</b>	5,000,000	
<b>Power Off Operation</b>	The accumulator shall be sized to allow minimum three full cycle operations of the spikes system in the event of a power breakdown.	
<b>Manual Operation</b>	A hand pump shall be furnished to allow the spikes to be raised / lowered manually in the event of a prolonged power interruption.	
<b>Control Circuit</b>	<ul style="list-style-type: none"> <li>• The controls will be PLC based.</li> <li>• A control circuit shall be provided to interface between all Tyre Ripper control stations. This circuit shall contain all relays, timers and other devices necessary for the Tyre Ripper operation.</li> <li>• The control circuit shall operate on 230 volts, single phase, 50 Hz. An internally mounted transformer shall reduce this to 24 VAC (24 VDC) for all external control stations.</li> </ul>	
<b>Construction</b>	The control circuit shall be mounted in a general-purpose enclosure. All device interconnect lines shall be run to terminal strips.	
<b>Control Panel</b>	<ul style="list-style-type: none"> <li>• A control panel shall be supplied to control the Tyre Ripper operation.</li> <li>• This panel shall have a key lockable main switch with "Main Power ON" and "Panel ON" lights. Push Buttons for "UP", "DOWN", "STOP" and "MIDDLE STOP" positions for each Tyre Ripper shall be provided.</li> <li>• Tyre Ripper position indicator lights shall be included for each Tyre Ripper (or set).</li> <li>• The control panel shall operate on 24 VAC (optionally 24 VDC).</li> </ul>	
<b>Central Control Panel</b>	<ul style="list-style-type: none"> <li>• A central control panel shall be supplied to control Tyre Ripper function.</li> <li>• This panel shall have a key lockable main switch with "Main Power ON" and "Panel ON" lights. Push Buttons for "UP", "DOWN", "STOP" and "MIDDLE STOP" positions for each Tyre Ripper (or set) shall be provided.</li> <li>• Tyre Ripper position indicator lights shall be included for each Tyre Ripper (or set).</li> <li>• The central control panel shall have a key lockable switch to arm or disarm the local control panel(s).</li> <li>• An indicator light shall show if the local control panel is armed.</li> <li>• The central control panel shall operation 24 VAC (optionally 24 VDC).</li> </ul>	
<b>Local Control Panel</b>	<ul style="list-style-type: none"> <li>• A local control panel shall also be supplied to control the Tyre Ripper operation.</li> <li>• This panel shall have a "Panel ON" light that is lit when enabled by a switch on the central control panel.</li> <li>• Buttons to raise or lower each Tyre Ripper (or set) shall be provided. "UP", "DOWN", "STOP" and "MIDDLE STOP" positions for each Tyre Ripper (or set) shall be provided on the panel.</li> <li>• The remote control panel shall operate on 24 VAC (optionally 24 VDC).</li> </ul>	
<b><u>INTEGRATION</u></b>		
<b>Systems Integration</b>	The system shall have the capability of integration with: <ul style="list-style-type: none"> <li>• Access Control system,</li> <li>• CCTV,</li> <li>• Loop detector,</li> <li>• Crash pad attached to boom-barrier and other crash-rated barriers such as Road blocker, Tyre killers, etc.</li> <li>• Any other devices</li> </ul>	

<b>ENVIROMENTAL</b>		
<b>Temperature</b>	Operating Temp of -40°C to +70°C	
<b>Application</b>	Outdoor (Fully Waterproof IP68)	
<b>WARRANTY</b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**LOOP DETECTORS**

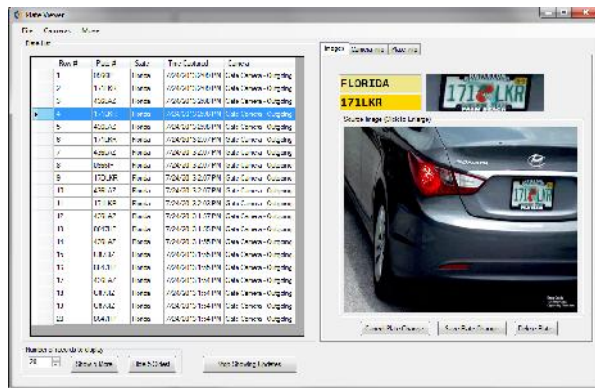
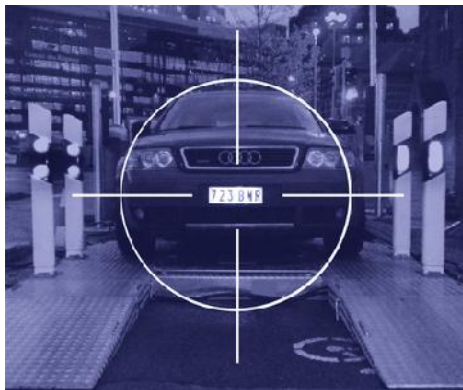


This should meet the following specifications.

<b>Loop Detectors</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Function</b>	<ul style="list-style-type: none"> <li>• Main function of the loop detector is to detect the presence of a vehicle by measuring the inductance caused in a vehicle presence</li> <li>• Microprocessor based detection should allow the solution for a various usage such as command and control of gates, arm barriers, Bollards, Tyre Rippers, detection and vehicle counts, drive direction detection, etc.</li> </ul>	
<b>Power</b>	<ul style="list-style-type: none"> <li>• 230V, 12-24 VAC/DC, 50Hz, Single phase</li> <li>• 3VA</li> </ul>	
<b>Connector</b>	Standard 11pin Connector (86CP11 or 78-S11 Type)  Located at the back loop panel, should allow connecting the loop detector to external devices (Loop detection, power supply, and relay contactor)	
<b>Front Loop</b>	The front loop detector interface switch to allow tuning of frequency, sensitivity and various operating methods	
<b>Package</b>	IP30 plastic	
<b>Dimensions</b>	Height - 42mm Depth - 76mm Width - 77mm	
<b>Lightning Protection</b>	Lightning Protection out relay contacts	
<b>Inductance Range</b>	20µH - 2000µH	
<b>Frequency Range</b>	10 KHz – 100 KHz	
<b>Extraction Relay</b>	U max 250V – P max 50W	
<b>Extraction Types</b>	Each channel 500 msec. pulse or a constant contact during Adjustable delay (up to 9 sec) extraction close	

<b>Indicators</b>	Front panel indication LED (power, indication ,error)	
<b>Reset Function</b>	Front panel press RESET	
<b><u>INTEGRATION</u></b>		
<b>Systems Integration</b>	The system shall have the capability of integration with: <ul style="list-style-type: none"> <li>• Access Control system,</li> <li>• CCTV,</li> <li>• Loop detector,</li> <li>• Crash pad attached to boom-barrier and other crash-rated barriers such as Road blocker, Tyre killers, etc.</li> <li>• Bollards</li> <li>• Tyre Rippers</li> <li>• Any other devices</li> </ul>	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +70°C	
<b>Application</b>	Outdoor (Fully Waterproof IP68)	
<b><u>WARRANTY</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**LICENSE PLATE RECOGNITION (LPR)**



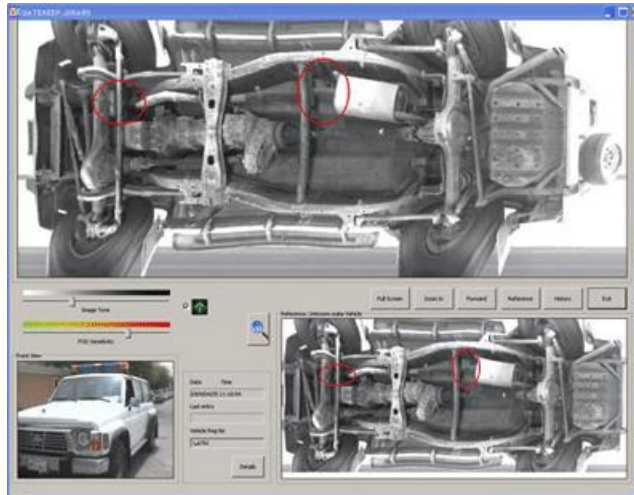
This should meet the following specifications.

<b>License Plate Recognition</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Function</b>	<ul style="list-style-type: none"> <li>• The system shall be placed at the side of a traffic lane or in any other location that requires automatic identification.</li> <li>• The license plate image shall be received by the system from a CCTV camera located at the vehicle's entrance lane.</li> </ul>	
<b>Operation</b>	<ul style="list-style-type: none"> <li>• The system shall include hardware and software, as well as the hardware interface which shall manage and control the cameras, illumination units, frame grabber, and I/O card.</li> <li>• The processing units shall communicate with the server via the data communication network.</li> </ul>	

<b>Hardware</b>	The hardware components shall include <ul style="list-style-type: none"> <li>• Proprietary integrated camera</li> <li>• Illumination units designed and manufactured to the specific demands of the LPR system.</li> </ul>	
<b>Camera</b>	The camera video frame containing the vehicle's license plate shall be converted into a textual alphanumeric data by an OCR program.	
<b>Verification</b>	<ul style="list-style-type: none"> <li>• The license plate number, as recognized by the OCR, shall be stored in the system for comparing it with the authorized numbers in the system's database and verifying the vehicle's authorization.</li> <li>• Upon acceptance or rejection of the vehicle, the LPR shall transmit a message to the Access Control Subsystem.</li> </ul>	
<b>Accessories</b>	The LPR sub system shall consist of the following elements: <ul style="list-style-type: none"> <li>• CCTV camera installed at the entrance lane.</li> <li>• Processing unit including a video frame grabber.</li> <li>• System's server containing the vehicles database and LPR application program.</li> </ul>	
<b><u>INTEGRATION</u></b>		
<b>Systems Integration</b>	The system shall have the capability of integration with: <ul style="list-style-type: none"> <li>• Access Control system,</li> <li>• CCTV,</li> <li>• Loop detector,</li> <li>• Crash pad attached to boom-barrier and other crash-rated barriers such as Road blocker, Tyre killers, etc.</li> <li>• Bollards</li> <li>• Tyre Rippers</li> <li>• Any other devices</li> </ul>	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +70°C	
<b>Application</b>	Outdoor (Fully Waterproof IP68)	
<b>WARRANTY</b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**UNDER VEHICLE SCANNER (UVSS)**





This should meet the following specifications.

<b>Under Vehicle Scanner (UVSS)</b>		
Feature	Minimum Requirements	Bidder's Response / Comment ( or X )
<b><u>GENERAL</u></b>		
<b>Function</b>	<ul style="list-style-type: none"> <li>• The under vehicle scanner shall be able to provide fast and effective monitoring of the underside of vehicles. This is to enable Security personnel manning the entrance points examine the underside of the car and detect the presence of any potentially hazardous material hidden beneath a vehicle.</li> <li>• The system is to provide high resolution colour images and tie them to the vehicle number plates are also provided</li> <li>• The scanner should be recessed &amp; flush with the road level.</li> </ul>	
<b>Cameras</b>	4 camera Video based system.	
<b>Mode Of Operation &amp; Features of the System</b>	<ul style="list-style-type: none"> <li>• Day &amp; Night operation with colour images.</li> <li>• Uses special purpose cameras &amp; Dynamic 4x 60 W LED lighting schemes to get clear sharper images, irrespective of height of vehicle.</li> <li>• Vehicle number plate capture / driver image capture feature.</li> <li>• Single monitor shows all camera images in a horizontally overlapped view.</li> <li>• Auto vehicle detection based on loop sensor.</li> </ul>	
<b><u>IMAGING</u></b>		
<b>No of cameras</b>	1/3 inch CCD,768x 576 pixels, HR type <0.05 lux sensitivity	
<b>Type Of Image</b>	Full Colour	
<b>Total Resolution (horizontal)</b>	1440 pixels	
<b>Illumination</b>	60 W white LED illumination per camera	
<b>Light control</b>	Dynamic light control with image analysis	
<b>Camera Housing</b>	IP66 cylindrical type 100mm ( Dia.) x 220mm (length)	
<b>CCD protection</b>	Mechanical Shutter ( when not in use)	
<b>Others</b>	Temperature sensor, Air cooler for camera enclosure	
<b><u>SYSTEM CONTROLLER</u></b>		
<b>Connectivity to PC</b>	100 base T LAN	

<b>Functions</b>	Dynamic light control, Video Ethernet Servers, Vehicle detection, Cooler control etc.	
<b>System power</b>	230VAC / 50Hz / 750VA	
<b>AIR cooler</b>	230VAC / 50Hz / 1.5 KVA	
<b>PC configuration</b>	Intel Core Duo,2.8GHz, 2GB DDR2,250GB HDD, 100 Base T LAN	
<b>Video Monitor</b>	26 inch Video LCD monitor with PC VGA interface., high contrast ratio	
<b>Video storage</b>	Approximately 64000 video clips in a 500 GB Hard disk	
<b><u>MECHANICAL</u></b>		
<b>Construction</b>	Galvanized Steel C- frame, with Ramps frame, with Ramps	
<b><u>ACCESSORIES</u></b>		
<b>Rack</b>	19 Inch, 2U rack.	
<b>Camera unit</b>	145 cm (L) x 19.5 cm (W) x 15 cm (H)	
<b>C-Frame</b>	197 cm (L) x 50cm (W) x 11 cm (H)	
<b>Ramp size</b>	193 cm (L) x 46cm (W) x 4 cm (H)	
<b>Accessories to be supplied</b>	<ul style="list-style-type: none"> <li>• Camera enclosure,</li> <li>• C-Frame</li> <li>• Ramps</li> <li>• System controller unit</li> <li>• Air cooler and hoses</li> <li>• PC, LCD monitor, KBD, Mouse</li> <li>• Magnetic Loop sensor</li> <li>• Cameras for Number plate and Driver image capturing</li> </ul>	
<b><u>INTEGRATION</u></b>		
<b>Systems Integration</b>	<p>The system shall have the capability of integration with:</p> <ul style="list-style-type: none"> <li>• Access Control system,</li> <li>• CCTV,</li> <li>• Loop detector,</li> <li>• Crash pad attached to boom-barrier and other crash-rated barriers such as Road blocker, Tyre killers, etc.</li> <li>• Bollards</li> <li>• Tyre Rippers</li> <li>• Any other devices</li> </ul>	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +70°C	
<b>Application</b>	<p>Outdoor (Fully Waterproof IP68)</p> <p>Air cooler option allows operation up to 50 Deg. C ambient temperature and high humidity (&gt;90% RH)</p>	
<b><u>WARRANTY</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	





**TRAFFIC LIGHTS**



This should meet the following specifications.

<b>Traffic Lights</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Function</b>	<ul style="list-style-type: none"> <li>The Traffic light system shall be used to control traffic to the designated areas within the premises</li> </ul>	
<b>Colour</b>	Colour to be used are: <ul style="list-style-type: none"> <li>Red to indicate "STOP"</li> <li>Green to indicate "GO"</li> </ul> LED flashing lights on two opposite sides;	
<b>Lamp Type</b>	LED based Lamps	
<b>Mounting Height</b>	2.5 meters	
<b>Mounting Device</b>	Pole which shall be Bolted above ground to a pad which is 500mm x 500mm	
<b>Size</b>	Small	
<b>Power</b>	<ul style="list-style-type: none"> <li>230V, 50Hz, Single phase</li> </ul>	
<b><u>INTEGRATION</u></b>		
<b>Systems Integration</b>	The system shall have the capability of integration with: <ul style="list-style-type: none"> <li>Access Control system,</li> <li>CCTV,</li> <li>Loop detector,</li> <li>Crash pad attached to boom-barrier and other crash-rated barriers such as Road blocker, Tyre killers, etc.</li> <li>Bollards</li> <li>Tyre Rippers</li> <li>UVSS</li> <li>Any other devices</li> </ul>	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +70°C	
<b>Application</b>	Outdoor (Fully Waterproof IP68)	
<b><u>WARRANTY</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**CARD READERS (STAND ALONE)**



This should meet the following specifications.

<b>Card Readers ( Stand Alone)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Function</b>	Grant access to the parking area via a proximity Card System	
<b>Power</b>	230V, 12-24 VAC/DC, 50Hz, Single phase	
<b>Dimensions</b>	Height - 800mm Depth - 500mm Width - 500mm	
<b>LCD Display</b>	To be included	
<b>Primary Language</b>	English	
<b>Intercom</b>	2 Way Intercom to be fitted so as communicate with Security personnel	
<b>Connectivity to PC</b>	100 base T LAN	
<b><u>PROXIMITY READER</u></b>		
<b>Smart Card Compatibility</b>	Should securely read access Control Data from 13.56MHz contactless Smart Cards	
<b>Compatibility to Systems</b>	Universal compatibility with most access control systems. This is by outputting card data in compliance with the SIA AC-01 Wiegand standard.	
<b>Read Range</b>	Optimal read range and read speed for increased access control throughput.  Contactless smart card reader shall provide the following typical contactless read ranges: <ul style="list-style-type: none"> <li>• Up to 8.9 cm using ISO 15693 HID iCLASS card.</li> <li>• Up to 3.8 cm using ISO 15693 HID iCLASS Key or Tag</li> <li>• Up to 5.1 cm using MIFARE/DESFire card (CSN)</li> </ul>	
<b>Availability</b>	Global, off-the-shelf availability.	
<b>Programming</b>	Built in compatibility across the product line without the need of special programming. This should ensure Secure access control data exchange between the smart card and the reader utilizing key diversification and mutual authentication routines.	
<b>Reader Programming</b>	The contactless smart card reader shall provide customizable reader behavior options either from the factory, or defined in the field through the use of pre-configured command cards. Reader behavior programming options shall include: <ul style="list-style-type: none"> <li>• LED &amp; Audio configurations</li> </ul>	

	<ul style="list-style-type: none"> <li>Disablement of reading specific card technologies (typically used after migration is complete to new technology).</li> <li>ISO 14443A CSN (E.g. MIFARE/DESFire) output configuration.</li> <li>Wiegand output spacing and timing.</li> </ul>	
<b>Control Formats</b>	Backwards compatibility with legacy 125 KHz proximity access control formats (E.g. 26-bit, 32, 35-bit, 37-bit, 56-bit, and HID Corporate 1000 formats).	
<b>Transmission Encryption</b>	Reader shall be compatible with HID's iCLASS mutual authentication algorithm using 64-bit authentication keys. All RF data transmission between the card and reader shall encrypted using a secure algorithm to ensure that the communication between the card and reader can never be copied and repeated back to the reader (sniffing and replay).	
<b>Indicators</b>	<p>Customizable behavior for indicator lights and audible tones.</p> <p>AUDIO BEEPER: Provides various tone sequences to signify:</p> <ul style="list-style-type: none"> <li>Access Granted</li> <li>Access Denied</li> <li>Power up &amp;</li> <li>Diagnostics</li> </ul> <p>LIGHT BAR: A high-intensity light bar shall provide clear visual status in the following colours:</p> <ul style="list-style-type: none"> <li>Red</li> <li>Green</li> <li>Amber</li> </ul> <p>The light bar shall provide uniform distribution of light. Thus eliminating bright individual light spots</p>	
<b>Expandability</b>	<p>The contactless smart card reader shall provide the ability to upgrade its application code through the use of pre-configured firmware cards. This feature shall allow previously installed readers be reconfigured to modify their behavior and capabilities as the project environment evolves.</p> <p>The reader shall also allow the reader firmware to be upgraded in the field without the need to remove the reader from the wall through the use of factory-provided Application Cards.</p>	
<b><u>INTEGRATION</u></b>		
<b>Systems Integration</b>	<p>The system shall have the capability of integration with:</p> <ul style="list-style-type: none"> <li>Access Control system,</li> <li>CCTV,</li> <li>Loop detector,</li> <li>Crash pad attached to boom-barrier and other crash-rated barriers such as Road blocker, Tyre killers, etc.</li> <li>Bollards</li> <li>Tyre Rippers</li> <li>Any other devices</li> </ul>	
<b><u>ENVIROMENTAL</u></b>		
<b>Temperature</b>	Operating Temp of -40°C to +70°C	
<b>Application</b>	Outdoor (Fully Waterproof IP68)	
<b>WARRANTY</b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	



**HAND HELD EXPLOSIVES DETECTOR**



Model: Should be as EVD3500 Model or equivalent to approval

This should meet the following specifications:

<b>Hand Held Explosives Detector</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Function</b>	<ul style="list-style-type: none"> <li>• The Hand Held Explosives Detector should be a flexible and easy to operate, dual mode, portable hand held explosives detector, capable of both vapour and particulate sampling, which does not use a radioactive source.</li> <li>• Vapours are sampled directly by vacuum into the sampling nozzle.</li> <li>• Particulates are sampled by swiping a suspected object with cotton gloves and then transferring the traces to a screen which is inserted into the sampling port.</li> <li>• This dual capability should enable users to select the most suitable method of sampling for the explosives of interest</li> <li>• Detector should starts processing samples immediately and gives results in just seconds.</li> <li>• All identifying results should be indicated on the LCD and by a volume-adjustable audio alarm, making detection a simple one-step process.</li> </ul>	
<b><u>FEATURES</u></b>		
<b>Construction Material</b>	ABS, shielded.	
<b>Dimensions &amp; Weight</b>	Length - 510mm Width - 140mm Height - 110mm Weight - 3Kg Maximum	
<b>Portability</b>	<ul style="list-style-type: none"> <li>• Self-contained, rugged, and lightweight less than 3.0 kg.</li> <li>• Should come in a fully equipped, rugged carrying case.</li> </ul>	
<b>Use</b>	<ul style="list-style-type: none"> <li>• Ready to use without warm-up (after daily 1-minute start).</li> <li>• Simple push-button automatic sampling with go/no go readouts displayed on an easy-to-read LCD.</li> <li>• It should be ideal for use by non-technical personnel.</li> </ul>	
<b>Components</b>	<ul style="list-style-type: none"> <li>• Less costly to budget and operate</li> <li>• No internal consumables</li> <li>• No calibrations</li> <li>• No radiation licenses or certificates</li> </ul>	
<b>Detection Principle</b>	Luminol Chemilux, disposable cartridge, no radioactive source	

<b>Sampling Methodology</b>	Vapour and particle sampling;	
<b>Sensitivity &amp; detectable compounds</b>	Most military and commercially available explosives (low nanogram level) of C-4, TNT, Dynamite, PETN, Semtex, EGDN, DMNB, RDX, ANFO, Black powder, Ammonium Nitrate, Urea Nitrate, Nitro-glycerine and TATP with low false alarm levels and few interferents.	
<b>Controls</b>	Power switch, keypad, Automatic Vapour/Particle selector, audio control and Sample switch;	
<b>Warm-up Time</b>	None (after daily 1-minute start);	
<b>Typical sample analysis time</b>	Sample: 5-20 Seconds	
<b>Operational status indicators</b>	LED indicator lights, (LCD) display with graphic display; status messages, standby battery voltage, battery, ready, sample mode, measuring detector voltage	
<b>Alarm audio indicator</b>	Volume-adjustable alarm with earphones	
<b>Data storage &amp; communications</b>	1,000 retrievable records, RS-232 serial output for remote control and monitoring	
<b>Power supply</b>	12-volt DC rechargeable battery pack, External battery pack, 12-volt AC adapter	
<b>Radioactive Source</b>	None Should be used	
<b><u>WARRANTIES</u></b>		
<b>Operating Temp.</b>	0°C to +55°C	
<b>Storage Temp.</b>	0°C to +65°C	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**GATE SYSTEMS CONTROL WORKSTATIONS**



This should meet the following specifications:

<b>Gate Systems Control Workstations</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Model</b>	HP dc7900 Convertible Minitower or equivalent to approval	
<b>Operating System</b>	Genuine Microsoft Windows 2007 ready & Included	
<b>Processor</b>	Intel Pentium Duo Core 2 with Processor as E8500 3.16 GHz 6 MB L2 cache 1333 MHz FSB	
<b>Cache Description</b>	1MB	
<b>Chipset</b>	Intel Q45 chipset	
<b>Memory</b>	4 GB 800 MHz DDR2 SDRAM PC2-4200 (533 MHz) Non-ECC Single chip OEM installed	
<b>Hard Drive</b>	Internal: 250 GB 7200 rpm SATA 3.0 Gb/s Hard Drive	
<b>Hard Disk Controller</b>	250 GB 7200 rpm SATA 3.0 Gb/s	
<b>Optical Drive</b>	SATA DVD-RW Supermulti Lightscribe (Double Layer/Dual Format)	
<b>Mouse / Pointing Device</b>	USB z-Button Optical Scroll Mouse with mouse pad Cache	
<b>I/O (Input/Output) Ports</b>	USB (2 rear and 2 front) 1 standard serial and 1 optional serial, 1 RJ-45, 1 VGA, audio in/out; headphone and microphone	
<b>Keyboard</b>	USB Standard QWERTY Keyboard	
<b>Graphic(s) Card</b>	Intel integrated Graphics Media Accelerator 4500	
<b>Monitor</b>	17" LCD TFT wide angle view antiglare / static coat	
<b>Network Characteristics</b>	Intel Pro/1000 CT PCIe xl Gigabit NIC	
<b>Software/ driver and utilities</b>	Preloaded Software: Adobe Acrobat Reader, Intervideo, WinDVD	
<b>Multimedia</b>	Integrated High Definition audio with ADI1884 coded and embedded Stereo Speakers (A11 speakers are stereo)	
<b>Power</b>	220v power supply – Active PFC, supplied with square pins power cable.	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**END**

## **SECURITY INTEGRATION PARTICULAR SPECIFICATIONS**

### **SPECIFIC NOTES TO TENDERERS**

#### **EXTENT OF INSALLATION**

The Contractor shall carry out all the necessary works for successful installation of the services mentioned as described and set out in the technical specifications, Bills of Quantities and accompanying drawings to the satisfaction of the consulting engineers.

This will include the supply & delivery of equipment, fix, install, connect, test, label, commissioning & the associated labour to a clean and neat working system that meets every detail as described in the specification

#### **WARRANTIES**

- All equipment supplied under the scope, including all associated installations shall be warranted by the manufacturer against electronic failure for the duration specified in the specifications and if possible, a lifetime warranted against Electronic & Programming failure. ("Lifetime" means that if the electronics & programming should fail at any time it will always be replaced).
  
- The **bidder to specify the recommended lifespan (if any)** of the system by which date replacement of the entire system is recommended.

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#### **SYSTEM SPECIFICATIONS**

The items described in the schedules to be priced are to meet the under listed minimum specifications and of the stated model or equal and approved.

#### **BMS CONNECTION**

The system should be BMS compatible

The BMS protocol to be used is to be “BACNET IP protocol”

#### **INTEGRATION SYSTEM**

The Integration System shall be installed on the premises to ensure monitoring & control of the premises to the levels desired from a Central Source.

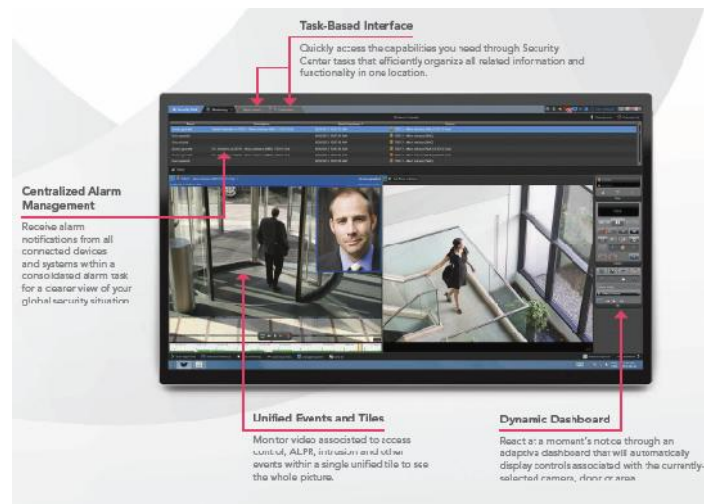
**EQUIPMENT**  
**INTEGRATION SERVER**



This should meet the following specifications:

<b>Integration Server</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Model</b>	HP ProLiant DL580G5 X7460 16GB (4P) or equivalent to approval	
<b>Operating System</b>	Microsoft Windows 2008 Server R2 ready.	
<b>Processor</b>	Intel Leona X7460 (6 core, 2.67GHz, bomb L3, 130W)	
<b>Cash Memory</b>	12MB 1.3	
<b>Memory Type</b>	X7460 models: 8GB PC2-5300 Fully buffered DIMMs (DDR2 667 Hz)	
<b>Memory</b>	32 GB RAM, OEM installed	
<b>Storage Controller</b>	4P Base Models: HP Smart Array P411i/512MB BBWC controller	
<b>Internal Hard Disk</b>	<ul style="list-style-type: none"> <li>• Capacity: 16 X boob SAS of 10k Hot plug z.s-inch Enterprise HDD</li> <li>• CD ROM Drive: 24 X IDE DVD ROM/CD-RW Drive</li> <li>• Operating System: Red Hat Linux 5 or Microsoft Windows 2008 Server R2 Ready</li> <li>• LAN Card: Dual NC371i Multi-function Gigabit Server Adaptors (Embedded)</li> </ul>	
<b>HP Storage Works SCSI</b>	<ul style="list-style-type: none"> <li>• Tape Drives, External: 1 x external LTO-3 Ultrium 960 Drive</li> <li>• Power Supply (4) standard (third and fourth power supplies for redundancy)</li> <li>• Form Factor: Rack mountable, with complete mounting kit</li> <li>• SAN SWITCH: TWO (2) HP Storage Works 8/16 SAN Switch with licenses and 24 x HP Storage Works 8/4Gb SW Single PK SFP Transceiver</li> </ul>	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	





The preferred Unified Security Platform is “Genetec Unified Security Platform” with “Omnicast” IP video Management Software, “Synergis” IP Access Control Software & “AutoVu” IP Automatic License Plate Recognition Software among others

This should meet the following specifications.

<b>Unified Security Platform</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b>GENERAL</b>		
<b>Function</b>	<ul style="list-style-type: none"> <li>The platform should seamlessly blend IP security surveillance systems within a single intuitive interface to simplify operations.</li> <li>The platform should also be able to incorporate third party security and business systems for a completely unified management solution.</li> <li>The platform should have mobile apps and web client allow security personnel to access and control system capabilities directly from their mobile phones or tablets. Whether working on routine tasks or responding to a critical situation, operators should be able to view real-time or recorded video, control PTZ cameras, acknowledge alarms, respond to access control alerts, and unlock doors, from anywhere.</li> </ul>	
<b>Systems</b>	<p>The platform shall be able to interface the following systems all merged under one platform:</p> <ul style="list-style-type: none"> <li>Video Surveillance</li> <li>Access Control</li> <li>License Plate recognition</li> <li>Business Systems</li> <li>Asset Management</li> <li>Intercom systems</li> <li>Intrusion and Perimeter detection</li> <li>Mobile Applications &amp; Web Client</li> <li>Dynamic Interactive Maps to manage multiple sites</li> </ul>	

<b>Scalability</b>	The system should be scalable for future growth in the systems	
<b>Appliances</b>	The platform shall come with all necessary Network Security Appliances such as routers, etc. that will enable the network run on its own fully	
<b>Security</b>	The platform should be a secure platform and should be able to: <ul style="list-style-type: none"> <li>• Secure client-server communication with a sophisticated encryption mechanism</li> <li>• Integrate with Microsoft’s Active Directory to authenticate users using their Windows credentials</li> <li>• Use advanced password-protected operator login and track changes through audit reports</li> <li>• Assign rights and privileges to different sites for secure multi-tenant and multi-site functionality</li> <li>• Ensure high system availability through standard and advanced failover functionality</li> </ul>	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**CARD PRODUCTION UNIT**



This should meet the following specifications:

<b>Card Production Unit</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder’s Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Components</b>	<ul style="list-style-type: none"> <li>• Capture equipment - digital camera with all it accessories.</li> <li>• Dedicated software</li> <li>• Card printer</li> </ul>	
<b>Capture Equipment</b>	The capture equipment should have at least the following features: <ul style="list-style-type: none"> <li>• Auto capture: Operator clicks once in the image field and photo is immediately captured</li> <li>• Manual capture/live video: Provides live video for the operator to confirm positioning and facial expression</li> <li>• Auto crop: Image is automatically cropped to pre-defined ratio without operator intervention</li> <li>• Manual crop: The captured image can be resized by the operator by moving and sizing the boundaries of the cropping frame</li> </ul>	

	<ul style="list-style-type: none"> <li>• White balance: Settings can be selected to capture the most realistic colours for the lighting environment</li> <li>• Red-eye reduction: When selected, the camera triggers a red-eye reduction lamp to eliminate the possibility of red-eye</li> </ul>	
<b>Camera</b>	<p>The required camera should have at least the following technical specifications:</p> <ul style="list-style-type: none"> <li>• 12.1 Megapixels digital camera</li> <li>• Operating environment</li> <li>• Humidity: 10% - 90%</li> <li>• Temperature: 0° - 40° C</li> <li>• Flash range: Subject should be 0.6 to 1.8 meters from camera</li> <li>• Memory: 32 MB memory card</li> </ul>	
<b>External Flash</b>	<p>The required external flash should have at least the following technical specifications:</p> <ul style="list-style-type: none"> <li>• Power supply: 120v/240v Adjustable for full, half and quarter power</li> <li>• Three second recycle time</li> <li>• Flash life 50,000 flashes minimum at full power</li> <li>• Recommended work distance of 1.8 to 4.5 meters depending on the environment</li> </ul>	
<b>Camera Accessories</b>	<p>The camera will be supplied with:</p> <ul style="list-style-type: none"> <li>• Tripod</li> <li>• Backdrop</li> <li>• stand and</li> <li>• Frame</li> </ul>	
<b>Card Production Software</b>	<p>The required software should have the following features:</p> <ul style="list-style-type: none"> <li>• Flexible card, report and production form design</li> <li>• User-defined card size</li> <li>• Auto-create production form</li> <li>• Shape drawing support</li> <li>• Font sizing and colors</li> <li>• Multiple field selection, alignment and formatting</li> <li>• Copy card and report designs between projects</li> <li>• Field types</li> <li>• Variable text (with masking)</li> <li>• Static text (with word wrap option)</li> <li>• Photo (with border, ghost or transparent background option)</li> <li>• Date</li> <li>• Bar code (22 types, including PDF417 binary support)</li> <li>• Magnetic stripe</li> <li>• Static and variable graphic (with ghost and transparent color options)</li> <li>• Nonprintable area</li> <li>• List</li> <li>• Composite</li> <li>• Print count</li> <li>• Auto sequence</li> <li>• Signature</li> <li>• Smart card</li> <li>• Binary field</li> <li>• Event button</li> <li>• PDF417 binary bar code support</li> </ul>	
<b>Image Management</b>	<p>This Should have the following Properties:</p> <ul style="list-style-type: none"> <li>• In-production image import and export (.BMP, .EPS, .JPG, .PCT, .PCX, PNG, .PSD, .TGA, .TIF, .WMF)</li> <li>• Image and signature storage as BLOBs or files</li> <li>• Multiple images per record</li> <li>• Crop and adjust existing photo</li> <li>• Batch import/export photos and images from production</li> </ul>	

	<ul style="list-style-type: none"> <li>• Production and data management</li> <li>• Data-driven production</li> <li>• Supports multiple-table databases</li> <li>• Supports Software Developer’s Kit</li> <li>• Proximity card plug-in</li> <li>• SASI and Lifetouch plug-ins</li> <li>• Auto-create Microsoft® Access 2000 database</li> </ul>	
<b>Database Management</b>	<p>This Should have the following Properties:</p> <ul style="list-style-type: none"> <li>• Quick, advanced and stored searches</li> <li>• Retrieve records from “today”</li> <li>• Retrieve records from “this week”</li> <li>• Database support</li> <li>• Oracle® Oracle8i, Oracle9i and Oracle10g®</li> <li>• LDAP-compliant directory services (such as Microsoft® Active Directory®)</li> <li>• Microsoft Access 2000 and later</li> <li>• Microsoft® SQL Server™ 2000 and 2005</li> <li>• IBM® DB2® Universal Server 7.1 and 8.1</li> <li>• Help features</li> <li>• Online user’s guide</li> <li>• Online help</li> <li>• Help desk support</li> </ul>	
<b>Security Features</b>	<p>This Should have the following Properties:</p> <ul style="list-style-type: none"> <li>• Wizard for managing user account privileges</li> <li>• USB hardware security key</li> <li>• Application- or activity-level user security (per computer or system- wide)</li> <li>• Login timeout feature</li> <li>• Restrict project access by user</li> <li>• Secure user audit trail</li> <li>• Enhanced user password security</li> <li>• Expiration of password after user defined number of days</li> <li>• Compatible with the card printers</li> </ul>	
<b>Image Capture Options</b>	<p>This Should have the following Properties:</p> <ul style="list-style-type: none"> <li>• File input</li> <li>• The digital camera</li> <li>• TWAIN capture devices</li> <li>• Video for Windows capture devices</li> <li>• Signature solutions</li> <li>• Visitor Manager solution</li> </ul>	
<b>System Requirements</b>	<p>This Should have the following Properties:</p> <ul style="list-style-type: none"> <li>• Operating system</li> <li>• Microsoft® Windows® 2000, XP or Windows Vista®</li> <li>• Web browser</li> <li>• Internet Explorer v6.0 or later</li> <li>• Memory</li> <li>• 512 MB RAM</li> <li>• 100 MB hard disk space for application (not including database)</li> <li>• Color: 16-bit color (65,536 colors) (Cameras may require higher color)</li> <li>• Resolution: 800 x 600 screen resolution (1024 x 768 recommended)</li> <li>• Peripherals</li> <li>• CD-ROM drive</li> <li>• Available USB port</li> </ul>	
<b>Cards Printer Features</b>	<p>This Should have the following Properties:</p> <ul style="list-style-type: none"> <li>• Print capabilities</li> <li>• One or two-sided edge-to-edge printing</li> <li>• Full-colour or monochrome</li> </ul>	

	<ul style="list-style-type: none"> <li>• Ultraviolet fluorescent printing</li> <li>• Continuous-tone, full-colour, black-and-white photos</li> <li>• Alphanumeric text, logos and digitized signatures</li> <li>• Variety of bar codes</li> <li>• Background patterns</li> <li>• Full-colour print speed capabilities</li> <li>• Up to 175 cards per hour (one-sided print and laminate)</li> <li>• Up to 165 cards per hour (two-sided print and laminate)</li> <li>• Up to 105 card per hour (two-sided print and two-sided laminate)</li> <li>• Lamination and topcoat capabilities</li> <li>• Topcoat or patch lamination</li> <li>• Superior laminate patch coverage</li> <li>• Laminate without printing</li> </ul>	
<b>Connectivity</b>	<p>The following guidelines should be met:</p> <ul style="list-style-type: none"> <li>• Direct connect 10/100 Base-T</li> <li>• Ethernet</li> <li>• Bi-directional USB</li> <li>• Capacity</li> <li>• Input hopper: 100 cards, 0.76mm</li> <li>• Output hopper: 40 cards, 0.76mm</li> <li>• Operating system support</li> <li>• Bi-directional USB supported on Microsoft® Windows® 2000, XP and Windows Vista® operating systems</li> <li>• Printer driver pooling supported on Microsoft operating systems</li> <li>• Printer driver</li> <li>• User-adjustable image and colour controls</li> <li>• Stand-alone driver diagnostics</li> <li>• Colour image and test card preview</li> <li>• Online user help</li> <li>• Add text, pattern or image to topcoat</li> <li>• Supply usage tab</li> </ul>	
<b>User Friendly Operation</b>	<p>The following guidelines should be met:</p> <ul style="list-style-type: none"> <li>• Backlit LCD panel</li> <li>• Audible and visual message prompts</li> <li>• Automatic card feed</li> <li>• Quick-change ribbon and laminate cartridges</li> <li>• Automatic identification and validation for ribbons, laminates and topcoats</li> <li>• Automatic printer settings and offsets</li> <li>• Ribbon low warning</li> <li>• Ribbon saver</li> </ul>	
<b>Printer</b>	<p>The printer will be able to accept the following options:</p> <ul style="list-style-type: none"> <li>• Second laminator</li> <li>• Magnetic stripe encoding</li> <li>• ISO: IAT or NTT</li> <li>• Dual high and low coactivity</li> <li>• Tracks 1, 2 and 3 (1 track for NTT)</li> </ul>	
<b>Smart Card Personalization</b>	<p>This should be:</p> <ul style="list-style-type: none"> <li>• Contact/contactless all-in-one reader</li> <li>• Contact station</li> <li>• Prox by HID</li> <li>• iClass® by HID</li> </ul>	
<b>Magnetic stripe and smart card field upgradeability</b>	<ul style="list-style-type: none"> <li>• Input hopper empty alert</li> <li>• Printer-PC security software</li> <li>• Hardware lock suite</li> <li>• 200-card input hopper</li> <li>• 100-card output hopper</li> </ul>	

<b>Print Resolution</b>	300 dots per inch, 256 shades	
<b>Plastic Cards Accepted</b>	<ul style="list-style-type: none"> <li>• ISO ID-1/CR-80 size cards</li> <li>• 3.370 in. x 2.125 in.</li> <li>• (85.6mm x 53.98mm)</li> <li>• PVC with glossy laminate surface</li> <li>• Other core materials with PVC over-laminates are optional</li> <li>• Card thickness accepted (±10%)</li> <li>• Print only: 0.02 to 0.05 in. (0.51mm to 1.27mm)</li> <li>• Print and laminate: 0.03 to 0.05 in (0.76mm to 1.27mm)</li> </ul>	
<b>Electrical Requirements</b>	<ul style="list-style-type: none"> <li>• Dual voltage auto-sensing</li> <li>• 220/240V, 50/60 Hz</li> </ul>	
<b>Operating Environment</b>	<ul style="list-style-type: none"> <li>• 60°F to 95°F (15°C to 35°C)</li> <li>• 20% to 80% non-condensing humidity</li> </ul>	
<b>Storage Conditions</b>	<ul style="list-style-type: none"> <li>• 5°F to 140°F (-15°C to 60°C)</li> <li>• 10% to 90% humidity</li> </ul>	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support as a Minimum	

**ADMINISTRATION EQUIPMENT CABINET (FLOOR STANDING)**



The Administration Cabinet (Floor Standing) should meet the following specifications.

<b>ADMINISTRATION EQUIPMENT CABINET (FLOOR STANDING)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Size</b>	Width – 800mm Depth – 1200mm Height – As described in Bills of Quantities (42U, 32U, etc.)	
<b>Finish</b>	Finish with Epoxy Powder Coating (RAL 9004 Black)	
<b>Materials</b>	<ul style="list-style-type: none"> <li>• SPCC Cold Rolled Steel</li> <li>• Thickness: Mounting Profile 2.0mm, 19-inch Panel Mounting 1.5mm, Others 1.2mm</li> </ul>	
<b>Compliance</b>	Comply with ANSI/EIA RS-310-D, IEC297-2, DIN 41491; PART 1 DIN 41494; PART 7, GB/T 3047.2-92, ETSI Standard.	
<b>Protection</b>	IP20	
<b>Static Load</b>	Load rating at 800kg	

<b>Frame</b>	Full Vented Top Frame with Front / Rear / Side Cable Entrance	
<b>Top Tray</b>	6 x 4-inch Top Fan Tray with Guard & Filter (Low Noise)	
<b>Doors</b>	<ul style="list-style-type: none"> <li>• SIDE DOORS: 2 x Lift Off Type with Quick Release Catch &amp; Cam Lock</li> <li>• FRONT DOOR: 1 x Perforated (75%) Arc-Fold with Swing</li> <li>• REAR DOOR: 1 x Double-section Full Perforation with Swing Handle Lock (Hexagon Honey-Comb)</li> </ul>	
<b>Locks</b>	Handle Lock (Hexagon Honey-Comb)	
<b>Cable Management</b>	<ul style="list-style-type: none"> <li>• 2 x Front Cable management c/w Cable Ring</li> <li>• 1 x Vertical Cable Tray</li> </ul>	
<b>Panel Mounts</b>	<ul style="list-style-type: none"> <li>• 1 x Set Panel Mount Support</li> <li>• 4 x Panel Mount with Unit Indication &amp; Silk Screen Numbering</li> </ul>	
<b>Base Frame</b>	1 x Base Frame with Provision of Cable Entrance	
<b>Wheels</b>	<ul style="list-style-type: none"> <li>• 1 x Set of Heavy Duty Castor Wheels with Lock Mechanism</li> <li>• 1 x Set of Leveling Stand</li> </ul>	
<b>Trays</b>	2 x Vented Equipment Fixed Tray	
<b>Power Supply</b>	1 x Power Distribution Unit (12 Way Vertical ZeroU PDU) with 13A UK-Type Sockets for 240V AC	
<b>Accessories</b>	1 Packet of M6 Cage Nuts Assembly (50pcs)	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	

**ADMINISTRATION EQUIPMENT CABINET (WALL MOUNTED)**



The Administration Cabinet (Wall Mounted) should meet the following specifications.

<b>ADMINISTRATION EQUIPMENT CABINET (WALL MOUNTED)</b>		
<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b><u>GENERAL</u></b>		
<b>Size</b>	Width – 600mm Depth – 600mm Height – As described in Bills of Quantities (16U, 9U, etc.)	

<b>Finish</b>	Finish with Epoxy Powder Coating (RAL 9004 Black)	
<b>Materials</b>	<ul style="list-style-type: none"> <li>• SPCC Cold Rolled Steel</li> <li>• Thickness: Mounting Profile 2.0mm, 19-inch Panel Mounting 1.5mm, Others 1.2mm</li> </ul>	
<b>Compliance</b>	Comply with ANSI/EIA RS-310-D, IEC297-2, DIN 41491; PART 1 DIN 41494; PART 7, GB/T 3047.2-92, ETSI Standard.	
<b>Protection</b>	IP20	
<b>Static Load</b>	Static Load rating at 60kg	
<b>Frame</b>	Full Vented Top Frame with Front / Rear / Side Cable Entrance	
<b>Fan</b>	2 x 4-inch Fan (Low Noise) on Vented Top Flush Panel	
<b>Doors</b>	<ul style="list-style-type: none"> <li>• SIDE DOORS: 2 x Side Door with Cam Lock</li> <li>• FRONT DOOR: Tempered glass Door with Cam Lock and 180 Degree Swing</li> </ul>	
<b>Locks</b>	Handle Lock (Hexagon Honey-Comb)	
<b>Cable Entrance</b>	Top and Bottom modular cable entrance	
<b>Panel Mounts</b>	<ul style="list-style-type: none"> <li>• 4 x Panel Mount with Unit Indication &amp; Silk Screen Numbering</li> </ul>	
<b>Mounting</b>	1 x Integrated Wall Mounting Panel with support to hold the cabinet to its maximum static load	
<b>Trays</b>	2 x Vented Equipment Fixed Tray	
<b>Power Supply</b>	1 x Power Distribution Unit (6 Way PDU) with 13A UK-Type Sockets for 240V AC	
<b>Accessories</b>	1 Packet of M6 Cage Nuts Assembly (50pcs)	
<b><u>WARRANTIES</u></b>		
<b>Warranty</b>	3-Year Warranty and Support	

**END**



**2e. PARTICULAR QUALIFICATION FOR SECURITY BIDDERS**

**TABLE 01:**

**NOTE:** All Attachments should be bound in 1No. document with fliers separating the particular sections which shall be presented as part of the Bid. **Presentation shall follow the order stated below.**

<b>BIDDERS REQUIREMENTS</b>			
Item	Feature	Minimum Requirements	Bidder's Response / Comment ( or X )
<b>A</b>	<b><u>MANDATORY REQUIREMENTS FOR BID EVALUATION</u></b>		
<b>A1</b>	<b>Company / Firm Registration Certificate</b>	Attach Certificate	
<b>A2</b>	<b>Registration with Relevant Bodies &amp; Category as Applicable</b>		
	<b>(Note: For any document Listed, Documentary Evidence of the Certificate Should be attached)</b>		
		NCA	
		LOCAL AUTHORITY	
		P.I.N. Registration Certificate	
		VAT Registration Certificate	
		Tax Compliance Certificate	
		CCK	
		Manufacturers Authorization Letter	
		OTHER (Fill in Pen)	
<b>A3</b>	<b>Company Profile</b> A detailed soft company profile indicating the principle place of business MUST be attached to the Bid (Hard Copy or Soft copy in CD / USB Flash drive)	Attach Copy	
<b>A4</b>	<b>Power of attorney of signatory of Bid (if Joint Venture)</b>	Attach Copy	
<b>A5</b>	<b>Long Lead Items Program of Works:</b> Bidder to attach a Proposed program (Work method and schedule), Descriptions, drawings, and charts, as necessary, which show the lead times for the long lead items timelines	Attach	

<b>BIDDERS REQUIREMENTS</b>			
<b>Item</b>	<b>Feature</b>	<b>Minimum Requirements</b>	<b>Bidder's Response / Comment ( or X )</b>
<b>A6</b>	<b>Indicate Total Annual Revenue of Construction work performed in the last 3 years in KShs.</b>		
	<ul style="list-style-type: none"> <li>• Attach Proof of Financial Statements</li> <li>• Attach Bank Contacts: Name, Address &amp; Telephone Numbers of the banks that may provide references if contacted by Employer</li> </ul>	2014	
		2015	
		2016	
<b>B</b>	<b><u>OTHER REQUIREMENTS</u></b>		
<b>B1</b>	<b>Brochures of Equipment's offered</b>	Attach with all details	
<b>B2</b>	<b>Financial Resources Access:</b>	Attach	
	<ul style="list-style-type: none"> <li>• Evidence of access to Financial Resources to meet the qualification requirements: cash in hand, lines of credit, etc.</li> <li>• List here as appropriate &amp; Note that Proof in Documentary Evidence may be require to be provided upon request</li> </ul>		
<b>B3</b>	<b>Equipment Guarantee (By bidder) and warranty period specified by manufacturer</b>	Attach:	
	<b>Note:</b> Minimum of 24 Months is required	<b>Note:</b> Warranty shall be specific from date of completion of project.	
	<b>Note:</b> Schedule to be attached of all equipment on warranty		
<b>B4</b>	<b>Annual Maintenance Charges</b>		
	<ul style="list-style-type: none"> <li>• After Expiry of DLP and Warranty Period, Indicate the proposed charges to be levied for annual maintenance of equipment &amp; accessories</li> <li>• NOTE: The above are to be Labour only charges excluding parts which shall be fitted only with prior approval by the client.</li> </ul>	1 <sup>st</sup> Year (KShs.)	<b><u>Kshs.</u></b>
		2 <sup>nd</sup> Year (KShs.)	<b><u>Kshs.</u></b>
		3 <sup>rd</sup> Year (KShs.)	<b><u>Kshs.</u></b>
<b>B5</b>	<b>Foreign Currency</b>	State Foreign currency used in the pricing (if any) and rate of exchange to KShs.	1..... (Foreign Currency)

			= ..... KShs.
<b>BIDDERS REQUIREMENTS</b>			
Item	Feature	Minimum Requirements	Bidder's Response / Comment ( or X )
B6	Response Time	In event of emergency, the response time shall be how many hours (Preferred is 3 Hours)	..... Hours
B7	<b>Delivery Period of Equipment from Date of Award (Fill Where Applicable)</b>		
		Days	
		Weeks	
		Months	
		Years	
B8	<b>Delivery Period of Site Works from Date of Award (Fill Where Applicable)</b>		
		Days	
		Weeks	
		Months	
		Years	

**TABLE 02:**

<b>1.11</b>	<b>Work of a similar nature and volume performed as Prime Contractor over the last five years. The values should be indicated in the same currency used above. Also list details of work under way or committed, including expected completion date.</b>			
PROJECT NAME & COUNTRY	CLIENT / CONTACT PERSON	LEAD CONSULTANT	TYPE OF WORK DONE & YEAR OF COMPLETION	CONTRACT VALUE (KShs.)

**TABLE 03:**

<b>1.12</b>	<b>Qualification and experience of key personnel proposed for administration and execution of the Contract. Attach biographical data.</b>		
POSITION	NAME	QUALIFICATIONS	YEARS OF EXPERIENCE IN PROPOSED POSITION
<b>PROJECT MANAGER</b>			
<b>SITE FOREMAN</b>			
<b>OTHER(S)</b>			

**TABLE 04:**

1.13 Proposed contracts and firms involved.			
SECTION OF THE WORKS	VALUE OF CONTRACT	CONTRACTOR (NAME & ADDRESS)	EXPIRIENCE IN SIMILAR WORK

**TABLE 05:**

1.14 Information on current litigation in which the Bidder is involved.		
OTHER PARTY(IES)	CAUSE OF DISPUTE	AMOUNT INVOLVED

**TABLE 06:**

<b>1.15</b>	<b>Additional Requirements:</b>	
	Bidders should provide any additional information required in these documents to fulfill the requirements thereof if applicable	

Signed (As in form of Tender) \_\_\_\_\_

Official Stamp & Date \_\_\_\_\_

## **2f. SPECIAL NOTES TO ALL TENDERERS**

1. **CONTRACT TYPE:** This is a fixed price Contract and no claims shall be entertained on whatever ground. The Contractor is advised to include all such costs as he projects may arise in his unit rates. Any variations in the exchange rate will also be no excuse for any variations in the contract sum.
2. **COPYRIGHT:** The copyright of this specification is vested in the Engineers and no part thereof may be reproduced without their express permission, given in writing.
3. **CURRENCY:** The specifications must be priced in [Kenya Currency i.e. Shillings and Cents](#) unless Otherwise as may be expressly stated
4. **QUALIFICATION:** The tenderer shall not otherwise qualify the text of this specification. Any alteration or qualification made without authority will be ignored and the text of the specification as printed adhered to.
5. **BILLS OF QUANTITIES:** The Bills shall be read in conjunction with the Preliminaries, General Conditions of Contract, Technical Specifications and Drawings
6. **PAGES IN DOCUMENT:** The tenderer is required to check the number of pages in this document and should any be found to be missing or the figures indistinct, he/she must inform the Engineers at once and have the same rectified. Should the tenderer be in doubt the precise meaning of any item, word or figures or for any reason whatsoever observe any apparent omission of words or figures, he must inform the Engineers in order that the correct meaning may be decided upon before the date for the submission of the tenders.
7. **RATES & PRICES:** The rates and prices tendered in the priced Bills of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Plant, equipment, labor, supervision, materials, erection, maintenance, insurance, profit, together with all general risks, liabilities and obligations set out or implied in the Contract, including taxes and duties (including V.A.T). The quantities given are provisional and are for guidance only. The whole works shall be re-measured upon practical completion.
8. **FILLING OF RATES:** A rate or price shall be entered against each item in the priced Bills of Quantities, whether quantities are stated or not. The cost of items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bills of Quantities.
9. **PRICE ALLOWANCES:** The tenderer shall be deemed to have made allowances in his unit prices generally to cover items of preliminaries or additions to prime cost Sums or other items priced against the respective items.
10. **TAXES:** The tenderer's price shall include all government taxes including duties, VAT, etc. No claims whatsoever will be allowed if the tenderer does not price them as aforementioned. VAT must be calculated for all sums as filled in the document which includes contingencies, PC Sums etc.
11. **COST:** The whole cost of complying with the provision of the Contract shall be included in the Items provided in the Bills of Quantities, and where no items are provided the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.
12. **TENDER EXPENSES:** In no case will expense incurred by the tenderer in preparation of this tender be reimbursed.

13. **REFERENCES:** General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bills of Quantities. Reference to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bills of Quantities.

14. **PC SUMMS & CONTINGENCIES:** Provisional Sums and contingencies included and so designated in the Bills of Quantities shall be expended in whole or in part at the sole discretion of the Engineer.

Under no circumstances shall the contingencies in the BQ be used to cater for contractor’s omissions or underquoting of items listed in the Bills.

Under no Circumstances shall the contractor claim any costs e.g. profits, attendance, etc. connected to the PC sums and contingencies if the client were to remove the PC Sum item

15. **ERRORS:** No liability whatsoever will be admitted nor claim allowed in respect of errors in the completed tender due to mistakes in this document which should have been rectified in the manner described above.

Errors in pricing will be corrected by the Engineer for any arithmetic errors in computation or summation as follows: -

a) Where there is a discrepancy between amounts in figures and in words, the amount in words will govern; and

c) Where there is a discrepancy between the unit rate and the total amount derived from the multiplication of the unit price and the quantity, the unit rate as quoted will govern, unless in the opinion of the Engineer, there is an obviously gross misplacement of the decimal point in the unit prices, in which event the total amount as quoted will govern and the unit rate will be corrected.

16. **MATERIALS ORDERING:** The Contractors shall be solely responsible for the accurate ordering of materials in accordance with the drawings and these specifications.

17. **CLIENT SUPPLY ITEMS:** The client has the right to choose between the contractor to supply specific fittings / items as specified and the fittings / items being a direct procurement by the client.

Under no Circumstances shall the contractor claim any costs e.g. profits, attendance, etc. connected to the “Client Supplied” items if the client were to Omit any items noted as “Client Supply” in the Bills

Signed (As in form of Tender) \_\_\_\_\_

Official Stamp & Date \_\_\_\_\_



# **FORM OF AGREEMENT**

## FORM OF AGREEMENT

THIS AGREEMENT, made the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_ between

**KENYA MEDICAL SUPPLIES AUTHORITY** of P.O.BOX 47715 – 00100 NAIROBI

(hereinafter called “the Employer”) of the one part AND \_\_\_\_\_

\_\_\_\_\_ of [or whose registered office is situated at] \_\_\_\_\_

(hereinafter called “the Contractor”) of the other part.

WHEREAS THE Employer is desirous that the Contractor executes

**PROPOSED CONSTRUCTION OF KEMSA MODERN WAREHOUSE & OFFICE BLOCK, TENDER**

**NO. GF-KEMSA-CONST - 3/OIT 6/2017-2018** (hereinafter called “the Works”) located on **Land LR No.**

**9042/176 Embakasi, Nairobi** and the Employer has accepted the tender submitted by the Contractor for the

execution and completion of such Works and the remedying of any defects therein for the Contract Price of

Kenya Shillings \_\_\_\_\_ (Amount in figures),

Kenya Shillings \_\_\_\_\_ (Amount in figures),

NOW THIS AGREEMENT WITNESSETH as follows:

3. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

4. The following documents shall be deemed to form and shall be read and construed as part of this Agreement i.e.

(viii) Letter of Acceptance

(ix) Form of Tender

(x) Conditions of Contract Part I

(xi) Conditions of Contract Part II and Appendix to Conditions of Contract

(xii) Specifications

(xiii) Drawings

(xiv) Priced Bills of Quantities

5. In consideration of the payments to be made by Kenya Medical Supplies Authority to the Contractor as hereinafter mentioned, the Contractor hereby covenants with Kenya Medical Supplies Authority to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.

6. Kenya Medical Supplies Authority hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The common Seal of \_\_\_\_\_

Was hereunto affixed in the presence of \_\_\_\_\_

Signed Sealed, and Delivered by the said \_\_\_\_\_

Binding Signature of Kenya Medical Supplies Authority \_\_\_\_\_

\_\_\_\_\_

Binding Signature of Contractor \_\_\_\_\_

In the presence of

(i) Name \_\_\_\_\_

Address \_\_\_\_\_

Signature \_\_\_\_\_

(ii) Name \_\_\_\_\_

Address \_\_\_\_\_

Signature \_\_\_\_\_

# **FORM OF TENDER**

## FORM OF TENDER

Tender No.:GF-KEMSA-CONST - 3/OIT 6/2017-2018

Date\_\_\_\_\_

To: Kenya Medical Supplies Authority

P. O. Box 47715 - 00100

NAIROBI.

Dear Sirs,

**RE: PROPOSED CONSTRUCTION OF KEMSA MODERN WAREHOUSE & OFFICE BLOCK**

In accordance with the Instructions to Tenderers, Specifications and Bills of Quantities for the execution of the above named Works, we, the undersigned offer to construct, install and complete such Works and remedy any defects therein for the sum of Kshs.\_\_\_\_\_ [Amount in figure]

Kenya Shillings\_\_\_\_\_

\_\_\_\_\_ [Amount in words].

We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Architect's notice to commence, and to complete the whole of the Works comprised in the Contract within \_\_\_\_\_ (In Words) ( \_\_\_\_\_ ) (in Figures) Weeks.

We agree to abide by this tender until \_\_\_\_\_ [Insert date], and it shall remain binding upon us and may be accepted at any time before that date. Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any tender you may receive. Dated this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_

Signature \_\_\_\_\_ in the capacity of \_\_\_\_\_ duly authorized to sign tenders

for and on behalf of \_\_\_\_\_

**Tenderer’s Name:** \_\_\_\_\_

Tenderer’s Address: \_\_\_\_\_

Tenderer’s Signature: \_\_\_\_\_

**Witness’s Name:** \_\_\_\_\_

Witness’s Address: \_\_\_\_\_

Witness’s Signature: \_\_\_\_\_ Date \_\_\_\_\_

# **PART 03:**

## **BILLS OF QUANTITIES**



**STRUCTURED  
CABLING  
INSTALLATIONS**

## **STRUCTURED CABLING INSTALLATIONS**

**NOTE:**

- All Copper Installations Cabling in this document shall be Cat 6A solution end to end. Using strictly SIEMON for all installation items Except cable organizers which shall be NEXAN.
- All Fiber Installations and Cabling to be as SIEMON end to end
- Technical product catalogues and specifications for quoted models to be attached
- All Certifications and Warranties must be provided for by the supplier of the cable / Equipment at the end of the project.

**A WAREHOUSE**

**A1 FIBER DISTRIBUTION & CABLING**

<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>QTY</b>	<b>RATE (Kshs.)</b>	<b>COST (Kshs.)</b>
A1.01	<p><b>ICT DISTRIBUTION CABINET (SERVER ROOM):</b> Specifications of the Cabinet to be as:</p> <p>42U Rack Floor Standing</p> <p>Model As TOTEN (Imported Quality)</p> <p>Width as 800mm</p> <p>Depth as 1200mm</p> <p>Finish with Epoxy Powder Coating (RAL 9004 Black)</p> <p>Frame: Full Vented Top Frame with Front / Rear / Side Cable Entrance</p> <p>TOP TRAY: 6 x 4-inch Top Fan Tray with Guard &amp; Filter (Low Noise)</p> <ul style="list-style-type: none"> <li>• SIDE DOORS: 2 x Lift Off Type with Quick Release Catch &amp; Cam Lock</li> <li>• FRONT DOOR: 1 x Perforated (75%) Arc-Fold with Swing</li> <li>• REAR DOOR: 1 x Double-section Full Perforation with Swing Handle Lock (Hexagon Honey-Comb)</li> </ul> <p>Complete with Cable Management, Lock &amp; Key, Panel Mounts, Base frame with provision for cable entrance, Set of Heavy duty Castor wheels, Set of Levelling stands, 12 Way Power Distribution unit with 13A UK Sockets for 240V and all other accessories required.</p>	No.	1		

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
<b>FIBER SYSTEM</b>					
A1.02	<b>FIBER PATCH PANEL (MAIN CABINET):</b> 24 port Fiber Optic Modular Panel with the option of using SC simplex, LC duplex or MT-RJ adapters	No.	1		
A1.03	<b>FIBER PATCH CORDS (MAIN CABINET):</b> 1 Meter Long Appropriate Fiber Patch cords as Siemon	No.	18		
A1.04	<b>FIBER PATCH PANEL (FLOOR CABINET):</b> 12 port Fiber Optic Modular Panel with the option of using SC simplex, LC duplex or MT-RJ adapters	No.	4		
A1.05	<b>FIBER PATCH CORDS (FLOOR CABINETS):</b> 1 Meter Long Appropriate Fiber Patch cords as Siemon	No.	14		
A1.06	<b>ADAPTORS -Duplex:</b> Duplex LC Fiber Adaptors	No.	32		
A1.07	<b>LC CONNECTORS - Duplex:</b> Duplex LC Fiber Connectors	No.	32		
A1.08	<b>FIBER TERMINATION:</b> Fiber Termination to Patch Panel Per Core	No.	32		
A1.09	<b>CABLE MANAGERS (MAIN CABINET):</b> Siemon 2 U Cable managers for patch cords, horizontal and vertical cables e.t.c to approved cable organizers	No.	40		
A1.10	<b>FIBER VERTICAL CABLING:</b> 4-core fiber optic cable (multimode) 62.5/12.5 micron. This will run in dual to each Floor ICT Cabinet	LM	1860		
A1.11	Labelling of all equipment to approval, testing & commissioning	Item	1		

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
A1.12	Any other additional items, please specify below and attach catalogues. (If none write NIL)				
i)		Item	1		
ii)		Item	1		
iii)		Item	1		
iv)		Item	1		
<b>A1.13</b>	<b>Sub-Total c/f to WAREHOUSE STRUCTURED CABLING INSTALLATIONS PRICE SUMMARY PAGE</b>				

**A2 DATA & VOICE CABLING**

A2.01	<b>DATA POINTS:</b> Horizontal cabling for data outlet points wired in 4 pair UTP CAT 6A CU cables drawn in existing trunking and radiating in a star topology from the existing Administration cabinet.	No.	112		
A2.02	<b>VOICE POINTS:</b> Horizontal cabling for voice outlet points wired in 4 pair UTP CAT 6A CU cables drawn in existing trunking and radiating in a star topology from the existing Administration cabinet.	No.	112		
A2.03	<b>DUAL GANG SOCKETS:</b> RJ45 Dual Gang socket outlet / faceplate c/w modules	No.	112		
A2.04	<b>DESK PATCH CORDS:</b> Drop cables / flyleads. Factory terminated, 5 meters long	No.	224		
A2.05	<b>CABINET PATCH CORDS:</b> Cat 6A stranded 4 pair UTP patch cord. Factory terminated, 1 meter long	No.	224		

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
A2.06	<b>DATA PATCH PANEL:</b> 48 port Data patch panel	No.	5		
A2.07	<b>DATA PATCH PANEL:</b> 24 port Data patch panel	No.	1		
A2.08	<b>CABLE MANAGER:</b> Provide 2HU cable organizers for patch leads, horizontal cabling etc to approval.	No.	40		
A2.09	<p><b>ICT CABINET (1st, 2nd &amp; 3rd Floors):</b> Specifications of the Cabinet to be as:</p> <p><a href="#">42U Rack Floor Standing</a> Model As TOTEN (Imported Quality) Width as 800mm Depth as 1200mm Finish with Epoxy Powder Coating (RAL 9004 Black)</p> <p>Frame: Full Vented Top Frame with Front / Rear / Side Cable Entrance TOP TRAY: 6 x 4-inch Top Fan Tray with Guard &amp; Filter (Low Noise)</p> <ul style="list-style-type: none"> <li>• SIDE DOORS: 2 x Lift Off Type with Quick Release Catch &amp; Cam Lock</li> <li>• FRONT DOOR: 1 x Perforated (75%) Arc-Fold with Swing</li> <li>• REAR DOOR: 1 x Double-section Full Perforation with Swing Handle Lock (Hexagon Honey-Comb)</li> </ul> <p>Complete with Cable Management, Lock &amp; Key, Panel Mounts, Base frame with provision for cable entrance, Set of Heavy duty Castor wheels, Set of Levelling stands, 12 Way Power Distribution unit with 13A UK Sockets for 240V and all other accessories required.</p>	No.	3		
A2.10	<b>ICT CABINET (Ground Floor):</b> 15U cabinet. Fully loaded including cable management tray all cable management accessories, lock and key, glass viewing window, mounting provisions and an extractor fan. Should also include a PDU for power connection inside the Cabinet.	No.	1		
A2.11	Labelling of RJ45 sockets and all equipment to approval, testing & commissioning	Item	1		

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
A2.12	<i>Any other additional items, please specify below and attach catalogues. (If none write NIL)</i>				
i)		Item	1		
ii)		Item	1		
iii)		Item	1		
iv)		Item	1		
A2.13	<b>Sub-Total c/f to WAREHOUSE                      STRUCTURED CABLING                      INSTALLATIONS PRICE SUMMARY                      PAGE</b>				

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
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**A3 NETWORK SWITCHES**

<i>FLOOR SWITCHES</i>					
A3.01	<b>FLOOR NETWORK SWITCH:</b> CISCO WS-C3650-24PS-S catalyst 10/100 PoE + 2SFP Standard Image Switch with 2GBIC fiber ports and structured multilayer software Image with in line power c/w stacking Kit & stacking cables..The switches to be procured from CISCO channel partners complete with warranty certificate & support. Proof of where the switch was procured will be required. <b>NOTE:</b> All Switches shall have SMARTNET as a Mandatory requirement.	No.	6		
A3.02	<b>MODULES:</b> Cisco Multimode Fiber modules for above switch(es) for the above switches	No.	12		
<i>CORE SWITCHES</i>					
A3.03	<b>CORE SWITCH 01:</b> CISCO WS-C3850-12S-S 12 Port Fiber Core Distribution Switch c/w Fiber Ports, Fiber Modules, Redundant Power Supply and stacking Kit with stacking cables. The switches to be procured from CISCO channel partners complete with warranty certificate & support. Proof of where the switch was procured will be required. <b>NOTE:</b> All Switches shall have SMARTNET as a Mandatory requirement.	No.	1		
A3.04	<b>MODULES:</b> Cisco Multimode Fiber modules for above switch(es) for the above switches. Should be 10G	No.	2		
A3.05	<b>STACK CABLES:</b> Appropriate stack cables for the above Core Switches	No.	0		

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
A3.06	<i>Any other additional items, please specify below and attach catalogues. (If none write NIL)</i>				
i)		Item	1		
ii)		Item	1		
iii)		Item	1		
iv)		Item	1		
A3.07	<b>Sub-Total c/f to WAREHOUSE                      STRUCTURED CABLING                      INSTALLATIONS PRICE SUMMARY                      PAGE</b>				



Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
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**WAREHOUSE STRUCTURED CABLING INSTALLATIONS PRICE SUMMARY PAGE**

A1	FIBER DISTRIBUTION & CABLING				
A2	DATA & VOICE CABLING				
A3	NETWORK SWITCHES				
A4	<b>PRELIMINARIES:</b> Preliminaries, contract conditions, general conditions & particular specifications				
A5	<b>CABLE MANAGEMENT:</b> Sum for cable Ties for holding the cables above to the cable trays and cabinets				
A6	<b>POWER SUPPLY:</b> Sum for power supply to the various components that require energisation.				
A7	<b>LIAISON:</b> Sub contractors liason with Other Contractors, Service Providers, Client team, etc for connections and all matters pertaining to above Installations for the project				
A8	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required				
A9	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>				

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
A10	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )				
A11	<b>TESTING &amp; COMMISSIONING:</b> Sum for Installations, Termination, Programming, Testing, Customization, Training (5No.) and Certification of all the above mentioned system to a working and functional condition.				
A12	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion i.e. for maintainance and replacement of consumables such as blown out devices				
	<i>Allow the following provisional sums:</i>				
A13	WIFI Installations				2,320,700
A14	Fiber Connection Sum				500,000
A15	Contingency				900,000
A16	<b>SUB-TOTAL c/f to STRUCTURED CABLING PRICE SUMMARY PAGE</b>				

**B OFFICE BLOCK****B1 FIBER DISTRIBUTION & CABLING**

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
B1.01	<p><b>ICT DISTRIBUTION CABINET (SERVER ROOM):</b> Specifications of the Cabinet to be as:</p> <p>42U Rack Floor Standing</p> <p>Model As TOTEN (Imported Quality)</p> <p>Width as 800mm</p> <p>Depth as 1200mm</p> <p>Finish with Epoxy Powder Coating (RAL 9004 Black)</p> <p>Frame: Full Vented Top Frame with Front / Rear / Side Cable Entrance</p> <p>TOP TRAY: 6 x 4-inch Top Fan Tray with Guard &amp; Filter (Low Noise)</p> <ul style="list-style-type: none"> <li>• SIDE DOORS: 2 x Lift Off Type with Quick Release Catch &amp; Cam Lock</li> <li>• FRONT DOOR: 1 x Perforated (75%) Arc-Fold with Swing</li> <li>• REAR DOOR: 1 x Double-section Full Perforation with Swing Handle Lock (Hexagon Honey-Comb)</li> </ul> <p>Complete with Cable Management, Lock &amp; Key, Panel Mounts, Base frame with provision for cable entrance, Set of Heavy duty Castor wheels, Set of Levelling stands, 12 Way Power Distribution unit with 13A UK Sockets for 240V and all other accessories required.</p>	No.	2		
<b>FIBER SYSTEM</b>					
B1.02	<p><b>FIBER PATCH PANEL (MAIN CABINET):</b> 24 port Fiber Optic Modular Panel with the option of using SC simplex, LC duplex or MT-RJ adapters</p>	No.	1		
B1.03	<p><b>FIBER PATCH PANEL (MAIN CABINET):</b> 48 port Fiber Optic Modular Panel with the option of using SC simplex, LC duplex or MT-RJ adapters</p>	No.	2		

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
B1.04	<b>FIBER PATCH CORDS (MAIN CABINET):</b> 1 Meter Long Appropriate Fiber Patch cords as Siemon	No.	20		
B1.05	<b>FIBER PATCH PANEL (FLOOR CABINET):</b> 12 port Fiber Optic Modular Panel with the option of using SC simplex, LC duplex or MT-RJ adapters	No.	12		
B1.06	<b>FIBER PATCH CORDS (FLOOR CABINETS):</b> 1 Meter Long Appropriate Fiber Patch cords as Siemon	No.	12		
B1.07	<b>ADAPTORS - Duplex:</b> Duplex LC Fiber Adaptors	No.	192		
B1.08	<b>LC CONNECTORS - Duplex:</b> Duplex LC Fiber Connectors	No.	192		
B1.09	<b>FIBER TERMINATION:</b> Fiber Termination to Patch Panel Per Core	No.	192		
B1.10	<b>CABLE MANAGERS (MAIN CABINET):</b> Siemon 2 U Cable managers for patch cords, horizontal and vertical cables e.t.c to approved cable organizers	No.	90		
B1.11	<b>FIBER VERTICAL CABLING:</b> 4-core fiber optic cable (multimode) 62.5/12.5 micron. This will run in dual to each Floor ICT Cabinet	LM	1770		
B1.12	<b>FIBER CABLING EXTERNAL:</b> External Grade 4-core fiber optic cable (multimode) 62.5/12.5 micron. This will run in dual to Link the Various Buildings	LM	1890		
B1.13	Labelling of all equipment to approval, testing & commissioning	Item	1		
B1.14	<i>Any other additional items, please specify below and attach catalogues. (If none write NIL)</i>				

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
i)		Item	1		
ii)		Item	1		
iii)		Item	1		
iv)		Item	1		
<b>B1.15</b>	<b>Sub-Total c/f to OFFICE BLOCK STRUCTURED CABLING INSTALLATIONS PRICE SUMMARY PAGE</b>				

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
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**B2 DATA & VOICE CABLING**

B2.01	<b>DATA POINTS:</b> Horizontal cabling for data outlet points wired in 4 pair UTP CAT 6A CU cables drawn in existing trunking and radiating in a star topology from the existing Administration cabinet.	No.	630		
B2.02	<b>VOICE POINTS:</b> Horizontal cabling for voice outlet points wired in 4 pair UTP CAT 6A CU cables drawn in existing trunking and radiating in a star topology from the existing Administration cabinet.	No.	630		
B2.03	<b>DUAL GANG SOCKETS:</b> RJ45 Dual Gang socket outlet / faceplate c/w modules	No.	630		
B2.04	<b>DESK PATCH CORDS:</b> Drop cables / flyleads. Factory terminated, 5 meters long	No.	1260		
B2.05	<b>CABINET PATCH CORDS:</b> Cat 6A stranded 4 pair UTP patch cord. Factory terminated, 1 meter long	No.	1260		
B2.06	<b>DATA PATCH PANEL:</b> 48 port Data patch panel	No.	17		
B2.07	<b>DATA PATCH PANEL:</b> 24 port Data patch panel	No.	8		
B2.08	<b>CABLE MANAGER:</b> Provide 2HU cable organizers for patch leads, horizontal cabling etc to approval.	No.	156		

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
B2.09	<p><b>ICT CABINET (Floors):</b> Specifications of the Cabinet to be as:</p> <p><a href="#">27U Rack Floor Standing</a></p> <p>Model As TOTEN (Imported Quality)</p> <p>Width as 800mm</p> <p>Depth as 1000mm</p> <p>Finish with Epoxy Powder Coating (RAL 9004 Black)</p> <p>Frame: Full Vented Top Frame with Front / Rear / Side Cable Entrance</p> <p>TOP TRAY: 6 x 4-inch Top Fan Tray with Guard &amp; Filter (Low Noise)</p> <ul style="list-style-type: none"> <li>• SIDE DOORS: 2 x Lift Off Type with Quick Release Catch &amp; Cam Lock</li> <li>• FRONT DOOR: 1 x Perforated (75%) Arc-Fold with Swing</li> <li>• REAR DOOR: 1 x Double-section Full Perforation with Swing Handle Lock (Hexagon Honey-Comb)</li> </ul> <p>Complete with Cable Management, Lock &amp; Key, Panel Mounts, Base frame with provision for cable entrance, Set of Heavy duty Castor wheels, Set of Levelling stands, 12 Way Power Distribution unit with 13A UK Sockets for 240V and all other accessories required.</p>	No.	12		
B2.10	<p><b>ICT CABINET:</b> 15U cabinet. Fully loaded including cable management tray all cable management accessories, lock and key, glass viewing window, mounting provisions and an extractor fan. Should also include a PDU for power connection inside the Cabinet.</p>	No.	0		
B2.11	<p>Labelling of RJ45 sockets and all equipment to approval, testing &amp; commissioning</p>	Item	1		

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
B2.12	<i>Any other additional items, please specify below and attach catalogues. (If none write NIL)</i>				
i)		Item	1		
ii)		Item	1		
iii)		Item	1		
iv)		Item	1		
B2.13	<b>Sub-Total c/f to OFFICE BLOCK                      STRUCTURED CABLING                      INSTALLATIONS PRICE SUMMARY                      PAGE</b>				



Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
<b>B3 NETWORK SWITCHES</b>					
<i>FLOOR SWITCHES</i>					
B3.01	<b>FLOOR NETWORK SWITCH:</b> CISCO WS-C3650-24PS-S catalyst 10/100 PoE + 2SFP Standard Image Switch with 2GBIC fiber ports and structured multilayer software Image with in line power c/w stacking Kit & stacking cables..The switches to be procured from CISCO channel partners complete with warranty certificate & support. Proof of where the switch was procured will be required. <b>NOTE:</b> All Switches shall have SMARTNET as a Mandatory requirement.	No.	29		
B3.02	<b>MODULES:</b> Cisco Multimode Fiber modules for above switch(es) for the above switches	No.	58		
B3.03	<b>STACK CABLES:</b> Appropriate stack cables for the above Switches	No.	4		
<i>CORE SWITCHES</i>					
B3.04	<b>CORE SWITCH 01:</b> CISCO WS-C3850-24S-S 24 Port Fiber Core Distribution Switch c/w Fiber Ports, Fiber Modules, Redundant Power Supply and stacking Kit with stacking cables. The switches to be procured from CISCO channel partners complete with warranty certificate & support. Proof of where the switch was procured will be required. <b>NOTE:</b> All Switches shall have SMARTNET as a Mandatory requirement.	No.	2		
B3.05	<b>MODULES:</b> Cisco Multimode Fiber modules for above switch(es) for the above switches. Should be 10G	No.	2		
B3.06	<b>STACK CABLES:</b> Appropriate stack cables for the above Core Switches	No.	0		

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
B3.07	<i>Any other additional items, please specify below and attach catalogues. (If none write NIL)</i>				
i)		Item	1		
ii)		Item	1		
iii)		Item	1		
iv)		Item	1		
<b>B3.08</b>	<b>Sub-Total c/f to OFFICE BLOCK STRUCTURED CABLING INSTALLATIONS PRICE SUMMARY PAGE</b>				

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
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**OFFICE BLOCK STRUCTURED CABLING INSTALLATIONS PRICE SUMMARY PAGE**

B1	FIBER DISTRIBUTION & CABLING				
B2	DATA & VOICE CABLING				
B3	NETWORK SWITCHES				
B4	<b>PRELIMINARIES:</b> Preliminaries, contract conditions, general conditions & particular specifications				
B5	<b>CABLE MANAGEMENT:</b> Sum for cable Ties for holding the cables above to the cable trays and cabinets				
B6	<b>POWER SUPPLY:</b> Sum for power supply to the various components that require energisation.				
B7	<b>LIAISON:</b> Sub contractors liason with Other Contractors, Service Providers, Client team, etc for connections and all matters pertaining to above Installations for the project				
B8	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required				
B9	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>				

Item	Description	Unit	QTY	RATE (Kshs.)	COST (Kshs.)
B10	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )				
B11	<b>TESTING &amp; COMMISSIONING:</b> Sum for Installations, Termination, Programming, Testing, Customization, Training (5No.) and Certification of all the above mentioned system to a working and functional condition.				
B12	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion i.e. for maintainance and replacement of consumables such as blown out devices				
	<i>Allow the following provisional sums:</i>				
B12	WIFI Installations				1,170,500
B13	Fiber Connection Sum				500,000
B14	Contingency				3,500,000
<b>B15</b>	<b>SUB-TOTAL c/f to STRUCTURED CABLING PRICE SUMMARY PAGE</b>				

**STRUCTURED CABLING PRICE SUMMARY PAGE**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>COST (KShs)</b>
C1	WAREHOUSE	
C2	OFFICE BLOCK	
C3	<b>Total Exclusive of VAT</b>	
C4	<b>Add: 16% VAT</b>	
C5	<b>TOTAL SUM Inclusive of VAT c/f to STRUCTURED CABLING, IP-PABX TELEPHONY SYSTEMS, UPSes &amp; SECURITY PRICE SUMMARY PAGE</b>	

**IP PABX**

**INSTALLATIONS**

## **IP-PABX & TELEPHONY SYSTEMS**

*The Contractor shall supply labour and supply, deliver, install, fix, connect, test, label and commission the works, clean, complete and working to every detail as described below and in the related specifications and /or on the drawings to the satisfaction of the Consulting Engineers. He will also be expected to attend site meetings / inspections to ascertain all necessary provisions are in place well in advance.*

**NOTE:**

- *PABX Model to be Strictly as CISCO or ALCATEL-LUCENT, PANASONIC, AVAYA*
- *All Copper Installations Cabling in this document shall be Cat 6A solution end to end. Using strictly SIEMON for all installation items Except cable organizers which shall be NEXAN. Alternatives will not be accepted.*
- *All Fiber Installations and Cabling to be as SIEMON*
- *Technical product catalogues and specifications for quoted models to be attached*
- *All IP devices to come with Licences*
- *All Certifications and Warranties must be provided for by the supplier of the cable / Equipment at the end of the project.*

### **D WAREHOUSE**

#### **D1 IP-PABX**

<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rates (KShs)</b>	<b>Costs (KShs)</b>
<b>PHONES</b>					
D1.01	<p><b>Phone 01 (RECEPTION):</b> Operator console IP phone as Panasonic KX-NT546 or equivalent to approval</p> <p><i>To have the following features:</i></p> <ul style="list-style-type: none"> <li>● IP Phone</li> <li>● High-resolution, graphical, grayscale display (Preferable size 6x16 LCD)</li> <li>● 2 Gigabit Ethernet Port (10/100 Base-T)</li> <li>● Power Over Ethernet (POE)</li> <li>● 24 Line and freely programmable function keys</li> <li>● Dedicated fixed keys for more efficient communications</li> <li>● EHS (Electronic Hook Switch)</li> <li>● Bluetooth Compatibility for Headset.</li> <li>● Speaker Phone, handset and headset with full duplex Black Colour</li> </ul>	No.	1		

Item	Description	Unit	Qty	Rates (KShs)	Costs (KShs)
D1.02	<b>CONSOLE:</b> DSS Console with 48 flexible buttons for compatible with above phone	No.	0		
D1.03	<p><b>Phone 02 (BUILDING OFFICES) - Building Management Room, Gate House(s), Security Room, Maintenance Office, etc:</b> IP Phone with LCD and caller ID as Panasonic X-NT511P or equivalent to approval</p> <p><i>To have the following features:</i></p> <ul style="list-style-type: none"> <li>● 1-Line Backlit LCD Display</li> <li>● Standard Dial Pad</li> <li>● 2 Gigabit Ethernet Port (10/100 Base-T)</li> <li>● Power Over Ethernet (POE)</li> <li>● Speaker Phone.</li> <li>● Black Colour</li> </ul>	No.	10		
D1.04	<p><b>Phone 03 (OFFICES) - Workstations:</b> IP Phone with LCD and caller ID as Panasonic X-NT551 or equivalent to approval</p> <p><i>To have the following features:</i></p> <ul style="list-style-type: none"> <li>● 1-Line Backlit LCD Display</li> <li>● Standard Dial Pad</li> <li>● 2 Gigabit Ethernet Port (10/100 Base-T)</li> <li>● Power Over Ethernet (POE)</li> <li>● Speaker Phone.</li> <li>● Black Colour</li> </ul>	No.	112		



Item	Description	Unit	Qty	Rates (KShs)	Costs (KShs)
D1.05	<p><b>Phone 04 (MANAGERS OFFICES) - Workstations:</b> IP Phone with LCD and caller ID as Panasonic KX-NT560 or equivalent to approval</p> <p><i>To have the following features:</i></p> <ul style="list-style-type: none"> <li>● Smart Display IP Handset</li> <li>● Large 4.4 Inch Back-Lit Display</li> <li>● Integrated Bluetooth Technology</li> <li>● Standard Dial Pad</li> <li>● 24 Programmable Keys &amp; 4 Soft Keys</li> <li>● 2 Gigabit Ethernet Port (10/100 Base-T)</li> <li>● Power Over Ethernet (POE)</li> <li>● EHS (Electronic Hook Switch)</li> <li>● Full Duplex Speaker Phone.</li> <li>● Black Colour</li> </ul>	No.	3		
<b>D2 CABLING &amp; CONNECTIONS</b>					
D2.01	<b>CABLING:</b> Cabling & Connections for all PABX interconnections as stated in the items above	Item	1		
<b>D3 ADD ON'S</b>					
D3.01	<b>PRELIMINARIES:</b> Preliminaries, contract conditions, general conditions & particular specifications	Item	1		
D3.02	<b>CABLE MANAGEMENT:</b> Sum for cable Ties for holding the cables above to the cable trays and cabinets	Item	1		
D3.03	<b>POWER SUPPLY:</b> Sum for power supply to the various components that require energisation.	Item	1		

Item	Description	Unit	Qty	Rates (KShs)	Costs (KShs)
D3.04	<b>LIAISON:</b> Sub contractors liason with Other Contractors, Service Providers, Client team, etc for connections and all matters pertaining to above Installations for the project	Item	1		
D3.05	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required	Item	1		
D3.06	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>	Item	1		
D3.07	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )	Item	1		
D3.08	<b>TESTING &amp; COMMISSIONING:</b> Sum for Installations, Termination, Programming, Testing, Customization, Training (5No.) and Certification of all the above mentioned system to a working and functional condition.	Item	1		
D3.09	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion.	Item	1		

Item	Description	Unit	Qty	Rates (KShs)	Costs (KShs)
D3.10	<i>Any other additional items, please specify below and attach catalogues. (If none write NIL)</i>				
i)		Item	1		
ii)		Item	1		
iii)		Item	1		
iv)		Item	1		
v)		Item	1		
D3.11	Contingency				500,000
<b>D3.12</b>	<b>SUB-TOTAL c/f to IP-PABX &amp; TELEPHONY SYSTEMS PRICE SUMMARY PAGE</b>				

**E OFFICE BLOCK**

**E1 IP-PABX**

Item	Description	Unit	Qty	Rates (KShs)	Costs (KShs)
E1.01	<p><b>PABX:</b> Full IP-PABX unit capable of supporting 750 Users and all Licences required</p> <p><i>To Include the following:</i></p> <ul style="list-style-type: none"> <li>● Should Be Rack Mount.</li> <li>● Rack Mount (2U Per Shelf)</li> <li>● Should include E1 (PR-ISDN) Connection</li> <li>● Should be expandable</li> <li>● Should come complete with all Licences and all accessories for full operation.</li> </ul>	No.	1		

**E2 PHONES**

E2.01	<p><b>Phone 01 (RECEPTION):</b> Operator console IP phone as Panasonic KX-NT546 or equivalent to approval</p> <p><i>To have the following features:</i></p> <ul style="list-style-type: none"> <li>● IP Phone</li> <li>● High-resolution, graphical, grayscale display (Preferable size 6x16 LCD)</li> <li>● 2 Gigabit Ethernet Port (10/100 Base-T)</li> <li>● Power Over Ethernet (POE)</li> <li>● 24 Line and freely programmable function keys</li> <li>● Dedicated fixed keys for more efficient communications</li> <li>● EHS (Electronic Hook Switch)</li> <li>● Bluetooth Compatibility for Headset.</li> <li>● Speaker Phone, handset and headset with full duplex Black Colour</li> </ul>	No.	1		
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Item	Description	Unit	Qty	Rates (KShs)	Costs (KShs)
E2.02	<b>CONSOLE:</b> DSS Console with 48 flexible buttons for compatible with above phone	No.	0		
E2.03	<p><b>Phone 02 (BUILDING OFFICES) - Building Management Room, Gate House(s), Security Room, Maintenance Office, etc:</b> IP Phone with LCD and caller ID as Panasonic X-NT511P or equivalent to approval</p> <p><i>To have the following features:</i></p> <ul style="list-style-type: none"> <li>● 1-Line Backlit LCD Display</li> <li>● Standard Dial Pad</li> <li>● 2 Gigabit Ethernet Port (10/100 Base-T)</li> <li>● Power Over Ethernet (POE)</li> <li>● Speaker Phone.</li> <li>● Black Colour</li> </ul>	No.	10		
E2.04	<p><b>Phone 03 (OFFICES) - Workstations:</b> IP Phone with LCD and caller ID as Panasonic X-NT551 or equivalent to approval</p> <p><i>To have the following features:</i></p> <ul style="list-style-type: none"> <li>● 1-Line Backlit LCD Display</li> <li>● Standard Dial Pad</li> <li>● 2 Gigabit Ethernet Port (10/100 Base-T)</li> <li>● Power Over Ethernet (POE)</li> <li>● Speaker Phone.</li> <li>● Black Colour</li> </ul>	No.	630		

Item	Description	Unit	Qty	Rates (KShs)	Costs (KShs)
E2.05	<p><b>Phone 04 (MANAGERS OFFICES) - Workstations:</b> IP Phone with LCD and caller ID as Panasonic KX-NT560 or equivalent to approval</p> <p><i>To have the following features:</i></p> <p>Smart Display IP Handset</p> <ul style="list-style-type: none"> <li>● Large 4.4 Inch Back-Lit Display</li> </ul> <p>Integrated Bluetooth Technology</p> <ul style="list-style-type: none"> <li>● Standard Dial Pad</li> <li>● 24 Programmable Keys &amp; 4 Soft Keys</li> <li>● 2 Gigabit Ethernet Port (10/100 Base-T)</li> <li>● Power Over Ethernet (POE)</li> <li>● EHS (Electronic Hook Switch)</li> <li>● Full Duplex Speaker Phone.</li> <li>● Black Colour</li> </ul>	No.	4		

Item	Description	Unit	Qty	Rates (KShs)	Costs (KShs)
E2.06	<p><b>ICT ROOM PABX DISTRIBUTION CABINET:</b></p> <ul style="list-style-type: none"> <li>• Model As TOTEN (Imported Quality)</li> <li>• 15U Rack Wall Mount</li> <li>• Width as 600mm</li> <li>• Depth as 600mm</li> <li>• Finish with Epoxy Powder Coating (RAL 9004 Black)</li> <li>• Frame: Full Vented Top Frame with Front / Rear / Side Cable Entrance</li> <li>• • SIDE DOORS: 2 x Side Door with Cam Lock</li> <li>• FRONT DOOR: Tempered glass Door with Cam Lock and 180 Degree Swing</li> <li>• Complete with Cable Management, Lock &amp; Key, Panel Mounts, Base frame with provision for cable entrance, Set of Heavy duty Castor wheels, Set of Levelling stands, 6 Way Power Distribution unit with 13A UK Sockets for 240V and all other accessories required.</li> </ul>	No.	0		
<b>E3 CABLING &amp; CONNECTIONS</b>					
E3.01	<b>CABLING:</b> Cabling & Connections for all PABX interconnections as stated in the items above	Item	1		
<b>E4 ADD ON's</b>					
E4.01	<b>PRELIMINARIES:</b> Preliminaries, contract conditions, general conditions & particular specifications	Item	1		
E4.02	<b>CABLE MANAGEMENT:</b> Sum for cable Ties for holding the cables above to the cable trays and cabinets	Item	1		

Item	Description	Unit	Qty	Rates (KShs)	Costs (KShs)
E4.03	<b>POWER SUPPLY:</b> Sum for power supply to the various components that require energisation.	Item	1		
E4.04	<b>LIAISON:</b> Sub contractors liason with Other Contractors, Service Providers, Client team, etc for connections and all matters pertaining to above Installations for the project	Item	1		
E4.05	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required	Item	1		
E4.06	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>	Item	1		
E4.07	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )	Item	1		
E4.08	<b>TESTING &amp; COMMISSIONING:</b> Sum for Installations, Termination, Programming, Testing, Customization, Training (5No.) and Certification of all the above mentioned system to a working and functional condition.	Item	1		
E4.09	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion.	Item	1		



Item	Description	Unit	Qty	Rates (KShs)	Costs (KShs)
E4.10	<i>Any other additional items, please specify below and attach catalogues. (If none write NIL)</i>				
i)		Item	1		
ii)		Item	1		
iii)		Item	1		
iv)		Item	1		
v)		Item	1		
E4.11	Contingency				500,000
<b>E4.12</b>	<b>SUB-TOTAL c/f to IP-PABX &amp; TELEPHONY SYSTEMS PRICE SUMMARY PAGE</b>				

**IP-PABX & TELEPHONY SYSTEMS PRICE SUMMARY PAGE**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>COST (KShs)</b>
F1	WAREHOUSE	
F2	OFFICE BLOCK	
<b>F3</b>	<b>Total Exclusive of VAT</b>	
F4	<b>Add: 16% VAT</b>	
<b>F5</b>	<b>TOTAL SUM Inclusive of VAT c/f to STRUCTURED CABLING, IP-PABX TELEPHONY SYSTEMS, UPSes &amp; SECURITY PRICE SUMMARY PAGE</b>	

**UPS**

**INSTALLATIONS**

## UPS INSTALLATIONS ( SERVER & ICT ROOMS)

The Contractor shall supply labour and supply, deliver, install, fix, connect, test, label and commission the works, clean, complete and working to every detail as described below and in the related specifications and /or on the drawings to the satisfaction of the Consulting Engineers. He will also be expected to attend site meetings / inspections to ascertain all necessary provisions are in place well in advance.

**NOTE:**

- Model to be as GAMATRONICS, APC, EATON, MGE or DELTA
- Safety Signage Legible from 3m away as a minimum shall be installed at all areas where deemed possible to avoid injury or damage to property and live. This should be quoted for under Signage in the document.
- Technical product catalogues and specifications for quoted models to be attached
- Specifications given are On site NOT at sea level or elsewhere
- **NOTE: Kindly Note that all Bidders Will be required to give the Authorization Letter from the Local Authorized agent for UPS. This will be Mandatory in the Evaluation.**

### **G WAREHOUSE SERVER & ICT SYSTEM UPSes**

#### **G1 WAREHOUSE SERVER ROOM UPS**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>RATE (Kshs)</b>	<b>COST (Kshs)</b>
G1.01	<p><b>UPS UNIT:</b> UPS Unit c/w the features outlined in the particular specifications herein. The main specifications of the UPS Unit are:</p> <ul style="list-style-type: none"> <li>● <b>15KVA Rated True Online Double Conversion UPS</b></li> <li>● Three phase IN / Three phase OUT</li> <li>● Inbuilt Battery system with Backup time of 30Minutes @ 100% Load</li> <li>● C/w all software and hardware necessary for operation</li> <li>● Must be BMS compatible &amp; ready with BACNET IP protocol</li> <li>● BACNET IP compatible Gateway to be supplied in event of different protocol.</li> </ul>	No.	1		

ITEM	DESCRIPTION	UNIT	QTY	RATE (Kshs)	COST (Kshs)
G1.02	<b>MANUAL BYPASS (EXTERNAL):</b> External Manual bypass for the above UPS (Should be from the same supplier as the UPS).	No.	1		
G1.03	<b>STS:</b> Static Transfer Switch for the Above UPSes (3-Phase)	No.	0		
<i>Any other additional items, please specify below and attach catalogues. (If none write NIL)</i>					
i)		Item	1		
ii)		Item	1		
iii)		Item	1		
iv)		Item	1		
<b>G1.04</b>	<b>Sub-Total c/f to WAREHOUSE UPSes PRICE COLLECTION PAGE</b>				

ITEM	DESCRIPTION	UNIT	QTY	RATE (Kshs)	COST (Kshs)
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**G2 WAREHOUSE ICT ROOMS UPSes**

G1.01	<p><b>UPS UNIT:</b> UPS Unit c/w the features outlined in the particular specifications herein. The main specifications of the UPS Unit are:</p> <ul style="list-style-type: none"> <li>• <b>5KVA Rated True Online Double Conversion UPS</b></li> <li>• Rack Mount UPS</li> <li>• Single phase IN / Single phase OUT</li> <li>• Inbuilt Battery system with Backup time of 30Minutes @ 100% Load</li> <li>• Should contain Digital display</li> <li>• C/w all software and hardware necessary for operation</li> <li>• Must be BMS compatible &amp; ready with BACNET IP protocol</li> <li>• BACNET IP compatible Gateway to be supplied in event of different protocol.</li> </ul>	No.	2		
G1.02	<p><b>MANUAL BYPASS (EXTERNAL):</b> External Manual bypass for the above UPS (Should be from the same supplier as the UPS).</p>	No.	2		

Any other additional items, please specify below and attach catalogues. (If none write NIL)

i)		Item	1		
ii)		Item	1		
iii)		Item	1		
iv)		Item	1		
<b>G1.03</b>	<p><b>Sub-Total c/f to WAREHOUSE UPSes</b> <b>PRICE COLLECTION PAGE</b></p>				

ITEM	DESCRIPTION	UNIT	QTY	RATE (Kshs)	COST (Kshs)
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**WAREHOUSE UPSes PRICE COLLECTION PAGE**

G1	WAREHOUSE SERVER ROOM UPS				
G2	WAREHOUSE ICT ROOMS UPSes				
G3	<b>ELECTRICAL WORKS:</b> Allow Sum for associated electrical termination works for UPS(es) above. This includes associated cabling in between the UPS and the Battery Banks.	Item	1		
G4	<b>CABLE MANAGEMENT:</b> Sum for cable Ties for holding the cables to the cable trays and cabinets	Item	1		
G5	<b>LIAISON:</b> Sub contractors liason with Other contractors supplying the equipment, Client team, etc for connections and all matters pertaining to BMS Installations for the project	Item	1		
G6	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. <b>{NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer}</b>	Item	1		
G7	<b>TESTING &amp; COMMISSIONING:</b> Sum for Installations, Termination, Programming, Testing, Customization, Training (5No.) and Certification of all the above mentioned system to a working and functional condition.	Item	1		

ITEM	DESCRIPTION	UNIT	QTY	RATE (Kshs)	COST (Kshs)
G8	<b>TRAINING:</b> Allow sum for training client personel ( At least 5No. Personel ) for a Period of 1 week Minimum	Item	1		
G9	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion.	Item	1		
G10	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required. Main Labels should be a Minimum of 200mm by 200mm. All labels should be permanet engraved labels (trafolyte material) including the cable labelling.	Item	1		
G11	Preliminaries & General Conditions	Item	1		
G12	Contingency				250,000
<b>G13</b>	<b>SUB-TOTAL c/f to UPSes PRICE SUMMARY PAGE</b>				



**H OFFICE BLOCK SERVER & ICT SYSTEM UPS**

ITEM	DESCRIPTION	UNIT	QTY	RATE (Kshs)	COST (Kshs)
H1.01	<p><b>UPS UNIT:</b> UPS Unit c/w the features outlined in the particular specifications herein. The main specifications of the UPS Unit are:</p> <ul style="list-style-type: none"> <li>• <b>40KVA Rated True Online Double Conversion UPS</b></li> <li>• Three phase IN / Three phase OUT</li> <li>• Inbuilt Battery system with Backup time of 30Minutes @ 100% Load</li> <li>• C/w all software and hardware necessary for operation</li> <li>• Must be BMS compatible &amp; ready with BACNET IP protocol</li> <li>• BACNET IP compatible Gateway to be supplied in event of different protocol.</li> </ul>	No.	1		
H1.02	<p><b>MANUAL BYPASS (EXTERNAL):</b> External Manual bypass for the above UPS (Should be from the same supplier as the UPS).</p>	No.	1		
H1.03	<p><b>STS:</b> Static Transfer Switch for the Above UPSes (3-Phase)</p>	No.	0		
<p><i>Any other additional items, please specify below and attach catalogues. (If none write NIL)</i></p>					
i)		Item	1		
ii)		Item	1		
iii)		Item	1		
iv)		Item	1		
<b>H1.04</b>	<p><b>Sub-Total c/f to OFFICE BLOCK UPSes PRICE COLLECTION PAGE</b></p>				

**OFFICE BLOCK UPSes PRICE COLLECTION PAGE**

ITEM	DESCRIPTION			COST (Kshs.)	
H1	OFFICE BLOCK SERVER & ICT SYSTEM UPS				
H2	<b>ELECTRICAL WORKS:</b> Allow Sum for associated electrical termination works for UPS(es) above. This includes associated cabling in between the UPS and the Battery Banks.	Item	1		
H3	<b>CABLE MANAGEMENT:</b> Sum for cable Ties for holding the cables to the cable trays and cabinets	Item	1		
H4	<b>LIAISON:</b> Sub contractors liason with Other contractors supplying the equipment, Client team, etc for connections and all matters pertaining to BMS Installations for the project	Item	1		
H5	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. <b>{NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer}</b>	Item	1		
H6	<b>TESTING &amp; COMMISSIONING:</b> Sum for Installations, Termination, Programming, Testing, Customization, Training (5No.) and Certification of all the above mentioned system to a working and functional condition.	Item	1		
H7	<b>TRAINING:</b> Allow sum for training client personel ( At least 5No. Personel ) for a Period of 1 week Minimum	Item	1		

ITEM	DESCRIPTION			COST (Kshs.)	
H8	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion.	Item	1		
H9	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required. Main Labels should be a Minimum of 200mm by 200mm. All labels should be permanent engraved labels (trafollyte material) including the cable labelling.	Item	1		
H10	Preliminaries & General Conditions	Item	1		
H11	Contingency				420,000
H12	<b>SUB-TOTAL c/f to UPSes PRICE SUMMARY PAGE</b>				

**UPSes PRICE SUMMARY PAGE**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>COST (Kshs.)</b>
I1	WAREHOUSE SERVER & ICT SYSTEM UPSes	
I2	OFFICE BLOCK SERVER & ICT SYSTEM UPS	
<b>I3</b>	<b>Total Inclusive of VAT</b>	
I4	<b>Add: 16% VAT</b>	
<b>I5</b>	<b>TOTAL SUM Inclusive of VAT c/f to STRUCTURED CABLING, IP-PABX TELEPHONY SYSTEMS, UPSes &amp; SECURITY PRICE SUMMARY PAGE</b>	

**SECURITY**

**INSTALLATIONS**

**CCTV**

**INSTALLATIONS**

## **SECURITY INSTALLATION SYSTEMS**

### **CCTV INSTALLATIONS**

*The Contractor shall supply labour and supply, deliver, install, fix, connect, test, label and commission the works, clean, complete and working to every detail as described below and in the related specifications and /or on the drawings to the satisfaction of the Consulting Engineers.*

*All cameras to be IP Cameras & to have power over ethernet (POE) capability, 12VDC, 24VAC Power options.*

*All UTP Cables to be as Siemon end to end*

*All Camera Models To be as Arconet, Bosch, Axis or Equivalent to Approval*

*Technical product catalogues and specifications for quoted models to be attached*

#### **J1 WAREHOUSE**

<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rates (Kshs.)</b>	<b>Costs (Kshs)</b>
<b><i>CAMERAS &amp; ACCESSORIES</i></b>					
J1.01	<b>CAMERA MODEL 01: Internal Indoor IP Dome Camera (80 Degree View):</b> Internal IP Dome camera with 80° view angle c/w all other accessories as described in the particular specifications of this document	No.	134		
J1.02	<b>CAMERA MODEL 02: Panoramic IP Dome Camera (180 Degree View):</b> Panoramic IP Dome camera with 180° view angle c/w all other accessories as described in the particular specifications of this document	No.	19		
J1.03	<b>CAMERA MODEL 03: INDOOR Panoramic IP Dome Camera (360 Degree View):</b> Panoramic IP Dome camera with 360° view angle c/w all other accessories as described in the particular specifications of this document	No.	1		

Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
J1.04	<b>CAMERA MODEL 04: OUTDOOR Panoramic IP Dome Camera (360 Degree View):</b> Panoramic IP Dome camera with 360° view angle c/w all other accessories as described in the particular specifications of this document	No.	1		
J1.05	<b>CAMERA MODEL 05: External Outdoor IP Camera (80 Degree View):</b> External Outdoor IP Camera with 80° view angle c/w all other accessories as described in the particular specifications of this document	No.	9		
J1.06	<b>CAMERA MODEL 06: Outdoor PTZ (Pan, Tilt &amp; Zoom) Camera (360 Degree View):</b> Outdoor PTZ (Pan, Tilt & Zoom) Camera with 360 Degree View angle c/w all other accessories as described in the particular specifications of this document	No.	1		
J1.07	<b>CAMERA POLES:</b> 6,000mm high above ground Camera poles for Outdoor cameras c/w all other accessories as described in the particular specifications of this document	No.	5		
J1.08	<b>CABLING:</b> Horizontal cabling for Cameras wired in 4 pair UTP CAT 6A CU cables drawn in Conduitwork / trunking installed by others and radiating in a star topology from the Switches in the Administration cabinet to the individual cameras & Including Associated accessories including factory terminated RJ 45 sockets and modules to enable a full operation of the installations.	No.	57		
J1.09	<b>CAMERA LICENCES:</b> Camera Licences for all the above IP based Cameras. Please note that the Licences should NOT be annual renewable licenses	No.	57		



Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
<b>VIEWING &amp; RECORDING</b>					
J1.10	<p><b>NETWORK VIDEO RECORDER (NVR):</b> Network Video Recorder c/w all other accessories as described in the particular specifications of this document. NOTE: Storage Capacity for this NVR Should be <b>90 Days</b> for all the Cameras Mentioned above. ( Calculations of the same to be attached in submission. )</p>	No.	8		
J1.11	<p><b>MONITOR(S):</b> Wall Mounted monitors c/w mounting brackets, Connection Cables &amp; all other accessories as described in the particular specifications of this document.</p>	No.	8		
J1.12	<p><b>JOYSTICK CONTROLLER MODULE:</b> Joystick Controller Module c/w connection cables &amp; all other accessories as described in the particular specifications of this document. <b>NOTE:</b> Joystick module should be able to control any of the workstations without interchange of the cables.</p>	No.	1		
J1.13	<p><b>WORKSTATION &amp; SOFTWARE:</b> Workstation c/w HDD, Accessories, software &amp; all other accessories as described in the particular specifications of this document.</p>	No.	1		

Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
<b>ADMINISTRATION</b>					
J1.14	<b>ADMINISTRATION EQUIPMENT CABINET (FLOOR STANDING) - SERVER ROOM:</b> 42U Administration Equipment Cabinet for housing all the accessories c/w all other accessories as described in the particular specifications of this document. <b>Model As TOTEN</b>	No.	1		
J1.15	<b>ADMINISTRATION EQUIPMENT CABINET (WALL MOUNTED) - SECURITY ROOM :</b> 15U Administration Equipment Cabinet for housing all the accessories c/w all other accessories as described in the particular specifications of this document. <b>Model As TOTEN</b>	No.	2		
J1.16	<b>ADMINISTRATION EQUIPMENT CABINET (WALL MOUNTED) - DUCTS :</b> 9U Administration Equipment Cabinet for housing all the accessories c/w all other accessories as described in the particular specifications of this document. <b>Model As TOTEN</b>	No.	5		
J1.17	<b>PATCH PANEL:</b> 24 port Data patch panel as SIEMON®	No.	12		
J1.18	<b>CABLE MANAGER:</b> Provide 2HU cable organizers for patch leads, horizontal cabling etc to approval.	No.	0		
J1.19	<b>PATCHCORDS:</b> 1 Meter CAT 6A UTP Factory Terminated patch cords for use in the switches	No.	57		

Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
<b>SWITCHES</b>					
J1.20	<p><b>NETWORK SWITCH:</b> CISCO WS-2960-24PS-S catalyst 10/100 PoE + 2SFP Standard Image Switch with 2GBIC fiber ports and structured multilayer software Image with in-line power c/w stacking Kit &amp; stacking cables..The switches to be procured from CISCO channel partners complete with warranty certificate &amp; support. Proof of where the switch was procured will be required.</p> <p><b>NOTE:</b> All Switches shall have SMARTNET as a Mandatory requirement. Proof of warranty will be required incase of supply.</p>	No.	4		
J1.21	<p><b>MODULES:</b> Cisco Multimode Fiber modules for above switch(es) for the above switches</p>	No.	8		
<b>FIBER CABLING &amp; ACCESSORIES</b>					
J1.22	<p><b>FIBER PATCH PANEL:</b> 12 port Fiber Optic Modular Panel with the option of using SC, LC or MT-RJ adapters</p>	No.	9		
J1.23	<p><b>ADAPTORS (Simplex):</b> Simplex LC Fiber Adaptors</p>	No.	40		
J1.24	<p><b>LC CONNECTORS (Simplex):</b> Simplex LC Fiber Connectors</p>	No.	40		
J1.25	<p><b>FIBER TERMINATION:</b> Fiber Polishing, Termination and Installation of each fiber core to all the accessories and to the to Patch Panel</p>	No.	40		
J1.26	<p><b>FIBER VERTICAL CABLING:</b> 4-core fiber optic cable (multimode) 62.5/12.5 micron. This runs in dual to each Floor ICT Cabinet located in the ICT Duct</p>	LM	390		

Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
<b>OTHER ACCESSORIES</b>					
J1.27	<b>ACCESSORIES:</b> Mounting, fixing, etc accessories such as RJ 45 connectors, fly / interconnect cables, terminations, labling etc.	Item	1		
J1.28	<b>POWER SUPPLY:</b> Power supply to the various components that need to be powered within the entire CCTV installation and any necessary earthing.	Item	1		
J1.29	<b>SIGNAGE:</b> Allow sum for putting Up signage as required by the International safety standards	Item	1		
J1.30	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required	Item	1		
J1.31	<b>ADDITIONAL ACCESSORIES:</b> Any other necessary item. please specify on a separate sheet showing the various items and their individual costs. Only give lumpsum here (If non write NIL)	Item	1		
J1.32	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>	Item	1		
J1.33	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )	Item	1		

Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
J1.34	<b>TESTING &amp; COMMISSIONING:</b> Sum for Testing and commissioning of the entire installations set complete with all accessories, interconnections, controls, BMS link & activation and the necessary programing.	Item	1		
J1.35	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion i.e. for maintainance and replacement of consumables such as blown out devices	Item	1		
J1.36	Preliminaries, contract conditions, general conditions & particular specifications	Item	1		
J1.37	Contingency				1,200,000
<b>J1.38</b>	<b>Total c/f CCTV PRICE SUMMARY PAGE</b>				

**J2 OFFICE BLOCK**

<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rates (Kshs.)</b>	<b>Costs (Kshs)</b>
<b><i>CAMERAS &amp; ACCESSORIES</i></b>					
J2.01	<b>CAMERA MODEL 01: Internal Indoor IP Dome Camera (80 Degree View):</b> Internal IP Dome camera with 80° view angle c/w all other accessories as described in the particular specifications of this document	No.	89		
J2.02	<b>CAMERA MODEL 02: Panoramic IP Dome Camera (180 Degree View):</b> Panoramic IP Dome camera with 180° view angle c/w all other accessories as described in the particular specifications of this document	No.	15		
J2.03	<b>CAMERA MODEL 03: INDOOR Panoramic IP Dome Camera (360 Degree View):</b> Panoramic IP Dome camera with 360° view angle c/w all other accessories as described in the particular specifications of this document	No.	1		
J2.04	<b>CAMERA MODEL 04: OUTDOOR Panoramic IP Dome Camera (360 Degree View):</b> Panoramic IP Dome camera with 360° view angle c/w all other accessories as described in the particular specifications of this document	No.	1		
J2.05	<b>CAMERA MODEL 05: External Outdoor IP Camera (80 Degree View):</b> External Outdoor IP Camera with 80° view angle c/w all other accessories as described in the particular specifications of this document	No.	8		

Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
J2.06	<b>CAMERA MODEL 06: Outdoor PTZ (Pan, Tilt &amp; Zoom) Camera (360 Degree View):</b> Outdoor PTZ (Pan, Tilt & Zoom) Camera with 360 Degree View angle c/w all other accessories as described in the particular specifications of this document	No.	1		
J2.07	<b>CAMERA POLES:</b> 6,000mm high above ground Camera poles for Outdoor cameras c/w all other accessories as described in the particular specifications of this document	No.	1		
J2.08	<b>CABLING:</b> Horizontal cabling for Cameras wired in 4 pair UTP CAT 6A CU cables drawn in Conduitwork / trunking installed by others and radiating in a star topology from the Switches in the Administration cabinet to the individual cameras & Including Associated accessories including factory terminated RJ 45 sockets and modules to enable a full operation of the installations.	No.	116		
J2.09	<b>CAMERA LICENCES:</b> Camera Licences for all the above IP based Cameras. Please note that the Licences should NOT be annual renewable licenses	No.	116		

Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
<b>VIEWING &amp; RECORDING</b>					
J2.10	<b>NETWORK VIDEO RECORDER (NVR):</b> Network Video Recorder c/w all other accessories as described in the particular specifications of this document. NOTE: Storage Capacity for this NVR Should be <b>90 Days</b> for all the Cameras Mentioned above. ( Calculations of the same to be attached in submission. )	No.	8		
J2.11	<b>MONITOR(S):</b> Wall Mounted monitors c/w mounting brackets, Connection Cables & all other accessories as described in the particular specifications of this document.	No.	7		
J2.12	<b>JOYSTICK CONTROLLER MODULE:</b> Joystick Controller Module c/w connection cables & all other accessories as described in the particular specifications of this document. <b>NOTE:</b> Joystick module should be able to control any of the workstations without interchange of the cables.	No.	1		
J2.13	<b>WORKSTATION &amp; SOFTWARE:</b> Workstation c/w HDD, Accessories, software & all other accessories as described in the particular specifications of this document.	No.	1		



Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
<b>ADMINISTRATION</b>					
J2.14	<b>ADMINISTRATION EQUIPMENT CABINET (FLOOR STANDING) - SERVER ROOM:</b> 42U Administration Equipment Cabinet for housing all the accessories c/w all other accessories as described in the particular specifications of this document. <b>Model As TOTEN</b>	No.	1		
J2.15	<b>ADMINISTRATION EQUIPMENT CABINET (WALL MOUNTED) - SECURITY ROOM :</b> 15U Administration Equipment Cabinet for housing all the accessories c/w all other accessories as described in the particular specifications of this document. <b>Model As TOTEN</b>	No.	7		
J2.16	<b>ADMINISTRATION EQUIPMENT CABINET (WALL MOUNTED) - DUCTS :</b> 9U Administration Equipment Cabinet for housing all the accessories c/w all other accessories as described in the particular specifications of this document. <b>Model As TOTEN</b>	No.	1		
J2.17	<b>PATCH PANEL:</b> 24 port Data patch panel as SIEMON®	No.	7		
J2.18	<b>PATCH PANEL:</b> 48 port Data patch panel as SIEMON®	No.	3		
J2.19	<b>CABLE MANAGER:</b> Provide 2HU cable organizers for patch leads, horizontal cabling etc to approval.	No.	25		
J2.20	<b>PATCHCORDS:</b> 1 Meter CAT 6A UTP Factory Terminated patch cords for use in the switches	No.	232		

Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
<b>SWITCHES</b>					
J2.21	<b>NETWORK SWITCH:</b> CISCO WS-2960-24PS-S catalyst 10/100 PoE + 2SFP Standard Image Switch with 2GBIC fiber ports and structured multilayer software Image with in-line power c/w stacking Kit & stacking cables..The switches to be procured from CISCO channel partners complete with warranty certificate & support. Proof of where the switch was procured will be required. <b>NOTE:</b> All Switches shall have SMARTNET as a Mandatory requirement. Proof of warranty will be required incase of supply.	No.	8		
J2.22	<b>MODULES:</b> Cisco Multimode Fiber modules for above switch(es) for the above switches	No.	16		
<b>FIBER CABLING &amp; ACCESSORIES</b>					
J2.23	<b>FIBER PATCH PANEL:</b> 12 port Fiber Optic Modular Panel with the option of using SC, LC or MT-RJ adapters	No.	8		
J2.24	<b>ADAPTORS (Simplex):</b> Simplex LC Fiber Adaptors	No.	64		
J2.25	<b>LC CONNECTORS (Simplex):</b> Simplex LC Fiber Connectors	No.	64		
J2.26	<b>FIBER TERMINATION:</b> Fiber Polishing, Termination and Installation of each fiber core to all the accessories and to the to Patch Panel	No.	64		
J2.27	<b>FIBER VERTICAL CABLING:</b> 4-core fiber optic cable (multimode) 62.5/12.5 micron. This runs in dual to each Floor ICT Cabinet located in the ICT Duct	LM	1030		

Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
<b>OTHER ACCESSORIES</b>					
J2.28	<b>ACCESSORIES:</b> Mounting, fixing, etc accessories such as RJ 45 connectors, fly / interconnect cables, terminations, labling etc.	Item	1		
J2.29	<b>POWER SUPPLY:</b> Power supply to the various components that need to be powered within the entire CCTV installation and any necessary earthing.	Item	1		
J2.30	<b>SIGNAGE:</b> Allow sum for putting Up signage as required by the International safety standards	Item	1		
J2.31	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required	Item	1		
J2.32	<b>ADDITIONAL ACCESSORIES:</b> Any other necessary item. please specify on a separate sheet showing the various items and their individual costs. Only give lumpsum here (If non write NIL)	Item	1		
J2.33	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>	Item	1		
J2.34	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )	Item	1		

Item	Description	Unit	Qty	Rates (Kshs.)	Costs (Kshs)
J2.35	<b>TESTING &amp; COMMISSIONING:</b> Sum for Testing and commissioning of the entire installations set complete with all accessories, interconnections, controls, BMS link & activation and the necessary programing.	Item	1		
J2.36	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion i.e. for maintainance and replacement of consumables such as blown out devices	Item	1		
J2.37	Preliminaries, contract conditions, general conditions & particular specifications	Item	1		
J2.38	Contingency				1,720,000
<b>J2.39</b>	<b>Total c/f CCTV PRICE SUMMARY PAGE</b>				

**CCTV PRICE SUMMARY PAGE**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>COST (KShs)</b>
J1	WAREHOUSE	
J2	OFFICE BLOCK	
<b>J3</b>	<b>Total Exclusive of VAT</b>	
J4	<b>Add: 16% VAT</b>	
<b>J5</b>	<b>Total Inclusive of VAT c/f SECURITY SYSTEMS PRICE SUMMARY PAGE</b>	

**ACCESS  
CONTROL  
INSTALLATIONS**

## ACCESS CONTROL INSTALLATIONS

*The Contractor shall supply labour and supply, deliver, install, fix, connect, test, label and commission the works, clean, complete and working to every detail as described below and in the related specifications and /or on the drawings to the satisfaction of the Consulting Engineers.*

*Access Control shall be IP Based.*

*All UTP Cables to be as Siemon end to end*

*Access Control Models shall be as HID, SALTO, ANVIZ or Equivalent to approval*

*Technical product catalogues and specifications for quoted models to be attached*

**Note:** *The Model quoted is only a guide. Other Equivalents can be suggested subject to Engineers approval.*

### **K1 WAREHOUSE**

<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>RATE (Kshs)</b>	<b>COST (Kshs)</b>
K1.01	<b>CARD READER CONTROLLER:</b> Card Reader Controller (Panel) to accommodate all the access controlled doors c/w all other accessories as described in the particular specifications of this document. The panel should be BMS BACNet compatible and should be supplied with the BACNet interface port fitted.	No.	2		
K1.02	<b>BIOMETRIC FINGERPRINT READER WITH PIN PAD &amp; CARD READER:</b> Biometric Fingerprint reader with Pinpad & Card Reader c/w all other accessories as described in the particular specifications of this document. NOTE: This should be programable to different modes of operation as user demands.	No.	9		
K1.03	<b>CARD READER WITH PINPAD (CR-KP):</b> Proximity card reader with Pinpad c/w all other accessories as described in the particular specifications of this document	No.	10		
K1.04	<b>CARD READER (CR):</b> Proximity card readers c/w all other accessories as described in the particular specifications of this document	No.	25		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
K1.05	<b>REQUEST TO EXIT (RTE) SWITCH:</b> Request to Exit (RTE) Switch c/w all other accessories as described in the particular specifications of this document	No.	0		
K1.06	<b>EMERGENCY BREAKGLASS UNIT (BG):</b> Emergency Break Glass Unit for all access controlled rooms c/w all other accessories as described in the particular specifications of this document	No.	22		
K1.07	<b>DOOR RELEASE KEYSWITCH (KS):</b> Door Release Keyswitch c/w all other accessories as described in the particular specifications of this document	No.	7		
K1.08	<b>ELECTROMAGNETIC LOCK -ML (MAGLOCK) - SINGLE:</b> Electromagnetic lock (Maglock) c/w mounting brackets and all other accessories as described in the particular specifications of this document	No.	18		
K1.09	<b>ELECTROMAGNETIC LOCK -ML (MAGLOCK) - DUAL:</b> Electromagnetic lock (Maglock) c/w mounting brackets and all other accessories as described in the particular specifications of this document	No.	4		
K1.10	<b>MAGNETIC DOOR CONTACT - MDC (SLIMLINE):</b> Magnetic Door contact (Slimline) for the fire exit doors c/w all other accessories as described in the particular specifications of this document	No.	16		
K1.11	<b>PROXIMITY ACCESS CARD (ORDINARY):</b> Proximity Access Cards c/w all other accessories as described in the particular specifications of this document	No.	100		



Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
K1.12	<b>POWER SUPPLY:</b> Power supply for all the above equipment that require power.	Item	1		
K1.13	<b>ADMINISTRATION EQUIPMENT CABINET (WALL MOUNTED) - DUCTS:</b> 9U Administration Equipment Cabinet for housing all the accessories c/w all other accessories as described in the particular specifications of this document. <b>Model As TOTEN</b>	No.	3		
K1.14	<b>CABLING:</b> Horizontal cabling for Access Contol devices wired in 4 pair UTP CAT 6 CU cables drawn in Conduitwork / trunking installed by others and radiating in a star topology from the to the individual devices & Including Associated accessories including factory terminated RJ 45 sockets and modules to enable a full operation of the installations.	No.	113		
K1.15	<b>WORKSTATION &amp; SOFTWARE:</b> Workstation c/w HDD, Accessories, software & all other accessories as described in the particular specifications of this document.	No.	0		
K1.16	<b>FLOOR NETWORK SWITCH: CISCO SG300 - 28 Port 10/100 PoE + 2SFP Standard Image Switch with 2GBIC fiber ports and structured multilayer software Image with in-line power c/w stacking Kit &amp; stacking cables..</b> The switches to be procured from CISCO channel partners complete with warranty certificate & support. Proof of where the switch was procured will be required. <b>NOTE:</b> All Switches shall have SMARTNET as a Mandatory requirement. Proof of warranty will be required incase of supply.	No.	1		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
K1.17	<b>MODULES:</b> Cisco Multimode Fiber modules for above switch(es) for the above switches	No.	2		
K1.18	<b>FIBER CABLING:</b> Allow sum for interlinking the Switches Above using Fiber cables c/w/ all accessories.	Item	1		
K1.19	<b>INTEGRATION:</b> Allow sum for interlinking the Access control system to other security alarm panel installed by others.	Item	1		
K1.20	<b>SIGNAGE:</b> Allow sum for putting Up signage as required by the International safety standards		1		
K1.21	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required		1		
K1.22	<b>ADDITIONAL ACCESSORIES:</b> Any other necessary item. please specify on a separate sheet showing the various items and their individual costs. Only give lumpsum here (If non write NIL)	Item	1		
K1.23	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>	Item	1		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
K1.24	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )	Item	1		
K1.25	<b>TESTING &amp; COMMISSIONING:</b> Sum for Testing and commissioning of the entire installations set complete with all accessories, interconnections, controls, BMS link & activation and the necessary programing.	Item	1		
K1.26	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion.	Item	1		
K1.27	Preliminaries, contract conditions, general conditions & particular specifications	Item	1		
K1.28	Contingency	Item	1		450,000
<b>K1.29</b>	<b>Total c/f ACCESS CONTROL PRICE SUMMARY PAGE</b>				

**K2 OFFICE BLOCK**

<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>RATE (Kshs)</b>	<b>COST (Kshs)</b>
K2.01	<b>CARD READER CONTROLLER:</b> Card Reader Controller (Panel) to accommodate all the access controlled doors c/w all other accessories as described in the particular specifications of this document. The panel should be BMS BACNet compatible and should be supplied with the BACNet interface port fitted.	No.	7		
K2.02	<b>BIOMETRIC FINGERPRINT READER WITH PIN PAD &amp; CARD READER:</b> Biometric Fingerprint reader with Pinpad & Card Reader c/w all other accessories as described in the particular specifications of this document. NOTE: This should be programable to different modes of operation as user demands.	No.	2		
K2.03	<b>CARD READER WITH PINPAD (CR-KP):</b> Proximity card reader with Pinpad c/w all other accessories as described in the particular specifications of this document	No.	18		
K2.04	<b>CARD READER (CR):</b> Proximity card readers c/w all other accessories as described in the particular specifications of this document	No.	92		
K2.05	<b>REQUEST TO EXIT (RTE) SWITCH:</b> Request to Exit (RTE) Switch c/w all other accessories as described in the particular specifications of this document	No.	13		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
K2.06	<b>EMERGENCY BREAKGLASS UNIT (BG):</b> Emergency Break Glass Unit for all access controlled rooms c/w all other accessories as described in the particular specifications of this document	No.	58		
K2.07	<b>DOOR RELEASE KEYSWITCH (KS):</b> Door Release Keyswitch c/w all other accessories as described in the particular specifications of this document	No.	35		
K2.08	<b>ELECTROMAGNETIC LOCK -ML (MAGLOCK) - SINGLE:</b> Electromagnetic lock (Maglock) c/w mounting brackets and all other accessories as described in the particular specifications of this document	No.	58		
K2.09	<b>ELECTROMAGNETIC LOCK -ML (MAGLOCK) - DUAL:</b> Electromagnetic lock (Maglock) c/w mounting brackets and all other accessories as described in the particular specifications of this document	No.	0		
K2.10	<b>MAGNETIC DOOR CONTACT - MDC (SLIMLINE):</b> Magnetic Door contact (Slimline) for the fire exit doors c/w all other accessories as described in the particular specifications of this document	No.	21		
K2.11	<b>CABLING:</b> Horizontal cabling for Access Control devices wired in 4 pair UTP CAT 6 CU cables drawn in Conduitwork / trunking installed by others and radiating in a star topology from the to the individual devices & Including Associated accessories including factory terminated RJ 45 sockets and modules to enable a full operation of the installations.	No.	304		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
K2.12	<b>PROXIMITY ACCESS CARD (ORDINARY):</b> Proximity Access Cards c/w all other accessories as described in the particular specifications of this document	No.	1000		
K2.13	<b>POWER SUPPLY:</b> Power supply for all the above equipment that require power.	Item	1		
K2.14	<b>ADMINISTRATION EQUIPMENT CABINET (WALL MOUNTED) - DUCTS:</b> 9U Administration Equipment Cabinet for housing all the accessories c/w all other accessories as described in the particular specifications of this document. <b>Model As TOTEN</b>	No.	7		
K2.15	<b>WORKSTATION &amp; SOFTWARE:</b> Workstation c/w HDD, Accessories, software & all other accessories as described in the particular specifications of this document.	No.	1		
K2.16	<b>FLOOR NETWORK SWITCH: CISCO SG300 - 28 Port 10/100 PoE + 2SFP Standard Image Switch with 2GBIC fiber ports and structured multilayer software Image with in-line power c/w stacking Kit &amp; stacking cables..</b> The switches to be procured from CISCO channel partners complete with warranty certificate & support. Proof of where the switch was procured will be required. <b>NOTE:</b> All Switches shall have SMARTNET as a Mandatory requirement. Proof of warranty will be required incase of supply.	No.	7		
K2.17	<b>MODULES:</b> Cisco Multimode Fiber modules for above switch(es) for the above switches. Should be 10G	No.	14		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
K2.18	<p><b>CORE SWITCH 01:</b> CISCO WS-C3850-12S-S 12 Port Fiber Core Distribution Switch c/w Fiber Ports, Fiber Modules, Redundant Power Supply and stacking Kit with stacking cables. The switches to be procured from CISCO channel partners complete with warranty certificate &amp; support. Proof of where the switch was procured will be required.</p> <p><b>NOTE:</b> All Switches shall have SMARTNET as a Mandatory requirement.</p>	No.	1		
K2.19	<p><b>MODULES:</b> Cisco Multimode Fiber modules for above switch(es) for the above switches. Should be 10G</p>	No.	2		
K2.20	<p><b>FIBER CABLING:</b> Allow sum for interlinking the Switches Above using Fiber cables c/w/ all accessories.</p>	Item	1		
K2.21	<p><b>INTEGRATION:</b> Allow sum for interlinking the Access control system to other security alarm panel installed by others.</p>	Item	1		
K2.22	<p><b>SIGNAGE:</b> Allow sum for putting Up signage as required by the International safety standards</p>	Item	1		
K2.23	<p><b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required</p>	Item	1		
K2.24	<p><b>ADDITIONAL ACCESSORIES:</b> Any other necessary item. please specify on a separate sheet showing the various items and their individual costs. Only give lumpsum here (If non write NIL)</p>	Item	1		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
K2.25	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>	Item	1		
K2.26	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )	Item	1		
K2.27	<b>TESTING &amp; COMMISSIONING:</b> Sum for Testing and commissioning of the entire installations set complete with all accessories, interconnections, controls, BMS link & activation and the necessary programing.	Item	1		
K2.28	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion.	Item	1		
K2.29	Preliminaries, contract conditions, general conditions & particular specifications	Item	1		
K2.30	Contingency	Item	1		1,373,000
<b>K2.31</b>	<b>Total c/f ACCESS CONTROL PRICE SUMMARY PAGE</b>				



**ACCESS CONTROL PRICE SUMMARY PAGE**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>COST (KShs)</b>
K1	WAREHOUSE	
K2	OFFICE BLOCK	
<b>K3</b>	<b>Total Exclusive of VAT</b>	
K4	<b>Add: 16% VAT</b>	
<b>K5</b>	<b>Total Inclusive of VAT c/f SECURITY SYSTEMS PRICE SUMMARY PAGE</b>	

**PEDESTRIAN  
CONTROL  
INSTALLATIONS**

## PEDESTRIAN CONTROL INSTALLATIONS

*The Contractor shall supply labour and supply, deliver, install, fix, connect, test, label and commission the works, clean, complete and working to every detail as described below and in the related specifications and /or on the drawings to the satisfaction of the Consulting Engineers.*

*All UTP Cables to be as Siemon or Molex*

*Technical product catalogues and specifications for quoted models to be attached*

**Note:** *The Model quoted is only a guide. Other Equivalents can be suggested subject to Engineers approval.*

### **L WAREHOUSE**

<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>RATE (Kshs)</b>	<b>COST (Kshs)</b>
L1.01	<b>HALF HEIGHT GLASS FLAP TURNSTILE:</b> Half Height Glass Flap Turnstile c/w software, installation accessories & all other accessories as described in the particular specifications of this document. The Turnstile should have 2No. Passages on each group.	No.	1		
L1.02	<b>FIXED PANELS:</b> Fixed Glass Panel to cover the area without the passage next to the turnstile c/w all installation accessories required.	No.	1		
L1.03	<b>WALK THROUGH METAL DETECTORS:</b> Walk Through Metal Detectors c/w software, installation accessories & all other accessories as described in the particular specifications of this document.	No.	1		
L1.04	<b>REVOLVING DOOR:</b> Access Controlled Revolving door c/w software, installation accessories & all other accessories as described in the particular specifications of this document.	No.	0		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
L1.05	<b>BAGGAGE SCANNER:</b> Baggage Scanner (Small) c/w software, installation accessories & all other accessories as described in the particular specifications of this document.	No.	1		
L1.06	<b>PROXIMITY ACCESS CARD (ORDINARY):</b> Proximity Access Cards c/w all other accessories as described in the particular specifications of this document	No.	10		
L1.07	<b>POWER SUPPLY:</b> Power supply for all the above equipment that require power.	Item	1		
L1.08	<b>CABLING:</b> Cabling & Associated accessories to run to all the above mentioned devices and enable a full operation of the installations.	Item	1		
L1.09	<b>INTEGRATION:</b> Allow sum for interlinking the Access control system to other security & alarm panels installed by others.	Item	1		
L1.10	<b>SIGNAGE:</b> Allow sum for putting Up signage as required by the International safety standards	Item	1		
L1.11	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required	Item	1		
L1.12	<b>ADDITIONAL ACCESSORIES:</b> Any other necessary item. please specify on a separate sheet showing the various items and their individual costs. Only give lumpsum here (If non write NIL)	Item	1		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
L1.13	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>	Item	1		
L1.14	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )	Item	1		
L1.15	<b>TESTING &amp; COMMISSIONING:</b> Sum for Testing and commissioning of the entire installations set complete with all accessories, interconnections, controls, BMS link & activation and the necessary programing.	Item	1		
L1.16	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion.	Item	1		
L1.17	Preliminaries, contract conditions, general conditions & particular specifications	Item	1		
L1.18	Contingency				100,000
<b>L1.19</b>	<b>Total c/f PEDESTRIAN CONTROL PRICE SUMMARY PAGE</b>				

**L2 OFFICE BLOCK**

<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>RATE (Kshs)</b>	<b>COST (Kshs)</b>
L2.01	<b>HALF HEIGHT GLASS FLAP TURNSTILE:</b> Half Height Glass Flap Turnstile c/w software, installation accessories & all other accessories as described in the particular specifications of this document. The Trunstile should have 2No. Passages on each group.	No.	1		
L2.02	<b>FIXED PANELS:</b> Fixed Glass Panel to cover the area without the passage next to the turnstile c/w all installation accessories required.	No.	1		
L2.03	<b>WALK THROUGH METAL DETECTORS:</b> Walk Through Metal Detectors c/w software, installation accessories & all other accessories as described in the particular specifications of this document.	No.	4		
L2.04	<b>REVOLVING DOOR:</b> Access Controled Revolving door c/w software, installation accessories & all other accessories as described in the particular specifications of this document.	No.	0		
L2.05	<b>BAGGAGE SCANNER:</b> Baggage Scanner (Small) c/w software, installation accessories & all other accessories as described in the particular specifications of this document.	No.	1		
L2.06	<b>PROXIMITY ACCESS CARD (ORDINARY):</b> Proximity Access Cards c/w all other accessories as described in the particular specifications of this document	No.	10		
L2.07	<b>POWER SUPPLY:</b> Power supply for all the above equipment that require power.	Item	1		
L2.08	<b>CABLING:</b> Cabling & Associated accessories to run to all the above mentioned devices and enable a full operation of the installations.	Item	1		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
L2.09	<b>INTEGRATION:</b> Allow sum for interlinking the Access control system to other security & alarm panels installed by others.	Item	1		
L2.10	<b>SIGNAGE:</b> Allow sum for putting Up signage as required by the International safety standards	Item	1		
L2.11	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required	Item	1		
L2.12	<b>ADDITIONAL ACCESSORIES:</b> Any other necessary item. please specify on a separate sheet showing the various items and their individual costs. Only give lumpsum here (If non write NIL)	Item	1		
L2.13	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>	Item	1		
L2.14	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )	Item	1		
L2.15	<b>TESTING &amp; COMMISSIONING:</b> Sum for Testing and commissioning of the entire installations set complete with all accessories, interconnections, controls, BMS link & activation and the necessary programing.	Item	1		
L2.16	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion.	Item	1		
L2.17	Preliminaries, contract conditions, general conditions & particular specifications	Item	1		
L2.18	Contingency				100,000
<b>L2.19</b>	<b>Total c/f PEDESTRIAN CONTROL PRICE SUMMARY PAGE</b>				

**PEDESTRIAN CONTROL PRICE SUMMARY PAGE**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>COST (KShs)</b>
L1	WAREHOUSE	
L2	OFFICE BLOCK	
<b>L3</b>	<b>Total Exclusive of VAT</b>	
L4	<b>Add: 16% VAT</b>	
<b>L5</b>	<b>Total Inclusive of VAT c/f SECURITY SYSTEMS PRICE SUMMARY PAGE</b>	



**VEHICULAR**  
**\$**  
**GATE**  
**CONTROL**  
**INSTALLATIONS**

## VEHICULAR & GATE CONTROL INSTALLATIONS

*The Contractor shall supply labour and supply, deliver, install, fix, connect, test, label and commission the works, clean, complete and working to every detail as described below and in the related specifications and /or on the drawings to the satisfaction of the Consulting Engineers.*

*All UTP Cables to be as Siemon or Molex*

*Technical product catalogues and specifications for quoted models to be attached*

*Kindly note that all warning safety signs on the security systems should be put in place.*

<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>RATE (Kshs)</b>	<b>COST (Kshs)</b>
M1.01	<b>UVSS:</b> Under Vehicle Scanner (UVSS) c/w software, installation accessories & all other accessories as described in the particular specifications of this document.	No.	3		
M1.02	<b>BOLLARDS (RETRACTING):</b> Retracting Bollards c/w software, installation accessories & all other accessories as described in the particular specifications of this document. Additional Requirments will be:  • 2No. Set of bollards each	No.	3		
M1.03	<b>TYRE RIPPERS (RETRACTING) - EXIT GATE:</b> Retracting Tyre Rippers c/w software, installation accessories & all other accessories as described in the particular specifications of this document.  • Length ( Blocking Width) Should be 4000mm	No.	3		
M1.04	<b>BOLLARDS (FIXED) - ENTRY &amp; EXIT GATE:</b> Retracting Bollards c/w installation accessories & all other accessories as described in the particular specifications of this document.	No.	0		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
M1.05	<p><b>TRAFFIC ARM / BOOM BARRIER:</b> Traffic Arm / Boom Barrier c/w software, installation accessories &amp; all other accessories as described in the particular specifications of this document.</p> <ul style="list-style-type: none"> <li>• Length ( Blocking Width) Should be 4500mm</li> </ul>	No.	6		
M1.06	<p><b>LOOP DETECTORS:</b> Loop Detectors c/w software, installation accessories &amp; all other accessories as described in the particular specifications of this document.</p>	No.	12		
M1.07	<p><b>LICENSE PLATE RECOGNITION (LPR):</b> Licence Plate Recognition System c/w software, installation accessories &amp; all other accessories as described in the particular specifications of this document.</p>	No.	6		
M1.08	<p><b>TRAFFIC LIGHTS:</b> Traffic Lights System c/w software, installation accessories &amp; all other accessories as described in the particular specifications of this document.</p>	No.	6		
M1.09	<p><b>CARD READERS (STAND ALONE):</b> Stand Alone Card Reader System c/w software, installation accessories &amp; all other accessories as described in the particular specifications of this document.</p>	No.	6		
M1.10	<p><b>HAND HELD EXPLOSIVES DETECTOR:</b> Hand Held Explosives Detector c/w software, installation accessories &amp; all other accessories as described in the particular specifications of this document.</p>	No.	3		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
M1.11	<b>PROXIMITY ACCESS CARD (ORDINARY):</b> Proximity Access Cards c/w all other accessories as described in the particular specifications of this document	No.	15		
M1.12	<b>ADMINISTRATION EQUIPMENT CABINET (WALL MOUNTED) - DUCTS :</b> 9U Administration Equipment Cabinet for housing all the accessories c/w all other accessories as described in the particular specifications of this document. Model As TOTEN	No.	1		
M1.13	<b>CABLING:</b> Cabling & Associated accessories to run to all the above mentioned devices and enable a full operation of the installations. All cables used should be as described in the particular specifications of this document	Item	1		
M1.14	<b>INTEGRATION:</b> Allow sum for interlinking the control system to other security & alarm panel installed by others.	Item	1		
M1.15	<b>SIGNAGE:</b> Allow sum for putting Up signage as required by the International safety standards	Item	1		
M1.16	<b>LABELLING:</b> Allow sum for putting permanent Labels on all installations including cabling as required	Item	1		
M1.17	<b>ADDITIONAL ACCESSORIES:</b> Any other necessary item. please specify on a separate sheet showing the various items and their individual costs. Only give lumpsum here (If non write NIL)	Item	1		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
M1.18	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>	Item	1		
M1.19	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )	Item	1		
M1.20	<b>TESTING &amp; COMMISSIONING:</b> Sum for Testing and commissioning of the entire installations set complete with all accessories, interconnections, controls, BMS link & activation and the necessary programing.	Item	1		
M1.21	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion.	Item	1		
M1.22	Preliminaries, contract conditions, general conditions & particular specifications	Item	1		
M1.23	Contingency				500,000
<b>M1.24</b>	<b>Total Exclusive of VAT</b>				
M1.25	<b>Add:</b> 16% VAT				
<b>M1.26</b>	<b>Total Inclusive of VAT c/f SECURITY SYSTEMS PRICE SUMMARY PAGE</b>				

**INTEGRATION  
SYSTEMS  
INSTALLATIONS**

## SECURITY INTEGRATION SYSTEMS

*The Contractor shall supply labour and supply, deliver, install, fix, connect, test, label and commission the works, clean, complete and working to every detail as described below and in the related specifications and /or on the drawings to the satisfaction of the Consulting Engineers.*

*All UTP Cables to be as Siemon or Molex*

*Technical product catalogues and specifications for quoted models to be attached*

*Note: The Model quoted is only a guide. Other Equivalentents can be suggested subject to Engineers approval.*

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
N1.01	<b>SECURITY PLATFORM INTEGRATON SOFTWARE:</b> Security Platform to enable all IP security surveillance systems to be seamlessly blended within a single intuitive interface to simplify operations.This should be c/w all other accessories as described in the particular specifications of this document. NOTE: The Licences should NOT be annual renewable licenses. The Preferred Software shall be as " <b>UNIFIED SECURITY PLATFORM</b> " to have "Omnicast" (For IP Video surveillance), 'Synergis" (For IP Access Control) & "AutoVu" (For IP Licence Plate Recognition.	No.	1		
N1.02	<b>INTEGRATION SERVER:</b> Integration Server c/w all other accessories as described in the particular specifications of this document	No.	1		
N1.03	<b>CARD PRODUCTION UNIT:</b> Card Production Unit c/w all other accessories as described in the particular specifications of this document. This should come with a ribbon for 200 Cards & a spare	No.	1		
N1.04	<b>OTHER NETWORK ACCESSORIES:</b> Sum for all network accessories required to run the systems in this document and integrated with the platforms above c/w all other accessories	Item	1		

Item	Description	Unit	Qty	RATE (Kshs)	COST (Kshs)
N1.05	<b>CABLING:</b> Cabling & Associated accessories to run to all the above mentioned devices and enable a full operation of the installations.	Item	1		
N1.06	<b>ADDITIONAL ACCESSORIES:</b> Any other necessary item. please specify on a separate sheet showing the various items and their individual costs. Only give lumpsum here (If non write NIL)	Item	1		
N1.07	<b>DOCUMENTATION:</b> Sum for Completion documents: Comprising Workshop drawings, manufacturer's technical product catalogues, users manuals, maintenance manuals, as installed drawings, test certificates, etc. { <b>NOTE: Penultimate Valuation will not be paid until these are fully availed &amp; signed off by the engineer }</b>	Item	1		
N1.08	<b>TRAINING:</b> Sum for Training of client personel / users ( At least 5No Staff for 1Week )	Item	1		
N1.09	<b>TESTING &amp; COMMISSIONING:</b> Sum for Testing and commissioning of the entire installations set complete with all accessories, interconnections, controls, BMS link & activation and the necessary programing.	Item	1		
N1.10	<b>DLP SUM:</b> Sum for 6 months comprehensive maintenance from date of practical completion.	Item	1		
N1.11	Preliminaries, contract conditions, general conditions & particular specifications	Item	1		
N1.12	Contingency	Item	1		100,000
<b>N1.13</b>	<b>Total Exclusive of VAT</b>				
N1.14	<b>Add: 16% VAT</b>				
<b>N1.15</b>	<b>Total Inclusive of VAT c/f SECURITY SYSTEMS PRICE SUMMARY PAGE</b>				



**SECURITY  
INSTALLATIONS  
SUMMARY**

**SECURITY SYSTEMS PRICE SUMMARY PAGE**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>COST (Kshs)</b>
O1	CCTV INSTALLATIONS	
O2	ACCESS CONTROL PRICE SUMMARY PAGE	
O3	PEDESTRIAN CONTROL INSTALLATIONS	
O4	VEHICULAR & GATE CONTROL INSTALLATIONS	
O5	SECURITY INTEGRATION SYSTEMS	
O6	<b>TOTAL SUM Inclusive of VAT c/f to STRUCTURED CABLING, IP-PABX TELEPHONY SYSTEMS, UPSes &amp; SECURITY PRICE SUMMARY PAGE</b>	

**STRUCTURED  
CABLING,  
IP PABX,  
UPSES  
&  
SECURITY  
INSTALLATIONS  
SUMMARY**

**STRUCTURED CABLING, IP-PABX TELEPHONY SYSTEMS, UPSes**  
**& SECURITY PRICE SUMMARY PAGE**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>COST (Kshs.)</b>
P1	STRUCTURED CABLING INSTALLATIONS	
P2	IP-PABX & TELEPHONY SYSTEMS	
P3	UPS INSTALLATIONS ( SERVER & ICT ROOMS)	
P4	SECURITY INSTALLATION SYSTEMS	
<b>P5</b>	<b>TOTAL SUM Inclusive of VAT c/f to Form of Tender</b>	

Total amount in words: Kenya shillings \_\_\_\_\_

Name of firm / company \_\_\_\_\_

Official rubber-stamp \_\_\_\_\_

P.I.N. No.: \_\_\_\_\_ V.A.T. Reg. No. : \_\_\_\_\_

Signed by: \_\_\_\_\_ Date \_\_\_\_\_