



KAIMOSI FRIENDS UNIVERSITY COLLEGE (KAFUCO)

ADDENDUM 2

Date issued: 9th September 2021

Tender Name: PROCUREMENT OF WORKS (STRUCTURED CABLING & IPBX, AUDIO VISUAL, CCTV AND ACCESS CONTROL INSTALLATION WORKS)

(PROPOSED CONSTRUCTION OF LIBRARY AT KAIMOSI FRIENDS UNIVERSITY COLLEGE)

TENDER No: KAFUCO/LIB/006/2021-2022

CLARIFICATION ON THE BILL OF QUANTITIES

NOTE:

- 1) The bill of quantities (part II) for the above mentioned tender was inadvertently omitted in part during the uploading of the document.
- 2) The rectification on the same has been attached in this document.
- 3) The whole of this document **MUST** be inserted into the original tender document in the same place.

All the other information remains as it is.

Cyrus Wawire
In - charge Procurement

PART II - WORKS REQUIREMENTS

A. Notes and Sample Items for Preparing a Bill of Quantities

- ## 4. NOTES TO PREPARING PREAMBLES

- | Unit | Abbreviation | Unit | Abbreviation |
|-------------|------------------------|------------|--------------|
| cubic meter | m ³ or cu m | millimetre | mm |

- 60

Bills of Quantities, where applicable, and otherwise at such rates and prices as the Architect may fix within the terms of the Contract.

45. The rates and prices tender in the priced Bills of Quantities shall, except in so far as it is otherwise provided under the Contract, include all Constructional Plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.
46. A rate or price shall be entered against each item in the priced Bill 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 Bill of Quantities.
47. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced 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.
48. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bills of Quantities. References to the relevant sections of the Contract documents shall be made before entering prices against each item in the priced Bills of Quantities.
49. Provisional Sums and contingency sums included and so designated in the Bills of Quantities shall be expended in whole or in part at the direction and discretion of the Architect in accordance with Sub-Clause 13.5 and Clause 13.6 of the General Conditions of contract.
- 4.10 In preparing the Bills of Quantities, notes should be removed as they are intended to guide the person preparing the Tender Documents. The Contractor must allow in his rates for any costs associated with and complying with the requirements in the Preambles.
- 4.11 Should a tenderer/contractor not price any item in any section of the Bills of Quantities including Preliminary items, it will be assumed that he/she has spread its cost in other areas that he/she will have priced. Therefore, the item or items will be executed without any additional costs or without being treated like variations.

5. NOTES ON PREPARING BILLS OF QUANTITIES

- 5.1 The Preliminary Items should be limited to tangible items that should be priced by the tenderer, are identifiable and can be priced separately and included in the interim valuations precisely. Such items may include such items as site office, notice boards, and other temporary works, otherwise items such as security for the Works which are primarily part of the Contractor's obligations should be included in the Contractor's rates.
- 5.2 The work items in the Bills of Quantities should be grouped into sections to distinguish between those parts of the Works which by nature, location, access, timing, or any other special characteristics may give rise to different methods of construction, or phasing of the Works, or considerations of cost. Such groups could be ground excavations, structures, external works, services, etc. General items common to all parts of the Works may be grouped as a separate section in the Bill of Quantities.
- 5.3 Quantities should be computed net from the Drawings, unless directed otherwise in the Contract, and no allowance should be made for bulking, shrinkage or waste. Quantities should be rounded up where appropriate.
- 5.4 Where the measured items are deemed not to be exact because of the likelihood that the scope can change during the execution of the works, such items could be subject to re-measurement, the word “**provisional**” should be used to identify such cases. Where whole sections of the work items fall in this class, for example foundations, they should be labelled “Provisional Quantities” or “Provisional Items” so that the Tenderer/Contractor is advised up front that such items are subject to re-measurement to be done before such work is cover-up.
- 5.5 All items that have not been measured and therefore not subject to tenders pricing should be listed in the Bills of Quantities as **Provisional Sums** for particular item or class of Work, which may be subject to a nominated subcontract or separate measurements at a later date during the execution of the works. For example, if it is deemed not possible to measure electrical works before going to tender because detail designs are not ready, a provisional sum can be allowed in the Bills of Quantities for “Installation of Electrical Works” to be executed later when actual design details are completed. To the extent not covered

above, there should be in the Bills of Quantities a general provision for physical and financial contingencies made as a “Provisional Sum for Contingencies” and “Provisional Sum for Fluctuations”. The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises.

- 56 Provisional sums to cover specialized works normally carried out by Nominated Sub Contractors should be avoided and instead Bills of Quantities of the specialized Works should be included as a section of the main Bills of Quantities to be priced by the Main Contractor. The Main Contractor should be required to indicate the name(s) of the specialized firms he proposes to engage to carry out the specialized Works as his approved domestic sub-contractors. Only provisional sums to cover specialized Works by statutory authorities should be included in the Bills of Quantities.
- 57 A Day work Schedule should be included if the probability of unforeseen work, outside the items included in the Bill of Quantities, is relatively high. To facilitate checking by the Procuring Entity of the realism of rates quoted by the tenderers, the Day work Schedule should normally comprise:
- i) A list of the various classes of labor, and materials for which basic.
 - ii) Day work rates and prices for various categories of labor are to be inserted by the tenderer, together with a statement of the conditions under which the Contractor will be paid for Work executed on a Day work basis.
 - iii) A percentage to be entered by the tenderer against each basic Day work item.
 - iv) Subtotal amount for labor, materials and plant representing the Contractor's profit, overheads, supervision and other charges.
- 58 The Summary should contain a tabulation of the separate parts of the Bills of Quantities carried forward, with provisional sums for Day work, Provisional sums and Contingencies, and provision for Total Costing. The last line should allow for tenderer to indicate any discounts before arriving at a total cost carried forward to the Form of Tender.

BILLS OF QUANTITIES

(a) Preambles

1. The method of measurement of completed work for payment shall be in accordance with *The Standard Method of Measurements for Building Works and Associated Civil Works for Eastern Africa (2nd edition) of 2008 prepared by The Architectural Association of Kenya (Quantity Surveyors Chapter)*
2. The Site is situated in **AT KAIMOSI FRIENDS UNIVERSITY COLLEGE, ALONG KAIMOSI - KAPSABET ROAD APPROXIMATELY 42 KILOMETERS FROM KISUMU TOWN, KAIMOSI TOWN, VIHIGA COUNTY.** It is approximately **360** Kilometers from Nairobi. Access to the site shall be through **KAIMOSI - KAPSABET ROAD.** Which is an existing public road. Any damage caused to the surfaces of this road shall be made good at the Contractor's expense. The Contractor shall visit the site and acquaint itself with its nature and position, the nature of the ground, substrata and other local conditions, positions of existing power, water and other services, access roads or any other limitations that might affect his cost or progress. No claim for extras shall be considered on account of lack of knowledge in this respect.
3. The Contractor shall obtain the Architect's approval on the siting of all temporary buildings, spoil heaps, temporary access path, and storage of materials. The Contractor shall also obtain the Architect approval and direction regarding the use of any materials found on the Site.
4. The drawings used in the preparation of these Bills of Quantities can be inspected at the offices of the Procuring Entity or Procuring Entity's Representative during normal working hours. Two sets of the Working Drawings shall be provided to the contractor but additional copies shall be provided at a cost to be determined by the Engineer.
5. The Contractor shall allow for the payment of all bank charges in connection with the procurement of Bank Guarantees and stamp charges in connection with this contract Agreement.
6. The Contractor shall carry out the various sections of the Works in such an order as the Architect May direct. The Procuring Entity reserves the right to occupy the Works by sections on completion provided that such occupation is considered to be both practical and reasonable and will not interfere with the Works. The Contractor shall allow any costs associated with such occupation.
7. The main Contractor will be fully responsible for paying his Sub-Contractor but the Procuring Entity reserves the right in very exceptional circumstances to make such payments direct in the interests of the project where the completion thereof might be jeopardized by any dispute or vicariousness between the Contractor and the Sub- Contractor involve.
8. The Contractor shall complete and deliver the Works in the period inserted in the Form of Tender as his time for completion of the Works from the date for Possession, to be agreed with the Engineer. The Contract Period is presumed to have been calculated making due allowance for seasonal inclement weather conditions. No claim for extension of time due to the normal inclement weather for this area shall be entertained.
9. The Contractor shall, upon receiving instructions to proceed with the Works, draw up a Programme and Progress Chart setting out the order in which the Works are to be carried out, with the appropriate dates thereof. This Chart shall be agreed with the Architect and no deviation from the order set out in it will be permitted without the written consent of the Engineer. The Contractor will be responsible for arranging the above programme with all his sub-Contractors and Specialties. The Contractor shall allow in his rates for carrying out this exercise, and for updating it as required.
10. The Contractor shall submit to the Architect on the first day of each week or such longer period as the Architect from time to time direct, a Progress Report and any information for the proceeding period, showing the progress during the period and the up-to-date cumulative progress on all important items of each section or portion of the Works.
11. The Contractor shall arrange for photographs of the Site to be taken by a professional photographer approved by the Engineer. The Photographs shall provide a record of the Site and adjacent are as prior to the commencement of the Works and shall cover such portion of the works in progress and completion as the Architect shall direct. All prints shall be full plate size, unmounted, and marked on the reverse side with the date of exposure, identification reference and brief description. The copyright of all photographs shall be vested in the Procuring Entity. The negatives and four prints from each negative shall be delivered to the Architect within two weeks of exposure.

12. Figured dimensions are to be followed in preference to dimensions scaled from the Drawings, but whenever possible dimensions are to be taken on the Site or from the buildings. Before any work is commenced by Sub-Contractors or Specialist Firms, dimensions must be checked on the site comparable dimensions shown on the drawings. The Contractor shall be responsible for the accuracy of such dimensions.
13. Prior to commencement of any work the Contractor is to ascertain from the relevant Authorities the exact position, depth and level of all existing electric cables, water pipes or other services in the area and he shall make whatever provisions may be required by the Authorities concerned for the support and protection of such services. Any damage or disturbance caused to any services shall be reported immediately to the Architect and the relevant Authority and shall be made good to their satisfaction at the Contractor's expense. Where appropriate the Contractor shall open up the ground in advance of the main work by hand digging if necessary, to locate precisely the position and details of the services which are likely to affect his operations.
14. The Contractor shall include in his prices for the transport of materials, workmen, etc./, to and from the site of the proposed works, at such hours and by such route as are permitted by the Authorities.
15. The Contractor will be required to make good, at his own expense and damage he may cause to the present road surface and pavements within or beyond the boundary of the Site, during the period of the works. All existing paths, storm water channels, etc., that may be destroyed or damaged during the progress of the Works shall be reinstated by the Contractor to the satisfaction of the Engineer.
16. The Contractor is to allow for complying with all instructions and regulations of the Police Authorities.
17. All water shall be fresh, clean and pure, free from earthly, vegetable or organic matter, acid or alkaline substance in solution. The Contractor shall provide at his own risk and cost all water for use in connection with the Works, (including works of sub-contractors). If need be, he shall make arrangements with the Local Water Authority for the installation of a separate meter for all water used by him throughout the Contract and pay all cost and fees in connection therewith. He shall also provide temporary storage tanks and tubing, etc., as may be necessary, and clear away at completion.
18. The Contractor shall provide all artificial lighting and power for his own use on the Works, (including Sub – Contractor's) including all temporary connections, wiring, fittings, etc., and clearing away on completion. The Contractor shall pay all fees and obtain all permits in connection there with.
19. The Contractor shall constantly keep on the Works a Literate English-speaking Agent or Representative, competent and experienced in the kind of work involved, who shall give his whole time to the superintendence of the works. (Including works of sub – contractors). Such Agent or Representative shall receive on behalf of the Contractor directions and instruction from the Engineer, and such directions and instructions shall be deemed to be given to the contractor in accordance with the Conditions of Contract. The Agent shall not be replaced without the specific approval of the Engineer.
20. The Contractor shall ensure that the safety of his work people and all authorized visitors to the site are protected at all times. In particular, there shall be the proper provision of guard-rails to scaffolding, protection against falling materials, tools on site, dust, nail and other sharp objects. The site shall be kept tidy and clear of dangerous rubbish. The Architect shall be empowered to suspend work on site should it be considered this condition is not being observed and no claim arising from such suspension will be allowed.
21. They are as available to the Contractor for work yards, offices and other facilities shall be directed by the Architect and any existing features to remain shall be protected from damage throughout the Contract Period and handed back in good condition when they are vacated at the end of the Contract. If additional areas are required, the contractor shall source then at own cost.
22. The Contractor shall give the Architect reasonable notice of the intention to set out or take levels for any part of the Works so that arrangements may be made for checking the work. The accuracy of setting out and leveling shall be within the tolerances specified in the Specifications or on the Drawings. The checking of setting out or leveling by the Architect shall not relieve the Contractor of his duties or responsibilities under the Contract.
23. The Contractor must take steps necessary to safe guard and shall beheld fully responsible for any damage caused to existing and adjacent property, including buildings that are not a subject of demolition. He shall make good at his own cost damage to persons and property caused there on, and he shall indemnify the Procuring Entity against any loss or claim that may arise.

24. The Contractor shall take such steps and exercise such care and diligence as to minimize nuisance arising from dust, noise or any other cause to the occupiers of the existing and adjacent property. He must provide such temporary and special screens and tarpaulins or gummy bags, hoarding, barriers, warning signs etc. as he considers necessary and sufficient for the protection of the existing and adjacent property and or prevention of nuisance etc. as directed by Engineer.
25. The Contractors attention is drawn to the standards levy order which was amended on 15th October 1998. Legal notice No.154 of 1998. The Contractor is required to pay a monthly level of 0.2% of his factory price of construction works with effect from January 1999. Tenderer shall allow for this in the build-up of his rates.
26. The Contractor shall provide temporary sheds, offices mess rooms, sanitary, accommodation and other temporary buildings for the use of the contractor and sub-contractors, including lighting furniture equipment and attendance.
27. Contractor shall provide/build labor camp sites to be agreed with the Engineer. Labor camps shall be complete with sanitary accommodation and fencing gates.
28. The Contractor must provide the necessary toilet facilities to the requirement and satisfaction of the Health Authorities and maintain the same in a thoroughly clean and sanitary condition and pay all conservancy fees during the period of the Works and remove when no longer required.
29. The Contractor shall provide at his own risk and cost all watching and lighting as necessary to safeguard the Works, Plant and materials against damage and theft.
30. The Contractor shall provide all necessary hoists, tackle, plant, equipment, vehicles, tools and appliances of every description for the due and satisfactory completion of the Works and shall remove the same on completion. All such plant, tools and equipment shall comply with all regulations in force throughout the period of the Contract and shall be altered or adopted during the Contract period as may be necessary to comply with any amendments in or additions to such regulations.
31. Provide, erect and maintain all necessary scaffolding, sufficiently strong and efficient for the due performance of the works, including Sub-Contract Works, provide special scaffolding as required by Sub-Contractors, alter and adopt all scaffolding as and when required during the Works, and remove on completion. No scaffolding is measured here in after and the Contractor must allow in his rates for this.
32. The Contractor shall take all necessary precautions such as temporary fencing, hoarding fans, planked footways, guard-rails gantries screen, etc., for the safe custody of the Works, materials and public protection and adjacent properties.
33. Cover up all and protect from damage, including damage from inclement weather, all finished work and unfixed materials, including that of Sub-Contractors, etc., to the satisfaction of the Architect until the completion of the Contract.
34. The Contractor shall, after completion of the works, at his own expense, remove and clear away all surplus excavated demolition materials, plant, rubbish and unused materials and shall leave the whole of the Site and Works in a clean and tidy state to the satisfaction of the Engineer, sheds, camps, etc. Particular care shall be taken to leave clean all floors and windows and to remove all paint and cement all rubbish and dirt as it accumulates. The Contractor is to find his own dump and shall pay all charges in connection therewith.
35. Concrete test cubes shall be prepared in a set of three, as described including testing fees, labor and materials, making molds, transport, handling, etc. Allow in your rates for making at least four cubes on each occasion, from different batches; the concrete being taken from the point of deposit.
36. The Contractor shall furnish at the earliest possible opportunity before work commences, and at his own cost, any samples of materials and workmanship that may be called for by the Architect for the approval or rejection, and any further samples in the case of rejection, until such samples are approved by the Engineer. Such samples, when approved, shall be the minimum standard for the work to which they apply. The procedure for submitting samples of materials for testing or approval and the method of marking for identification shall be as laid down by the Engineer. The Contractor shall allow in his Tender for such samples and tests, including those in connection with his Sub-Contractors work.
37. The Contractor's attention is drawn to the Finance Bill of the year 2000/2001 on withholding tax on contractual payment section 35(7)(i)(ii) which became effective on 1st July 2000. A 3% withholding tax will be applicable

to all interim payments exceeding Kshs..... for work done in respect of building or civil works. The contractor shall allow for any costs arising resulting there from in the build-up of rates.

38. Blasting will only be allowed with the express permission of the Architect in writing. All blasting operations shall be carried out at the Contractor's sole risk and cost, in accordance with any Government regulations in force for the time being, and any special regulations laid down by the Architect governing the use and storage of explosives.
39. The National Construction Authority is a state corporation established under the national construction authority Act No.14 of 2011. The broad Mandate of the Authority is to oversee the construction industry and coordinate its development. The National Construction Authority Regulations 2014 with an effective date of 6th June 2014, regulation 25, - Allow 0.5% of the tender sum/contract sum for construction levy.
40. The Contractor attention is drawn to Finance Bill of 1993 where VAT was introduced in all contracts for construction services. The tenderer is also drawn to VAT Act Cap 476 clause 19(9). The tenderer must allow for VAT1.19 as instructed elsewhere.
41. The contractor shall allow and pay for all insurance to cover risks and indemnities required Items 17 and 18 of the Conditions of contract and also specified in the Special Conditions of Contract.

BILL NO. 1 - PRELIMINARY ITEMS

ITEM No.	DESCRIPTION	AMOUNT
1.	<p>The Contractor shall provide, or erect and maintain an approved lock-up office for the sole use of the Architect and his own site staff. The office, which will have a total floor area of not less than square metres, will be divided into two separate interconnected offices. Services to be provided shall include a telephone, water sanitary and electrical supply and drainage. The offices shall be supplied with furniture and equipment that shall include:</p> <p>4 No. desks with chairs; 1 No. large table with sufficient number of chairs; drawing table along the full length of one side with plan drawers and drawing stools; 4 No. waste paper baskets; sufficient number of pin boards; and any additional furniture and fittings as may reasonably be required during the Contract period. The Contractor shall provide the Architect and site staff with computer sets or laptops, printers and telephones all that are necessary for project use.</p> <p>The office furniture and equipment shall all be to the approval of the Engineer. The Contractor shall also provide all labor, equipment and consumable stores equipment throughout the currency of the contract.</p>	
2	<p>[OPTIONAL] Contractor shall provide a house for Engineers site agent, which shall be one bedroomed temporary house with a sitting room, toilet, bathroom and a kitchen complete with electrical and sanitary installations and provide maintenance and paying of bills of water and electricity up to and including end of the contract period.</p>	
3	<p>Provide a signboard not less than _____square meters in size of a design type, and with lettering and coloring and in a position approved by the Engineer. The signboard shall be for the display of the Main Contractor's name and the names of all his Sub-Contractors, with the Procuring Entity's name painted thereon. All Consultants names be printed in letters not exceeding 50 mm high. No other signboard or advertising shall be allowed. The signboard shall be fully maintained during the Contract Period and shall be pulled down and removed at the end of the contract.</p>	
4	<p>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.</p> <p>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.</p>	
5	<p>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.</p>	
6	<p>Identification of plant components: The Sub-contractor shall supply and fix identification labels to all plant, starters, switches and items of control</p>	

	<p>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.</p> <p>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.</p>	
7	<p>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.</p> <p>The Contract Drawings are not intended to be Working Drawings and shall not be used unless exceptionally they are released for this purpose</p>	
8	<p>Working Drawings: The Sub-contractor shall prepare such Working Drawings. 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 subcontractor indicating approval or amendment therein.</p>	
9	<p>Record Drawings (As Installed) drawings</p> <p>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.</p> <p>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.</p>	
10	<p>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.</p> <p>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.</p>	500,000.00
11	<p>Maintenance Manual</p> <p>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.</p>	
12	<p>Testing and Inspection – Manufactured Plant</p> <p>The Engineer reserves the right to inspect and test or witness of all manufactured plant equipment and materials.</p>	

	<p>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.</p> <p>The Sub-contractor shall give two weeks' 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</p> <p>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.</p> <p>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.</p>	
13	<p>Testing and Inspection –Installation</p> <p>Allow for testing each section of the Sub-contract Works installation as described hereinafter to the satisfaction of the Engineer.</p>	
14	<p>Initial Maintenance</p> <p>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.</p> <p>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.</p> <p>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</p>	
15	<p>Protection</p> <p>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.</p>	
	TOTAL CARRIED TO GRAND SUMMARY	

ULTRA MODERN LIBRARY - KAIMOSI

BILL NO.2: WORK ITEMS

A.) STRUCTURED CABLING WORKS

SCHEDULE 1

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT(KSH.)
	<u>DATA AND VOICE INSTALLATION WORKS</u>				
	<u>BASEMENT FLOOR LEVEL</u>				
	Supply,install, test and commission the following items				
1.00	RJ 45 cat 6A UTP (Dual) Data/Telephone outlet points complete with draw wire and with twin faceplate and labelling system as Siemons or approved equivalent	86	No.		
1.01	3M RJ45-RJ45 Cat 6A UTP factory terminated patch cord as Siemon or approved equivalent to be used at work station.	172	No.		
1.02	1M RJ45-RJ45 Cat 6A UTP factory terminated patch cord as Siemon or approved equivalent to be used in cabinet.	172	No.		
1.03	Cat 6A UTP 4-Pair cable as Siemon or approved equivalent drawn in the trunkings to wire both the data and voice points	10320	LM		
	<u>ACTIVE COMPONENTS</u>				
1.04	Backbone core switch complete with the chassis, power supply unit, virtual supervisor engine with 40 Gigabit Ethernet uplinks, switches, chassis cable management system, high speed fan tray,Secure segmentation with SD-Access, 2PSUs (N+1 power redundancy), fibre income and output capability, rack and all accessories and as Cisco or Approved equivalent	1	No.		
1.05	48 Port UPOE Edge Switch as Cisco or equal and approved equivalent as described in particular specifications	2	No.		
1.06	24 Port UPOE Edge Switch as Cisco or equal and approved equivalent as described in particular specifications	0	No.		
1.07	Wireless router for wifi hotspot as cisco installed in each wing or equal and approved equivalent as described in particular specifications	2	No.		
	TOTAL C/F TO NEXT PAGE				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT(KSH.)
	TOTAL B/D FROM PREV. PAGE				
	<u>CABINETS</u>				
1.08	42U ground Mounted/ free standing cabinet with low noise (low dB) fans and power outlet sockets, as described in particular specifications	1	No.		
1.09	32U ground Mounted cabinet with low noise (low dB) fans and power outlet sockets, as described in particular specifications	2	No.		
1.10	48 port RJ45 cat 6 Data patch panel for UTP termination as Siemon.	4	No.		
1.11	4U WM series rack mount cable managers	4	No.		
1.12	240V, 50Hz 3000VA, Rack Mountable Double Conversion APC Smart-UPS un-interrupted power supply unit (UPS) with USB and Serial Port or equal and approved equivalent	2	No		
1.13	Accessories and supportive works.				
	a) Flexible conduits and service plates.	1	Lot		
	b) self tapping labels	100	No.		
	c) connecting the cabinets to power supply.	6	Item		
	d) Earthing	3	Lot		
	e) Configuration of switches.	1	Item		
	<u>TELEPHONE INSTRUMENTS</u>				
1.14	Standard IP Network Phone as described in the technical Specifications	2	No.		
	<u>IP PABX SYSTEM</u>				
1.15	IP PABX Control Unit - Network communication platform for unified communication as described in the technical Specifications	1	No.		
	TOTAL C/F TO SUMMARY PAGE				

SCHEDULE 2

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT(KSH.)
	<u>DATA AND VOICE INSTALLATION WORKS</u>				
	GROUND FLOOR				
	Supply,install, test and commission the following items				
2.00	RJ 45 cat 6A UTP (Dual) Data/Telephone outlet points complete with draw wire and with twin faceplate and labelling system as Siemons or approved equivalent	50	No.		
2.01	3M RJ45-RJ45 Cat 6A UTP factory terminated patch cord as Siemon or approved equivalent to be used at work station.	100	No.		
2.02	1M RJ45-RJ45 Cat 6A UTP factory terminated patch cord as Siemon or approved equivalent to be used in cabinet.	100	No.		
2.03	Cat 6A UTP 4-Pair cable as Siemon or approved equivalent drawn in the trunkings to wire both the data and voice points	6000	LM		
	<u>ACTIVE COMPONENTS</u>				
2.04	Backbone core switch complete with the chasis, power supply unit, virtual supervisor engine with 40 Gigabit Ethernet uplinks, switches, chasis cable management system, high speed fan tray,Secure segmentation with SD-Access, 2PSUs (N+1 power redundancy), fibre income and output capability, rack and all accessories and as Cisco or Approved equivalent	1	No.		
2.05	48 Port UPOE Edge Switch as Cisco or equal and approved equivalent as described in particular specifications	1	No.		
2.06	24 Port UPOE Edge Switch as Cisco or equal and approved equivalent as described in particular specifications	1	No.		
2.07	Wireless router for wifi hotspot as cisco installed in each wing or equal and approved equivalent as described in particular specifications	2	No.		
	TOTAL C/F TO NEXT PAGE				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT(KSH.)
	TOTAL B/D FROM PREV. PAGE				
	<u>CABINETS</u>				
2.08	42U ground Mounted cabinet with low noise (low dB) fans and power outlet sockets, as described in particular specifications	1	No.		
2.09	32U ground Mounted cabinet with low noise (low dB) fans and power outlet sockets, as described in particular specifications	2	No.		
2.10	48 port RJ45 cat 6 Data patch panel for UTP termination as Siemon.	4	No.		
2.11	4U WM series rack mount cable managers	4	No.		
2.12	240V, 50Hz 1500VA, Rack Mountable Double Conversio APC Smart-UPS un-interrupted power supply unit (UPS) with USB and Serial Port or equal and approved equivalent	2	No		
2.13	Accessories and supportive works.				
	a) Flexible conduits and service plates.	1	Lot		
	b) self tapping labels	100	No.		
	c) connecting the cabinets to power supply.	6	Item		
	d) Earthing	3	Lot		
	e) Configuration of switches.	1	Item		
	<u>TELEPHONE INSTRUMENTS</u>				
2.14	Standard IP Network Phone as described in the technical Specifications	5	No.		
2.15	Executive Set complete with, Network connectivity via Power over Ethernet or wireless client mode as described in the technical Specifications	1	No.		
	TOTAL C/F TO SUMMARY PAGE				

SCHEDULE 3: TYPICAL FIRST, SECOND
AND THIRD FLOORS

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT(KSH.)
	<u>DATA AND VOICE INSTALLATION WORKS</u> FIRST FLOOR Supply,install, test and commission the following items				
3.00	RJ 45 cat 6A UTP (Dual) Data/Telephone outlet points complete with draw wire and with twin faceplate and labelling system as Siemons or approved equivalent	64	No.		
3.01	3M RJ45-RJ45 Cat 6A UTP factory terminated patch cord as Siemon or approved equivalent to be used at work station.	128	No.		
3.02	1M RJ45-RJ45 Cat 6A UTP factory terminated patch cord as Siemon or approved equivalent to be used in cabinet.	128	No.		
3.03	Cat 6A UTP 4-Pair cable as Siemon or approved equivalent drawn in the trunkings to wire both the data and voice points	7680	LM		
3.04	<u>ACTIVE COMPONENTS</u>				
3.05	48 Port UPOE Edge Switch as Cisco or equal and approved equivalent as described in particular specifications	2	No.		
3.06	24 Port UPOE Edge Switch as Cisco or equal and approved equivalent as described in particular specifications	0	No.		
3.07	Wireless router for wifi hotspot as cisco installed in each wing or equal and approved equivalent as described in particular specifications	2	No.		
	TOTAL C/F TO NEXT PAGE				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT(KSH.)
	TOTAL B/D FROM PREV. PAGE				
	<u>CABINETS</u>				
3.08	42U ground Mounted/Free standing cabinet with low noise (low dB) fans and power outlet sockets, as described in particular specifications	1	No.		
3.09	48 port RJ45 cat 6 Data patch panel for UTP termination as Siemon.	3	No.		
3.10	4U WM series rack mount cable managers	6	No.		
3.11	240V, 50Hz 1500VA, Rack Mountable Double Conversion APC Smart-UPS un-interrupted power supply unit (UPS) with USB and Serial Port or equal and approved equivalent	1	No		
3.12	Accessories and supportive works.				
	a) Flexible conduits and service plates.	1	Lot		
	b) self tapping labels	100	No.		
	c) connecting the cabinets to power supply.	6	Item		
	d) Earthing	1	Lot		
	e) Configuration of switches.	1	Item		
	<u>TELEPHONE INSTRUMENTS</u>				
3.13	Standard IP Network Phone as described in the technical Specifications	3	No.		
3.14	Allow for preparing and presenting warranty and documentation, cabling layout diagrams, indelible point labels and preparing and submitting individual test results (for each point and for all point to be submitted as a bound report).	1	Item		
	TOTAL FOR 1 NO. TYPICAL FLOOR				
	TOTAL FOR 3 NO. TYPICAL FLOORS(1 ST 2 ND & 3 RD FLOORS) C/F TO PRICE SUMMARY PAGE		X	3	

SCHEDULE 4

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT(KSH.)
	<u>DATA AND VOICE INSTALLATION WORKS</u>				
	FOURTH FLOOR				
	Supply,install, test and commission the following items				
4.00	RJ 45 cat 6A UTP (Dual) Data/Telephone outlet points complete with draw wire and with twin faceplate and labelling system as Siemons or approved equivalent	80	No.		
4.01	3M RJ45-RJ45 Cat 6A UTP factory terminated patch cord as Siemon or approved equivalent to be used at work station.	160	No.		
4.02	1M RJ45-RJ45 Cat 6A UTP factory terminated patch cord as Siemon or approved equivalent to be used in cabinet.	160	No.		
4.03	Cat 6A UTP 4-Pair cable as Siemon or approved equivalent drawn in the trunkings to wire both the data and voice points	9600	LM		
	<u>ACTIVE COMPONENTS</u>				
4.04	48 Port UPOE Edge Switch as Cisco or equal and approved equivalent as described in particular specifications	2	No.		
4.05	Wireless router for wifi hotspot as cisco installed in each wing or equal and approved equivalent as described in particular specifications	2	No.		
	TOTAL C/F TO NEXT PAGE				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT(KSH.)
	<u>TOTAL B/D FROM PREV. PAGE</u> <u>CABINETS</u>				
4.06	42U ground Mounted cabinet with low noise (low dB) fans and power outlet sockets, as described in particular specifications	1	No.		
4.07	48 port RJ45 cat 6 Data patch panel for UTP termination as Siemon.	3	No.		
4.08	24 port RJ45 cat 6 Data patch panel for UTP termination as Siemon.	1	No.		
4.09	4U WM series rack mount cable managers	6	No.		
4.10	240V, 50Hz 1500VA, Rack Mountable Double Conversion APC Smart-UPS un-interupted power supply unit (UPS) with USB and Serial Port or equal and approved equivalent	1	No		
4.11	Accessories and associated works.				
	a) Flexible conduits and service plates.	1	Lot		
	b) self tapping labels	100	No.		
	c) connecting the cabinets to power supply.	6	Item		
	d) Earthing	1	Lot		
	e) Configuration of switches.	1	Item		
	<u>TELEPHONE INSTRUMENTS</u>				
4.12	Standard IP Network Phone as described in the technical Specifications	2	No.		
4.13	Executive Set complete with, Network connectivity via Power over Ethernet or wireless client mode as described in the technical Specifications	1	No.		
4.14	Allow for preparing and presenting warranty and documentation, cabling layout diagrams, indelible point labels and preparing and submitting individual test results (for each point and for all point to be submitted as a bound report).	1	Item		
	<u>TOTAL C/F TO PRICE SUMMARY PAGE</u>				

PRICE SUMMARY PAGE

ITEM	DESCRIPTION	AMOUNT(KSH.)
A	TOTAL FOR DATA AND VOICE INSTALLATION WORKS - BASEMENT LEVEL B/F FROM PAGE 71	
B	TOTAL FOR DATA AND VOICE INSTALLATION WORKS - GROUND FLOOR B/F FROM PAGE 73	
C	TOTAL FOR DATA AND VOICE INSTALLATION WORKS - TYPICAL 3NO. FLOORS B/F FROM PAGE 75	
D	TOTAL FOR DATA AND VOICE INSTALLATION WORKS - FOURTH FLOOR B/F FROM PAGE 77	
E	Contingency Provisional sum of Kenya Shillings Kshs.500,000 /= contingency to be used at the discretion of the Project Manager	
	GRAND TOTAL FOR STRUCTURED CABLING WORKS C/F TO GRAND SUMMARY PAGE	

BILL No. 2: B). AUDIO VISUAL INSTALLATION WORKS
GROUND FLOOR

Item	Description	Qty	Unit	Rate (KShs)	Amount (KShs)
1 NO. MEETING ROOM					
Video Equipment					
1	Web Conferencing Camera complete with Surface Mount Accessories and as described in the Particular Specifications.	1	No.		
2	60W LED Tripod Portable Daylights as described in the particular specifications.	1	No.		
3	65", 4k UHD, LED smart android screen with teleconferencing capabilities complete with mounting accessories as samsung/Sony/LG or equal and approved equivalent	1	No.		
Audio Equipment					
4	Digital Conference System as Shure DDS 5900 or approved equivalent.				
	i) Delegate Units with built in Loudspeaker, Channel Selector and Headphone Jack complete with 1 No. Headphone and 63cm Gooseneck Microphone as described in the Particular Specifications as Shure or approved equivalent.	30	No.		
	ii) Chariman Unit with built in Loudspeaker, 3.5" Touch Screen, Channel Selector and 2 No. Headphone Jacks complete with Headphones and 63cm Gooseneck Microphone as described in the Particular Specifications as Shure or approved equivalent.	1	No.		
	iii) Base Unit as described in the Particular Specifications.	1	No.		
5	Column Speakers complete with mounting brackets as Shure or approved equivalent.	6	No.		
Presentation Equipment					
6	Projector as described in the particular specifications.	1	No.		
7	Motorized Projection Screen as described in the Particular Specifications.	1	No.		
Sub Total Carried Forward to The Next Page					

Item	Description	Qty	Unit	Rate (Ksh.)	Amount (Ksh.)
	Sub-total carried forward from the previous page				
8	Ceiling Mount Projector Lift as described in the Particular Specifications.	1	No.		
9	Flushmount Table Top Units as described in the Particular Specifications.	1	No.		
10	Medium Duty Laser Presenter Pointer	1	No.		
11	Dual Channel Presentation System with 2 No. HS5 Headset Microphones with Locking Connectors as Samson Concert 288 or approved equivalent.	1	No.		
12	Dual Channel Presentation System with 2 No. Q6 Dynamic Microphone Handheld Capsules as Samson Concert 288 or approved equivalent.	1	No.		
13	Provide for interconnection between equipment, Audio and output devices using appropriate connectos and cables to the Digital Conference System	1	Lot		
A	Sub Total for 1 No. conference centre				
B	Sub Total for 3 No. conference centre and E-learning centre	4	X	A Above	
	CONTROL ROOM				
	Video Equipment				
14	10 Input, Multi-View Screen Output, 3G-SDI Video Switcher with Integrated Robotic Camera Control and Web Streaming as Sony Anycastr Station or approved equivalent.	1	No.		
15	Video Switcher Interface as Kramer or approved Equivalent	1	No.		
16	Video Digital Amplifier as Kramer or approved equivalent.	1	No.		
17	Matrix Scaler Switcher as Kramer or approved equivalent.	1	No.		
	Sub Total Carried Forward to The Next Page				

Item	Description	Qty	Unit	Rate (Ksh.)	Amount (Ksh.)
	Sub-total carried forward from the previous page				
18	32" LED Monitor complete with Mounting Brackets as described in the particular specifications.	1	No.		
19	DVD Player/Recorder as Sony or approved equivalent.	1	No.		
20	DV-Cam Player/Recorder as Sony or approved equivalent.	1	No.		
21	Network Video Server as described in the Particular Specifications.	1	No.		
22	Character Generator as Datavideo CG-100 or approved equivalent.	1	No.		
23	Equipment Housing				
24	9U wall mounted metal cabinet/ with glass door complete with Cable Managers, fans, power outlet points, grounding kits and castors.	1	No		
25	24 Port Patch panel as Siemon or approved equivalent.	2	No.		
26	Cable Managers as Siemon or approved Equivalent.	1	No.		
27	240V, 50Hz, 5000VA, Rack Mountable Double Conversion APC smart un-interrupted power	1	No.		
28	Printed Self Laminated Wrap Cable Markers to be installed at both cable ends.	50	No.		
29	8 Port Fibre Optic Patch Panel as Siemon or approved equivalent.	1	No.		
30	SFP Fibre Modules as CISCO or approved equivalent.	2	No.		
31	3M Fibre Optic Patch Cords as Siemon or approved equivalent.	8	No.		
32	24 Port Access Switch as described in the particular specifications as CISCO or approved equivalent	2	No.		
33	Screened Armoured 8 Core Multimode Fibre Optic Cable as Siemon or approved equivalent from the Access Switches to the Core Switch.	100	LM		
34	16GB RAM, 2TB HDD, Intel Xeon or latest Desktop Computer as HP Z600 or approved equivalent.	1	No.		
	Sub Total Carried Forward to The Next Page				

Item	Description	Qty	Unit	Rate (Ksh.)	Amount (Ksh.)
	Sub-total carried forward from the previous page				
	Editing/Recording Equipment				
35	Recording Machine as Sony HVRM35U or approved equivalent.	1	No.		
36	Final cut editing workstations (Mac computers or equivalent)	2	No.		
37	32" LCD Monitor as Sony or approved equivalent.	2	No.		
38	Speakers/Audio Monitors + Subwoofer as Sony or approved equivalent.	2	No.		
39	Headphones as Sony or approved equivalent.	2	No.		
40	Editing Software's complete with Perpetual Licences for 2 No. Users as Final Cut Pro X or	1	Item		
41	Transcription Software complete with Perpetual Licences for 2 No. Users as Express Scribe or Approved Equivalent	1	Item		
42	Professional Three Pedal Foot Controller compatible with Item 27 above	2	No.		
	INSTALLATION CABLES				
43	Triax Cable	150	LM		
44	HDMI Cable	300	LM		
45	Power Cables	150	LM		
46	CAT 6A STP Cable	300	LM		
47	Connectors, Splitters, other Accessories	1	Lot		
48	Any Other item necessary to complete the installation list below: a) b) c) d) e) f)				
	Total Amount Carried Forward to Price Summary Page				

ENGINEER'S STATIONERY

Item	Description	Qty	Unit	Rate (KShs)	Amount (KShs)
	<i>Supply, Install, Test and Commission as per BS 7671:2008 the following as described below:</i>				
1	Toner cartridge Q5949A for HP medium duty laser jet printer	5	No.		
2	Toner cartridge Q2613A for HP medium duty laser jet printer	5	No.		
3	Laptop Core i7, 16GB Memory, 512 SSD Storage 15" Diagonal Full HD Touch Display as HP Elitebook 1040 G4 Notebook PC.	1	No.		
4	Photocopying papers size A4, 80g/cm ³ white - 500 sheets	20	Ream		
5	Letter head quality paper as classic or equal and approved - blue 80g/cm ³	10	Ream		
6	Tracing paper white 105/110 gms, 1000x175m long	10	Rolls		
7	Ammonia paper - blue 0.75 x 20m long as "Neodiazon" or approved equivalent.	10	Rolls		
8	Plotting paper- white 0.75 x 20m long	10	Rolls		
Total Amount Carried Forward to Summary Page					

PROVISIONAL SUMS

Item	Description	Qty	Unit	Rate (KShs)	Amount (KShs)
1	Allow for a provisional sum of Ksh. 250,000 for CPD Training for Electrical Engineers	1	Item		
2	Allow for V.A.T, profit and attendance on item 1 above%	1	Item		
3	Contingency Allow a Provisional Sum of Kenya Shillings Kshs. 500,000/- contingency to be used at the discretion of the Project Manager	1	Item		
4	Allow for V.A.T, profit and attendance on item 3 above%	1	Item		
5	Allow for a provisional sum of Ksh. 100,000 for Training of 2 No. Conference Technicians	1	Item		
6	Allow for V.A.T, profit and attendance on item 5 above%	1	Item		
Total Amount Carried Forward to Summary Page					

SUMMARY PAGE

Item	Description	Cost (Kshs)
1	Sub-total for Bill 2, Audio visual Installation works brought forward from Page 82	
2	Sub-total for Bill 3, Engineers stationery brought forward from Page 83	
3	Sub-total for Bill 4, Provisional sums brought forward from Page 84	
	TOTAL AMOUNT FOR AUDIO VISUAL INSTALLATION WORKS CARRIED FORWARD TO GRAND SUMMARY PAGE	

BILL NO. 2: C). SCHEDULE NO. 1: IP-CCTV INSTALLATION WORKS - BASEMENT

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Supply, Install, Program, Test and Commission the following :-				
	IP-CCTV SURVEILLANCE SYSTEM CAMERAS				
1.01	3Megapixel resolution Network IR INDOOR Dome Day & Night Camera; as specified in the technical specifications.	5	No.		
1.02	3Megapixel resolution Weatherproof Network IR OUTDOOR BULLET built-in IR LEDs Camera; as specified in the technical specifications.	4	No.		
1.03	2Megapixel resolution Full HD 32x Network IR PTZ Dome Camera; as specified in the technical specifications.	1	No.		
1.04	PTZ Control Joystick (3-axis twist zoom)	1	No.		
1.05	ACTIVE COMPONENTS				
1.06	24 Port Edgeswitch with POE as specified in the technical specifications.	1	No.		
1.07	Power Distribution Units (PDU) 6/8 way Surge Protected /Triplite Voltage Regulator	2	No.		
1.08	BACKBONE CABLING AND GENERAL REQUIREMENTS				
1.09	Multi Mode Fiber Optic 8 Core Cable (Armoured) for interlinking other Floors to Server Room complete with connectors to Active Components and all terminations to active equipment i.e., Floor Edge Switch.	100	Lm.		
1.10	SFP Fibre Modules as CISCO or approved equivalent.	4	No.		
1.11	SC-SC fibre Patch Cord.	22	No.		
1.12	Veracity OUTREACH MAX TX Outdoor Ethernet and PoE Ethernet	3	No.		
1.13	CABINETS				
1.14	32U Free standing equipment and server cabinet with lockable door, low noise (low Db) fans and power outlet sockets (Additional 6-Way power extension cable, surge protected within the cabinet).	1	No.		
1.15	24 Port Fiber Optic Patch Panel as Siemon or its equal and approved equivalent.	1	No.		
1.16	24 Port UTP Patch Panel as Siemon or its equal and approved equivalent C/W all the necessary accessories.	2	No.		
1.17	240V, 50Hz, 2.2KVA, Rack Mountable Double Conversion APC smart un-interrupted power supply unit (UPS) TRUE online INCLUDING Batteries with USB and Serial Port or an approved equivalent.	2	No.		
1.18	External CCTV camera pole -3 inches_Diameter	5	No.		
1.19	450mm x 50mm deep Deep Perfotrated GI cable tray complete with all accessories As Manufactured by Power Technics or approved equivalent.	40	Lm.		
1.20	Grounding and bounding kit complete with 50mm diameter copper bounding bar and 6mm thick green and yellow wire. The Earthing of the system is to be to the approval of the Engineer.	2	Lot		
	Basement Floor Total C/F to IP-CCTV Installation Work's Price Summary Page				

SCHEDULE NO. 2: IP-CCTV INSTALLATION WORKS - GROUND FLOOR

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Supply, Install, Program, Test and Commission the following :-				
	IP-CCTV SURVEILLANCE SYSTEM CAMERAS				
2.01	3Megapixel resolution Network IR INDOOR Dome Day & Night Camera; as specified in the technical specifications.	6	No.		
2.02	3Megapixel resolution Vandal-Resistant Network Dome Camera; as specified in the technical specifications.	3	No.		
2.03	3Megapixel resolution Weatherproof Network IR OUTDOOR BULLET built-in IR LEDs Camera; as specified in the technical specifications.	4	No.		
2.04	2Megapixel resolution Full HD 32x Network IR PTZ Dome Camera; as specified in the technical specifications.	1	No.		
2.05	PTZ Control Joystick (3-axis twist zoom)	2	No.		
2.06	ACTIVE COMPONENTS				
2.07	24 Port Edgeswitch with POE as specified in the technical specifications.	1	No.		
2.08	Power Distribution Units (PDU) 6/8 way Surge Protected /Triplite Voltage Regulator	2	No.		
2.09	BACKBONE CABLING AND GENERAL REQUIREMENTS				
2.10	Multi Mode Fiber Optic 8 Core Cable (Armoured) for interlinking other Floors to Server Room complete with connectors to Active Components and all terminations to active equipment i.e., Floor Edge Switch.	100	Lm.		
2.11	SFP Fibre Modules as CISCO or approved equivalent.	4	No.		
2.12	SC-SC fibre Patch Cord.	22	No.		
2.13	Veracity OUTREACH MAX TX Outdoor Ethernet and PoE Ethernet	3	No.		
2.14	CABINETS				
2.15	42U Free standing equipment and server cabinet with lockable door, low noise (low Db) fans and power outlet sockets (Additional 6-Way power extension cable, surge protected within the cabinet).	1	No.		
2.16	Ditto but 22U cabinet.	1	No.		
2.17	24 Port Fiber Optic Patch Panel as Siemon or its equal and approved equivalent.	1	No.		
2.18	24 Port UTP Patch Panel as Siemon or its equal and approved equivalent C/W all the necessary accessories.	2	No.		
2.19	240V, 50Hz, 2.2KVA, Rack Mountable Double Conversion APC smart un-interrupted power supply unit (UPS) TRUE online INCLUDING Batteries with USB and Serial Port or an approved equivalent.	2	No.		
2.20	External CCTV camera pole -3 inches_Diameter	4	No.		
2.21	450mm x 50mm deep Deep Perfotrated GI cable tray complete with all accessories As Manufactured by Power Technics or approved equivalent.	40	Lm.		
2.22	Grounding and bounding kit complete with 50mm diameter copper bounding bar and 6mm thick green and yellow wire. The Earthing of the system is to be to the approval of the Engineer.	2	Lot		
Sub-Total C/F to Next Page					

SCHEDULE NO. 2: IP-CCTV INSTALLATION WORKS - GROUND FLOOR CONTINUED.....

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Sub-Total B/F from Previous Page				
	CABLING				
2.23	Cat 6A, UTP 4 Pair cable as Siemon or its equal and approved equivalent.	2070	Lm.		
2.24	1M, Cat 6A, UTP factory terminated Patch Cords as Siemon or its equal and approved equivalent.	25	No.		
2.25	3M, Cat 6A, UTP factory terminated Patch Cords as Siemon or its equal and approved equivalent.	25	No.		
2.26	Cat 6A, UTP Cable Manager (Organizer) as Siemon or its equal and approved equivalent C/W all the necessary accessories.	25	No.		
2.27	32mm Flexible Conduits in metres	100	Lm.		
2.28	20mm Flexible Conduits in metres	150	Lm.		
2.29	Cable Ties.	5	Item		
	SERVER SYSTEM & STORAGE				
2.30	64CH Network Video Recorder (NVR); as specified in the technical specifications.	2	No.		
2.31	10TB Surveillance SATA HDD Suitable for NVR above	2	No.		
2.32	Monitoring Client Station, intel 7 core i7, 64-bit, 16GB RAM, 8GB Video Graphics Card, 4TB HDD, Optical DVD DRIVE, Multi-Monitor Support.	2	No.		
2.33	IP Video Surveillance Management Software for viewing and Recording live video of premises with support for multi-site / multi-client monitoring (for upto 5 No. client stations).	1	No.		
2.34	40" LED Monitor, 1,920 x 1,080 resolution 600TV lines, Response Time 8ms (G to G), Panel Life 50,000hours, Contrast Ratio 5,000 : 1, HDMI, DVI, VGA, and component (CVBS common) video output, Ethernet / RS-232C remote control, Built-in speaker. (C/w wall mount bracket); 3year warranty.	2	No.		
2.35	Any other Item necessary for successful completion of this installation. (Please Itemize)				
	a)				
	b)				
	c)				
	Ground Floor's Total C/F to IP-CCTV Installation Work's Price Summary Page				

SCHEDULE NO. 3: IP-CCTV INSTALLATION WORKS - FIRST FLOOR

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Supply, Install, Program, Test and Commission the following :-				
	IP-CCTV SURVEILLANCE SYSTEM CAMERAS				
3.01	3Megapixel resolution Network IR INDOOR Dome Day & Night Camera; as specified in the technical specifications.	3	No.		
3.02	3Megapixel resolution Vandal-Resistant Network Dome Camera; as specified in the technical specifications.	2	No.		
	ACTIVE COMPONENTS				
3.03	24 Port Edge switch with POE as specified in the technical specifications.	1	No.		
3.04	Power Distribution Units (PDU) 6/8 way Surge Protected /Triplite Voltage Regulator	1	No.		
	BACKBONE CABLING AND GENERAL REQUIREMENTS				
3.05	Multi Mode Fiber Optic 8 Core Cable (Armoured) for interlinking other Floors to Server Room complete with connectors to Active Components and all terminations to active equipment i.e., Floor Edge Switch.	100	Lm.		
3.06	SFP Fibre Modules as CISCO or approved equivalent.	2	No.		
3.07	SC-SC fibre Patch Cord.	10	No.		
3.08	Veracity OUTREACH MAX TX Outdoor Ethernet and PoE Ethernet	2	No.		
	CABINETS				
3.09	22U Free standing equipment and server cabinet with lockable door, low noise (low Db) fans and power outlet sockets (Additional 6-Way power extension cable, surge protected within the cabinet).	1	No.		
3.10	24 Port UTP Patch Panel as Siemon or its equal and approved equivalent C/W all the necessary accessories.	1	No.		
3.11	240V, 50Hz, 2.2KVA, Rack Mountable Double Conversion APC smart un-interrupted power supply unit (UPS) TRUE online INCLUDING Batteries with USB and Serial Port or an approved equivalent.	1	No.		
3.12	Grounding and bounding kit complete with 50mm diameter copper bounding bar and 6mm thick green and yellow wire. The Earthing of the system is to be to the approval of the Engineer.	1	Lot		
	CABLING				
3.13	Cat 6A, UTP 4 Pair cable as Siemon or its equal and approved equivalent.	700	Lm.		
3.14	1M, Cat 6A, UTP factory terminated Patch Cords as Siemon or its equal and approved equivalent.	10	No.		
3.15	3M, Cat 6A, UTP factory terminated Patch Cords as Siemon or its equal and approved equivalent.	10	No.		
3.16	Cat 6A, UTP Cable Manager (Organizer) as Siemon or its equal and approved equivalent C/W all the necessary accessories.	2	No.		
3.17	32mm Flexible Conduits in metres	100	Lm.		
3.18	20mm Flexible Conduits in metres	120	Lm.		
3.19	Cable Ties.	1	Item		
3.20	10TB Surveillance SATA HDD Suitable for NVR.	2	No.		
3.21	Any other Item necessary for successful completion of this installation. (Please Itemize)				
	a)				
	b)				
First Floor Total C/F to IP-CCTV Installation Work's Price Summary Page					

SCHEDULE NO. 4: IP-CCTV INSTALLATION WORKS - SECOND FLOOR

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Supply, Install, Program, Test and Commission the following :-				
	IP-CCTV SURVEILLANCE SYSTEM CAMERAS				
4.01	3Megapixel resolution Network IR INDOOR Dome Day & Night Camera; as specified in the technical specifications.	3	No.		
4.02	3Megapixel resolution Vandal-Resistant Network Dome Camera; as specified in the technical specifications.	2	No.		
	ACTIVE COMPONENTS				
4.03	24 Port Edge switch with POE as specified in the technical specifications.	1	No.		
4.04	Power Distribution Units (PDU) 6/8 way Surge Protected /Triplite Voltage Regulator	1	No.		
	BACKBONE CABLING AND GENERAL REQUIREMENTS				
4.05	Multi Mode Fiber Optic 8 Core Cable (Armoured) for interlinking other Floors to Server Room complete with connectors to Active Components and all terminations to active equipment i.e., Floor Edge Switch.	100	Lm.		
4.06	SFP Fibre Modules as CISCO or approved equivalent.	2	No.		
4.07	SC-SC fibre Patch Cord.	10	No.		
4.08	Veracity OUTREACH MAX TX Outdoor Ethernet and PoE Ethernet	2	No.		
	CABINETS				
4.09	22U Free standing equipment and server cabinet with lockable door, low noise (low Db) fans and power outlet sockets (Additional 6-Way power extension cable, surge protected within the cabinet).	1	No.		
4.10	24 Port UTP Patch Panel as Siemon or its equal and approved equivalent C/W all the necessary accessories.	1	No.		
4.11	240V, 50Hz, 2.2KVA, Rack Mountable Double Conversion APC smart un-interrupted power supply unit (UPS) TRUE online INCLUDING Batteries with USB and Serial Port or an approved equivalent.	1	No.		
4.12	450mm x 50mm deep Deep Perfotrated GI cable tray complete with all accessories As Manufactured by Power Technics or approved equivalent.	60	Lm.		
4.13	Grounding and bounding kit complete with 50mm diameter copper bounding bar and 6mm thick green and yellow wire. The Earthing of the system is to be to the approval of the Engineer.	1	Lot		
	CABLING				
4.14	Cat 6A, UTP 4 Pair cable as Siemon or its equal and approved equivalent.	700	Lm.		
4.15	1M, Cat 6A, UTP factory terminated Patch Cords as Siemon or its equal and approved equivalent.	10	No.		
4.16	3M, Cat 6A, UTP factory terminated Patch Cords as Siemon or its equal and approved equivalent.	10	No.		
4.17	Cat 6A, UTP Cable Manager (Organizer) as Siemon or its equal and approved equivalent C/W all the necessary accessories.	2	No.		
4.18	32mm Flexible Conduits in metres	100	Lm.		
4.19	20mm Flexible Conduits in metres	120	Lm.		
4.20	Cable Ties.	1	Item		
4.21	10TB Surveillance SATA HDD Suitable for NVR ABOVE.	2	No.		
4.22	Any other Item necessary for successful completion of this installation. (Please Itemize)				
	a) b)				
Second Floor's Total C/F to IP-CCTV Installation Work's Price Summary Page					

SCHEDULE NO. 5: IP-CCTV INSTALLATION WORKS - THIRD FLOOR

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Supply, Install, Program, Test and Commission the following :-				
	IP-CCTV SURVEILLANCE SYSTEM CAMERAS				
5.01	3Megapixel resolution Network IR INDOOR Dome Day & Night Camera; as specified in the technical specifications.	3	No.		
5.02	3Megapixel resolution Vandal-Resistant Network Dome Camera; as specified in the technical specifications.	2	No.		
5.03	2Megapixel (1920 x 1080) resolution Full HD 32x Network IR PTZ Dome Camera; as specified in the technical specifications.	1	No.		
5.04	ACTIVE COMPONENTS				
5.05	Active Network Devices CORE Network Switches as specified in the technical specifications.	1	No.		
5.06	24 Port Edge switch with POE as specified in the technical specifications.	1	No.		
5.07	Power Distribution Units (PDU) 6/8 way Surge Protected /Triplite Voltage Regulator	3	No.		
5.08	BACKBONE CABLING AND GENERAL REQUIREMENTS				
5.09	Multi Mode Fiber Optic 8 Core Cable (Armoured) for interlinking other Floors to Server Room complete with connectors to Active Components and all terminations to active equipment i.e., Floor Edge Switch.	100	Lm.		
5.10	SFP Fibre Modules as CISCO or approved equivalent.	12	No.		
5.11	SC-SC fibre Patch Cord.	10	No.		
5.12	Veracity OUTREACH MAX TX Outdoor Ethernet and PoE Ethernet	2	No.		
5.13	CABINETS				
5.14	42U Free standing equipment and server cabinet with lockable door, low noise (low Db) fans and power outlet sockets (Additional 6-Way power extension cable, surge protected within the cabinet).	1	No.		
5.15	Ditto but 22U cabinet.	1	No.		
5.16	24 Port Fiber Optic Patch Panel as Siemon or its equal and approved equivalent.	2	No.		
5.17	24 Port UTP Patch Panel as Siemon or its equal and approved equivalent C/W all the necessary accessories.	2	No.		
5.18	240V, 50Hz, 5KVA, Rack Mountable Double Conversion APC smart un-interrupted power supply unit (UPS) TRUE online INCLUDING Batteries with USB and Serial Port or an approved equivalent.	2	No.		
5.19	240V, 50Hz, 2.2KVA, Rack Mountable Double Conversion APC smart un-interrupted power supply unit (UPS) TRUE online INCLUDING Batteries with USB and Serial Port or an approved equivalent.	1	No.		
5.20	450mm x 50mm deep Deep Perfotrated GI cable tray complete with all accessories As Manufactured by Power Technics or approved equivalent.	20	Lm.		
5.21	Grounding and bounding kit complete with 50mm diameter copper bounding bar and 6mm thick green and yellow wire. The Earthing of the system is to be to the approval of the Engineer.	1	Lot		
	Sub-Total C/F to Next Page				

SCHEDULE NO. 6: IP-CCTV INSTALLATION WORKS - THIRD FLOOR CONTINUED.....

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Sub-Total B/F from Previous Page				
	CABLING				
5.22	Cat 6A, UTP 4 Pair cable as Siemon or its equal and approved equivalent.	720	Lm.		
5.23	1M, Cat 6A, UTP factory terminated Patch Cords as Siemon or its equal and approved equivalent.	100	No.		
5.24	3M, Cat 6A, UTP factory terminated Patch Cords as Siemon or its equal and approved equivalent.	12	No.		
5.25	Cat 6A, UTP Cable Manager (Organizer) as Siemon or its equal and approved equivalent C/W all the necessary accessories.	5	No.		
5.26	32mm Flexible Conduits in metres	100	Lm.		
5.27	20mm Flexible Conduits in metres	150	Lm.		
5.28	Cable Ties.	5	Item		
	SERVER SYSTEM & STORAGE				
5.29	64 Channel 400Mbps Network video recorder (NVR) with minimum 48TB 12 Hot swap HDDs internal video storage (RAID 6), Redundant hot swap power supply, Embedded Linux Operating System, built in DVD writer, 4 X Gigabit Ethernet connectivity, minimum 5 concurrent users via remote viewing software, 4 relay outputs and 8 alarm inputs, 2-way audio communication with G.711 & G.726 compression. (No IP Camera Licenses required) 3year warranty.	2	No.		
5.30	10TB Surveillance SATA HDD Suitable for NVR ABOVE.	5	No.		
5.31	Monitoring Client Station, intel 7 corei7, 64-bit, 16GB RAM, 8GB Video Graphics Card, 4TB HDD, Optical DVD DRIVE, Multi-Monitor Support.	2	No.		
5.31	Central IP Video Surveillance Management Software for viewing and Recording live video of premises with support for multi-site / multi-client monitoring (for upto 5 No. client stations).	1	No.		
5.32	40" LED Monitor, 1,920 x 1,080 resolution 600TV lines, Response Time 8ms (G to G), Panel Life 50,000hours, Contrast Ratio 5,000 : 1, HDMI, DVI, VGA, and component (CVBS common) video output, Ethernet / RS-232C remote control, Built-in speaker. (C/w wall mount bracket); 3year warranty.	2	No.		
5.32	32" LED Monitor, 1,920 x 1,080 resolution 600TV lines, Response Time 8ms (G to G), Panel Life 50,000hours, Contrast Ratio 5,000 : 1, HDMI, DVI, VGA, and component (CVBS common) video output, Ethernet / RS-232C remote control, Built-in speaker. (C/w wall mount bracket); 3year warranty.	2	No.		
5.33	Any other Item necessary for successful completion of this installation. (Please Itemize) a) b) c) d)				
	Third Floor's Total C/F to IP-CCTV Installation Work's Price Summary Page				

SCHEDULE NO. 6: IP-CCTV INSTALLATION WORKS - FOURTH FLOOR

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	Supply, Install, Program, Test and Commission the following :-				
	IP-CCTV SURVEILLANCE SYSTEM CAMERAS				
6.01	3Megapixel resolution Network IR INDOOR Dome Day & Night Camera; as specified in the technical specifications.	3	No.		
6.02	3Megapixel resolution Vandal-Resistant Network Dome Camera; as specified in the technical specifications.	1	No.		
6.03	2Megapixel resolution Full HD 32x Network IR PTZ Dome Camera; as specified in the technical specifications.	1	No.		
6.04	ACTIVE COMPONENTS				
6.05	24 Port Edge switch with POE	1	No.		
6.06	Power Distribution Units (PDU) 6/8 way Surge Protected /Triplite Voltage Regulator	1	No.		
	BACKBONE CABLING AND GENERAL REQUIREMENTS				
6.07	Multi Mode Fiber Optic 8 Core Cable (Armoured) for interlinking other Floors to Server Room complete with connectors to Active Components and all terminations to active equipment i.e., Floor Edge Switch.	100	Lm.		
6.08	SFP Fibre Modules as CISCO or approved equivalent.	2	No.		
6.08	SC-SC fibre Patch Cord.	4	No.		
6.09	Veracity OUTREACH MAX TX Outdoor Ethernet and PoE Ethernet	2	No.		
	CABINETS				
6.10	22U Free standing equipment and server cabinet with lockable door, low noise (low Db) fans and power outlet sockets (Additional 6-Way power extension cable, surge protected within the cabinet).	1	No.		
6.11	24 Port UTP Patch Panel as Siemon or its equal and approved equivalent C/W all the necessary accessories.	1	No.		
6.12	240V, 50Hz, 2.2KVA, Rack Mountable Double Conversion APC smart un-interrupted power supply unit (UPS) TRUE online INCLUDING Batteries with USB and Serial Port or an approved equivalent.	1	No.		
6.12	450mm x 50mm deep Deep Perfotrated GI cable tray complete with all accessories As Manufactured by Power Technics or approved equivalent.	20	Lm.		
6.13	Grounding and bounding kit complete with 50mm diameter copper bounding bar and 6mm thick green and yellow wire. The Earthing of the system is to be to the approval of the Engineer.	1	Lot		
	CABLING				
6.14	Cat 6A, UTP 4 Pair cable as Siemon or its equal and approved equivalent.	700	Lm.		
6.15	1M, Cat 6A, UTP factory terminated Patch Cords as Siemon or its equal and approved equivalent.	9	No.		
6.16	3M, Cat 6A, UTP factory terminated Patch Cords as Siemon or its equal and approved equivalent.	9	No.		
6.17	Cat 6A, UTP Cable Manager (Organizer) as Siemon or its equal and approved equivalent C/W all the necessary accessories.	1	No.		
6.18	32mm Flexible Conduits in metres	100	Lm.		
6.19	20mm Flexible Conduits in metres	120	Lm.		
6.20	Cable Ties.	1	Item		
6.21	10TB Surveillance SATA HDD Suitable for NVR ABOVE.	2	No.		
6.22	Any other Item necessary for successful completion of this installation. (Please Itemize)				
a)					
	Fourth Floor's Total C/F to IP-CCTV Installation Work's Price Summary Page				

SCHEDULE 7: ACCESS CONTROL SYSTEM INSTALLATIONS

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS
	Supply, Install, Test and commission the following:				
7.01	IP Door input controller interface unit with twenty input and two output as described in particular specifications	12	No.		
7.02	A 300Kg- Force magnetic door lock	12	No.		
7.03	Proximity card reader Master with Biometric and keypad functionalities as specified in particular specifications	12	No.		
7.04	Proximity card reader Slave with Biometric and keypad functionalities as specified in particular specifications	12	No.		
7.05	A sturdy door exit button/switch	12	No.		
7.06	Access control door Power supply module as specified in particular specifications	12	No.		
7.07	Proximity card reader containing photographs of individual employees	100	No.		
7.08	Wire the entire access control system using 12 core 1.5mm ² fire resistance cable	750	No.		
7.09	Access control software module c/w Access Control Alarm and Event Monitoring, Central Station Operator Controls, Photo-ID Badging Management, Intrusion Integration with CCTV system, Customized reports Generation capabilities, Staff attendance Reports (Installed in the Workstation equipment)	1	No.		
7.10	Allow for software configuration of the system to client's requirements Programming, testing and commissioning.	1	Item.		
7.11	Override switch	12	No.		
7.12	Emergency Break glass	12	No.		
7.13	Allow for any other items necessary to complete installation of the access control system (give breakdown and cost as part of the bills of quantities) i) ii) iii) iv)				
Total For Access Control System C/F to Summary Page					

PRICE SUMMARY PAGE

ITEM	DESCRIPTION	AMOUNT (KSHS)
1.00	TOTAL FOR SCHEDULE NO. 2: BASEMENT B/F FROM PAGE 86	
2.00	TOTAL FOR GROUND FLOOR B/F FROM PAGE 88	
3.00	TOTAL FOR FIRST FLOOR B/F FROM PAGE 89	
4.00	TOTAL FOR SECOND FLOOR B/F FROM PAGE 90	
5.00	TOTAL FOR THIRD FLOOR B/F FROM PAGE 92	
6.00	TOTAL FOR FOURTH FLOOR B/F FROM PAGE 93	
7.00	TOTAL FOR ACCESS CONTROL SYSTEM B/F FROM PAGE 94	
8.00	TOTAL FOR IP-CCTV AND ACCESS CONTROL INSTALLATION WORKS C/F TO GRAND SUMMARY PAGE	

Bill No. 3: Schedule of Daywork Rates - Labor

<i>Itemno.</i>	<i>Description</i>	<i>Unit</i>	<i>Nominal quantity</i>	<i>Rate</i>	<i>Amount</i>
	Subtotal				
	Allow ____ percent ^a of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 3 (b) above.				
	Total for Daywork (carried forward to Daywork Summary, p.____)				

a. To be entered by the Tenderer.

Bill No. 4: Schedule of Daywork Rates - Materials

<i>Itemno.</i>	<i>Description</i>	<i>Unit</i>	<i>Nominal quantity</i>	<i>Rate</i>	<i>Extended amount</i>
	Subtotal				
	AllowPercentage of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 3 (b) above				

a. To be entered by the Tenderer.

Bill No. 5: Schedule of Dayworks Rates - Contractor's Equipment

<i>Itemno.</i>	<i>Description</i>	<i>Nominal quantity (hours)</i>	<i>Basic hourly rental rate</i>	<i>Extended amount</i>
	Allow ____ percent ^a of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 5 above.			
Total for Daywork: Contractor's Equipment (carried forward to Daywork Summary, p. ____)				

a. To be entered by the Tenderer.

Bill No. 6: Day work Summary

	<i>Amount^a</i>	<i>% Foreign</i>	<i>Currency</i>
1.Total for Daywork:Labor			
2.Total for Daywork:Materials			
3.Total for Daywork:Contractor's Equipment			
Total for Daywork (Provisional Sum) (carried forward to Summary of Bills of Quantities, p. ____)			

Bill No. 7: Provisional Sums

<i>Billno.</i>	<i>Itemno.</i>	<i>Description</i>	<i>Amount</i>
1			
2			
3			
4			
etc.			
Total for Specified Provisional Sums (carried forward to Grand Summary)			

GRAND SUMMARY

SUMMARY ITEMS	<i>Page</i>	<i>Amount</i>
BillNo1:Preliminary Items		
BillNo2:Work Items		
Bill No 3: Daywork Summary		
Bill No 4: Provisional Sums		
Subtotal of Bills No 1-4		
Allow for any Discounts ⁱ		
TOTAL TENDER PRICE Carried forward to Form of Tender		

(i) If a percentage used, it should be indicated on which Bill No. items but on Bill No.4 – Provisional Sums.

SECTION VI – SPECIFICATIONS

GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

- 2.1 General
- 2.2 Standard of Materials
- 2.3 Workmanship
- 2.4 Procurement of Materials
- 2.5 Shop Drawings
- 2.6 Record Drawings
- 2.7 Regulations and Standards
- 2.8 Setting out Works
- 2.9 Testing on Site

2.1 GENERAL

This specification is to be read in conjunction with any other information herein issued with it. Bills of quantities and schedule of unit rates shall be the basis of all additions and omissions during the progress of the works.

2.2 STANDARD OF MATERIALS

Where the material and equipment are specifically described and named in the Specification followed by approved equal, they are so named or described for the purpose of establishing a standard to which the contractor shall adhere.

Should the contractor install any material not specified herein before receiving approval from the proper authorities, the Engineer shall direct the contractor to remove the material in question immediately. The fact that this material has been installed shall have no bearing or influence on the decision by the Engineer.

All materials condemned by the Engineer as not approved for use, are to be removed from the premises and suitable materials delivered and installed in their place at the expense of the Contractor. All materials required for the works shall be from branded manufacturers, and shall be new and the best of the respective kind and shall be of a uniform pattern.

2.3 WORKMANSHIP

The workmanship and method of installation shall conform to the best standard practice. All work shall be performed by a skilled tradesman and to the satisfaction of the Engineer. Helpers shall have qualified supervision.

Any work that does not in the opinion of the Engineer conform to the best standard practice will be removed and reinstated at the contractor's expense.

Permits, Certificates or Licenses must be held by all tradesmen for the type of work; in which they are involved where such permits, certificates or licenses exist under Government legislation.

2.4 PROCUREMENT OF MATERIALS

The sub-contractor is advised that no assistance can be given in the procurement or allotment of any materials or products to be used in and necessary for the construction and completion of the work.

Sub-contractors are warned that they must make their own arrangements for the supply of materials and/or products specified or required.

2.5 SHOP DRAWINGS

Before manufacture or Fabrication is commenced the sub-contractor shall submit Two copies of detailed drawings of all control pillars, meter cubicles, medium voltage switchboards including their components showing all pertinent information including sizes, capacities, construction details, etc., as may be required to determine the suitability of the equipment for the approval of the Engineer. Approval of the detailed drawings shall not relieve the sub-contractor of the full responsibility of errors or the necessity of checking the drawings himself or of furnishing the materials and equipment and performing the work required by the plans and specifications.

2.6 RECORD DRAWINGS

These diagrams and drawings shall show the completed installation including sizes, runs and arrangements of the installation. The drawings shall be to scale not less than 1:50 and shall include plan views and section.

The drawings shall include all the details which may be useful in the operation, maintenance or subsequent modifications or extensions to the installation.

Three sets of diagrams and drawings shall be provided, all to the approval of the Engineer.

One coloured set of line diagrams relating to operating and maintenance instructions shall be framed and, mounted in a suitable location.

2.7 REGULATIONS AND STANDARDS

All work executed by the contractor shall comply with the current edition of the “Regulations” for the Electrical Equipment of Buildings, issued by the Institution of Electrical Engineers, Electric Power Act, Kenya Bureau of Standards (KBS), Institution of Electrical Engineers (I.E.E) Wiring Regulations, Current recommendation of CCITT and CCIR, and with the Regulations of the Local Electricity Authority and the Communications Authority of Kenya (CA)

Where the sets of regulations appear to conflict, they shall be clarified with the Engineer.

2.8 SETTING OUT WORK

The contractor, at his own expenses, is to set out works and take all measurements and dimensions required for the erection of his materials on site; making any modifications in details as may be found necessary during the progress of the works, submitting any such modifications or alterations in detail to the Engineer before proceeding and must allow in his tender for all such modifications and for the provision of any such sketches or drawings related thereto.

2.9 TESTING ON SITE

The contractor shall conduct during and at the completion of the installation and, if required, again at the expiration of the maintenance period, tests in accordance with the relevant section of the current edition of the Regulations for the electrical equipment of buildings issued by the I.E.E of Great Britain, the Government Electrical Specifications No. 1 and No.2, Electric Supply Company’s By-Laws, Communications Commission of Kenya (CCK) requirements or any other supplementary Regulations as may be produced by the engineer.

Any faults, defects or omissions or faulty workmanship, incorrectly positioned or installed parts of the installation shall be rectified by the contractor at his own expense.

PARTICULAR AND TECHNICAL SPECIFICATIONS FOR STRUCTURED CABLING Works.

1. Location of site

The site is located in **Kaimosi Friends University, Vihiga County.**

Climate Conditions

The following climate conditions can apply at the site of the sub-contract works and all the plant, equipment, apparatus, materials and installations shall be suited for these conditions:

Maximum Temperature :	26 °C
Minimum Temperature :	14 °C
Relative humidity range:	40% - 90%
Dust in Atmosphere	: Relatively dusty conditions prevail
Longitude (approximately)	: 37° E
Latitude (approximately)	: 0° S
Altitude	: 1740 m above sea level

Extremely heavy rains fall at certain periods of the year and the sub-contractor shall be deemed to have taken account of this factor both in his process and in his planning of the execution of the contract works.

Equipment de-rating factors for the temperature and altitude shall be stated.

It is intended that ventilation and air filtration, if any shall be provided by others. It is not intended that the accommodation shall be air conditioned. Any requirements of this nature upon which the tender is conditional shall be clearly stated in the tender.

2. Extent of The Works

The works to be carried out include the supply, delivery, installation, testing, commissioning and leaving in servicing condition the Structured Cabling, IP PBX System and Automatic Access Control systems in the proposed Site as herein described in this specification. The works shall include, but not limited to the supply and installation of the following:

- Structured Cabling

3. Regulation and Standard

The works shall comply with the provisions of the following as necessary and relevant:

- ISO/IEC, CCK, ATM CENELEC 11801
- ANSI/EIA/TIA 56
- Latest Edition of IEE Regulation
- Kenya Bureau of Standards (KEBS)
- Institution of Engineering and Technology
- Current recommendation of CCITT and CC1R
- Electric Power Act and Rules made there under.

4. ELECTRICAL REQUIREMENTS

The equipment to be supplied shall be capable of being operated from 240V AC 50Hz power supply.

5. MANDATORY REQUIREMENTS

- A.** All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer's system.
- B.** All systems and components shall have been thoroughly tested and proven in actual use.
- C.** All systems and components shall be provided with the availability of a, 24-hour technical assistance program (TAP) from the manufacturer. The TAP shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge.
- D.** All systems and components shall be provided with a one-day turn around repair express and 24-hour parts replacement. The repair and parts express shall be guaranteed by the manufacturer on warranty and non-warranty items.
- E.** The supplier shall be the manufacturer, or the manufacturer appointed agent (proof to be submitted).
- F.** The Offered system has been installed and commissioned by the supplier in other locations.

PARTICULAR SPECIFICATIONS FOR STRUCTURED CABLING WORKS

1. DESCRIPTION OF THE PROJECT

The works to be carried out comprise the following;

- i) Proposed supply, installation, testing and commissioning of a structured cabling system to cater for computer data points and telephone points.
- ii) Configure and set up the structured cabling system to be used on LAN,
- iii) Produce test result, warranty certification, reports and as installed drawings. The Network will be capable of supporting approximately 150 data/voice points.
- iv) Supply, install telephone cables to interconnect the data cabinets to the IP-PBX to be located in the Server Room. The works shall include inter-wiring, programming and activating all voice points.

2. REGULATIONS

The contractor shall, in execution and completion of the works in the detailed design for which he is responsible, comply with the provisions of the following as necessary and relevant;

- a) ISO/IEC, CAK, ATM CENELEC 11801
- b) ANSI/EIA/TIA 56
- c) Latest Edition of IEE Regulation
- d) Kenya Bureau of Standards
- e) Electric Power Act and Rules made there under.

3. WORKING DRAWINGS

The Contractor shall submit to the Project Manager working drawings for the proposed system for approval. The drawings will show the locations of and identifiers for all cable routing and terminations, telecommunication outlets/connectors. Location of core switch and Edge switches.

4. NETWORK CABINETS

DATA CABINET AND ACCESSORIES RACKS TECHNICAL SPECIFICATIONS Standards: Comply with ANSI/EIA-310-D, CEA 310E, IEC60297-3		
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Product type	Ventilated rack with fans where applicable	
Construction	<ul style="list-style-type: none"> • Detachable composite structure • Material: SPCC quality cold rolled steel • Thickness: Square hole strips 2.0mm, others 1.2mm 	
Power	<ul style="list-style-type: none"> • Pre-wired 240V AC conditioned grounded power circuit • Supplied with Earth Bond Kit and Cage nuts 	

5. CABLES

i) HORIZONTAL CABLING & PATCH CORDS

	Category 6A STP 4-Pair Cable	
Item	Minimum specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	<ul style="list-style-type: none"> • STP • Solid (non-tinned) copper • Centre Isolation Member 	Construction
Jacket	8.5mm with Sequential meter markings	

ii) CAT 6A PATCH PANELS

Item	Minimum specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Industry Compliance	STANDARDS COMPLIANCE <ul style="list-style-type: none"> • IEEE 802.3af (PoE) • IEEE 802.3at (PoE+) • ANSI/TIA-1096-A 	

iii) FACE PLATES - COMPLETE WITH SINGLE MAX MODULES

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	Complete with Twin MAX RJ45 Modules <ul style="list-style-type: none"> • Double gang faceplates for each designated work area point. • UV resistant, high impact plastic 	
Wiring	T568A and T568B	
Face Plate Characteristics	<ul style="list-style-type: none"> • Single 	
	<ul style="list-style-type: none"> • Label Covers- Faceplates include pressure-release designation label covers for quick, tool-less removal • With icon/label provision • With doors/shutters • British Standard (85mm x 85mm) • White 	
Module Characteristics	<ul style="list-style-type: none"> • 1000/100/10Gbs • Backward compatible 	
Standards	<ul style="list-style-type: none"> • ISO/IEC 11801: 2002 2nd Edition (Category 6) • UL CMX • UL CMP and CSA FT6 	

6. FIBRE

i.) BACKBONE MULTIMODE FIBRE OPTIC CABLE

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	Steel Tape armoured with Glass Yarn	
Armour	Corrugated Steel Tape Armour	
Cable characteristics	<ul style="list-style-type: none"> • Support for 10GBASE-T • Low Density Polyethylene Sheath • Gel Filled Loose Buffer Tube • Level 1 Rodent Protection • Crash(N) at least 2500 • Torsion (Turns/M) not more than 5 • Multimode 	

ii.) BACKBONE FIBRE CABLING INTERCONNECT

	Rack Mount Interconnect Center (RIC)	
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	<ul style="list-style-type: none"> • Spring loaded quick-release hinges 	
	<ul style="list-style-type: none"> • Include laser-printable labels, cable ties, rack mounting hardware and pre-installed fiber management clips 	
Industry Compliance	<ul style="list-style-type: none"> • IEEE802.3ae, EMC/EMI Specifications 	

iii.) BACKBONE FIBRE CONNECT PANELS

	Fibre connect panels	
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	<ul style="list-style-type: none"> • Lanced Tabs • Front Fiber Clips • Label Holder • Rear Fiber Clips 	

Item	Minimum Specifications	Proposed Solution
Industry Compliance	Meets or exceeds IEEE802.3ae standard EMC/EMI Specifications	

iv) BACKBONE DISTRIBUTION FIBRE PATCH CORDS

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	Precision cable assembly	
Features	<ul style="list-style-type: none"> • Easy Identification- Connectors color coded per ANSI/TIA/EIA-568-B.3 • Dust Caps- Dust caps included to protect polished ferrule from dirt and damage • Polarity Connection- LC Duplexing clip for polarity correction 	
Warranty	<p>End-to-End Manufacturer's Warranty on Cabling System (<i>Attach Manufacturer's Warranty Statement</i>)</p> <p>Minimum 15 Years</p>	

7. ACTIVE DEVICES

i) SWITCH

Item	Minimum Specifications	Proposed solution
Brand	<p>State the brand, model and attach Technical Brochure (Mandatory).</p> <p>Item supplied Must currently be supported by the manufacturer and must be on sale life for not less than 5 years from date of tender.</p>	
Features	<ul style="list-style-type: none"> • 24/48 10/100/1000 Base-T port of full PoE+ capability • Uplink configuration: Modular uplink options (4 No. 10G SFP+) – 48/24 Port switch (2 No. 10G SFP+) – 16/8 Port switch • Fans: FRU redundant • AES-128 MACsec encryption • Layer 3 capabilities, including OSPF, EIGRP, ISIS, RIP, and routed access • Advanced network monitoring using Full Flexible Net Flow 	

Item	Minimum Specifications	Proposed solution
Specs	<ul style="list-style-type: none"> Virtual Networks: 4 Power input: 100 to 240VAC, 50 to 60Hz 24Port switch <ul style="list-style-type: none"> Switching capacity: 17.6 Gbps Forwarding rate: 13.1 Mpps MAC Address table size: 16K entries Mean time between failures (hours) – 429482hrs 16/8 Port switch <ul style="list-style-type: none"> Switching capacity: 12.8 Gbps Forwarding rate: 9.5 Mpps) MAC Address table size: 8K entries Mean time between failures (hours) – 330182hrs 	
RAM& accessories	<ul style="list-style-type: none"> SDRAM- 64MB Flash- 16MB 	
Support	Locally Available Technical Support Services(<i>Manufacturer's Letter of Authorization Mandatory</i>)	

ii) WIRELESS ACCESS POINT

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Features	<ul style="list-style-type: none"> Ports: LAN Gigabit Ethernet auto sensing Cabling type: Category 5e or better Antennas: Internal antennas optimized for installation on a wall or ceiling LED indicators: Power, WLAN, LAN Operating system: Linux Physical Interfaces <ul style="list-style-type: none"> Ports: 10/100/1000 Ethernet, with support for 802.3af PoE Buttons: Reset button LEDs: Power, Wireless, Ethernet Network Capabilities <ul style="list-style-type: none"> VLAN support: Yes Number of VLANs: 1 management VLAN plus 16 VLANs for SSIDs 802.1X supplicant: Yes SSID-to-VLAN mapping: Yes Auto channel selection: Yes Spanning tree: Yes Load balancing: Yes IPv6: Yes <ul style="list-style-type: none"> IPv6 host support IPv6 RADIUS, syslog, Network Time Protocol (NTP), etc. 	

	<ul style="list-style-type: none"> Layer 2 802.1Q-based VLANs, 16 active VLANs plus 1 management VLAN Quality of Service Quality of service (QoS) Wi-Fi Multimedia and Traffic Specification (WMM TSPEC) 	
Wireless	<ul style="list-style-type: none"> Frequency: WAP551: Selectable radio band (2.4 or 5 GHz) WAP561: Dual concurrent radios (2.4 and 5 GHz) WLAN: 802.11b/g/n 3x3 multiple-input multiple-output (MIMO) with 3 spatial streams 20 and 40 MHz channels PHY data rate up to 450 Mbps 802.11 dynamic frequency selection (DFS), EU version only Data rates supported 802.11a/b/g: 54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2, and 1 Mbps 802.11n: ◦ 20-MHz bandwidth: MCS 0-15 for supported data rates 	
Security	<ul style="list-style-type: none"> WPA/WPA2: Yes, including Enterprise authentication Access control Yes, management access control list (ACL) plus MAC ACL Secure management HTTPS Wi-Fi Protected Setup (WPS) Yes (soft WPS, no hardware push button) SSID broadcast: Yes Rogue access point detection: Yes 	
Mounting	<ul style="list-style-type: none"> Multiple mounting options Mounting bracket included for easy ceiling or wall mounting Physical security lock Kensington lock slot 	
Management	<ul style="list-style-type: none"> Remote management: Yes Dynamic Host Configuration Protocol (DHCP) client: Yes IPv6 host: Yes HTTP redirect: Yes 	
support	<ul style="list-style-type: none"> Locally Available Technical Support Services (<i>Manufacturer's Letter of Authorization Mandatory</i>) 	

8 IP-PBX

TECHNICAL SPECIFICATIONS		
Compliant Standards: 2014/34/EU: ATEX		
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Type Approval	Communications Authority of Kenya (CA) – Attach Certificate	
Features	<ul style="list-style-type: none"> • 224 Trunks; Physical (160); Virtual (64) • 100 Extensions; Physical (304); Virtual/ IP-PT and IP Software Phone/ SIP Extension (20) • desking features for phones in shared desks • Built-in simplified voice message • Server Connection <ul style="list-style-type: none"> -DHCP client -SNMP Agent / Alarm -SNTP client • VOIP Gateway with QSIG (Enhanced System Networking) • VOIP Extensions • PC-Based Programming • DXDP (Digital Extra Device Port) • Automatic Route Selection (ARS) • Toll Restriction • Caller ID (Name & Number) • ISDN Primary Rate Interface (PRI) with QSIG and T1 • Enhanced System Networking • Uniform Call Distribution (UCD) • Gateway is built into the DSP, no need for the IP Gateway Card • IP Address is built into the MPR, no need for an additional CTI Link Card for remote programming or integration to the phone assistant 	
Dialling	<ul style="list-style-type: none"> • host PBX access code; 10 digits, 10 entries • conference each shelf: 3-8 parties per conference (32 parties total) • coS – 64 • did/ddi table; 32 digits, 1000 entries • Multiple Subscriber number (MSn); 10 entries per iSdn-Bri port • Special carrier access code 16 digits, 100 entries 	
Conversation service	<ul style="list-style-type: none"> • Mobility services: Nomadic mode, Routing to multiple devices (Business phone, DECT or WLAN handset, PC, smartphone), One number service, User-defined routing rules. • Hot-desking/desk sharing 	

	<ul style="list-style-type: none"> • Business communications services: Call option, speed dial, Call back, call queuing, Call pickup, barge-in, Call diversion, Dynamic routing: (No answer, busy), Call recording, Paging, DISA • Conference: 3-party conference, 6-party conference, IP Conference Phone (5 legs), Conference on SIP devices (3 legs) 	
Supported phones	<ul style="list-style-type: none"> • IP Desktop Softphone: NOE/IP • SIP phones • VoIP softphone • Open Touch Conversation (OTCV): Android 	
UC services	<ul style="list-style-type: none"> • Contact management, presence, calendar sharing, chat, audio/video call, screen and file sharing; Persistent group chat with audio/ video/screen sharing conference capabilities; Audio conference up to 100 participants 	
Verticals services	<ul style="list-style-type: none"> • Directory services: Dial by name: Auto and unified modes, Universal Directory Access: External LDAP server, Integrated Directory, Common and personal directories 	
Software	<ul style="list-style-type: none"> • OS: Linux 	
Networking and topology	<ul style="list-style-type: none"> • Networking: ISVPN (T0/T2), QSIG-BC (DLT0 DLT2), Private SIP trunks, multiple SIP trunks, Automatic Route Selection (ARS): 3000 entries, time range, Least Cost Routing 	
Connectivity	<ul style="list-style-type: none"> • IPv4 • HTTP/HTTPS • VoIP: G.711, G.729, G.722, codec path through (direct RTP) QOS: TOS, DiffServ, 802.1 p/Q Direct RTP, RTP proxy, integrated software media server DTMF: In-band, RFC 2833 IETF/ RFC standards • WebRTC VOIP services over the Internet Firewall friendly port forwarding and VPN less Encrypted media, STUN/TURN • Management: Remote Access Integrated VPN IPsec ISDN (1 or 2B), call back • SIP: Public SIP trunk Private SIP trunk SIP endpoints (local users) • WLAN 	
Security	<ul style="list-style-type: none"> • User Authentication: Password 6 digits Access locked after repeated authentication errors, notification Normal/restricted modes User right to services Pin for remote access (DISA) • Certificate: Server self-signed, Import for public authority 	

	<ul style="list-style-type: none"> • WAN access: HTTP proxy compliant • SIP Authentication: RFC2617 • Traffic filtering: ARP spoofing protection SIP perimeter defense: Quarantine, blacklist, automated blacklist Connection tracking • Encryption: SSLv3 for secure HTTP HTTPS 	
Hardware CPU Board	<ul style="list-style-type: none"> • Power CPU EE (PowerPC e300): Chassis: Compact 16 VoIP DSP channel (embedded) VoIP 64 optional daughter board: 76 VoIP channels Memory Storage daughter board (MSDB): 8GB (eMMC) 	

9 IP EXECUTIVE PHONE

TECHNICAL SPECIFICATIONS		
Compliant Standards: TIA/EIA 810-B		
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key features	<ul style="list-style-type: none"> • The handset is hearing aid-compatible (HAC) • A full-duplex speakerphone. • Backlit indicators for audio path keys (Handset, Headset, and Speakerphone), select key, line keys, and message waiting • Call-history & Contact synchronization (with mobile device) • Ethernet (10/100/1000) line interface with a secondary 10/100/1000 port. • supports PoE class 1 for low power consumption 	
Protocols	<ul style="list-style-type: none"> • SIP (RFC3261, RFC3262) • Session Description Protocol (SDP) • IPv4 and IPv6 • User Datagram Protocol (UDP) (used only for Real-Time Transport Protocol [RTP] streams) • Dynamic Host Configuration Protocol (DHCP) client or static configuration • Gratuitous Address Resolution Protocol (GARP) • Domain Name System (DNS) • Secure HTTP (HTTPS) • VLAN • Real-Time Transport Protocol (RTP) • Real-Time Control Protocol (RTCP) • Switch speed auto-negotiation • Peer to Peer calling 	

Key-pad	<ul style="list-style-type: none"> • The phone has the following keys: <ul style="list-style-type: none"> ◦ Line keys ◦ Soft keys ◦ Back and release keys ◦ Four-way navigation and select keys ◦ Hold/Resume, Transfer, and Conference key ◦ Messaging, Application, and Directory key ◦ Standard keypad ◦ Volume-control toggle key • ◦ Speakerphone, headset, and mute keys 	
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10 STANDARD IP PHONE

TECHNICAL SPECIFICATIONS		
Compliant Standards: TIA/EIA 810-B		
Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key features	<ul style="list-style-type: none"> • IP Phones with LCD Display • RJ-45 Port Ethernet, MAC address (IEEE 802.3) • Preassigned phone extensions • Dial Plan • Voice and data VLANs • Ethernet (10/100/1000) line interface with a secondary 10/100/1000 port • Gigabit Adapter for Gigabit connectivity to a PC • supports PoE class 1 for low power consumption 	
Protocols	<ul style="list-style-type: none"> • SIP (RFC3261, RFC3262) • DTMF transport (RFC2833) • Peer to Peer calling 	
Key-pad	<ul style="list-style-type: none"> • 2-way speakerphone • Dual position flip stand • Four-way navigation cluster button • Three contextual soft key buttons • Quick-access Voicemail Message button • Telephony application button – to return to main telephone screen • Menu button – (options and settings access) • Contacts application – supports up to 100 entries • Call log – contains last 100 calls 	
Network and provisioning	<ul style="list-style-type: none"> • IP NOE and SIP v2 (RFC3261) 	

	<ul style="list-style-type: none"> • DHCP and static IP manual or dynamic host configuration protocol (DHCP) network setup • IEEE 802.1 AB/LLDP-MED client (automatic VLAN acquisition, PoE management, inventory information) • The phone supports CDP and 802.1Q/p standards, and can be configured with an 801.1Q VLAN header containing the VLAN ID overrides configured by the Admin VLAN ID. • The phone identifies incoming messages and categorizes them 	
Quality-of-service (QoS) options	<ul style="list-style-type: none"> • The phone supports CDP and 802.1Q/p standards, and can be configured with an 801.1Q VLAN header containing the VLAN ID overrides configured by the Admin VLAN ID. 	
Configuration options	<ul style="list-style-type: none"> • The user can configure IP address assignment statically or through the DHCP client. 	

11. ADDITIONAL NOTES

Tenderers should take note of the following

- a The network should be capable of carrying data, voice and video. QOS should be considered as part of installation and configuration of the network.
- b All active LAN equipment should be from the same manufacturer for seamless integration, management and maintenance.
- c Each floor should have a telecommunication Closet to house the necessary structured cabling components and active equipment.

12. FIELD QUALITY CONTROL

Installation personnel shall meet manufacturer's training and education requirements for implementation of extended warranty program.

13. LABELING

Use 6d if the type of termination block permits labels. Otherwise use 6e.

Use 6g if the owner does not have a standard for outlet numbering. Use 6h if required. Alter time as requested.

Labeling shall conform to ANSI/TIA/EIA-606(A) standards. In addition, provide the following:

- a. Label each outlet with permanent self-adhesive label with minimum 3/16 in. high characters.
- b. Label each cable with permanent self-adhesive label with minimum, 1/8 in. high characters, in the following locations:
 1. Inside receptacle box at the work area.
 2. Behind the communication closet patch panel or punch block.

- c. Use labels on face of data patch panels. Provide facility assignment records in a protective cover at each telecommunications closet location that is specific to the facilities terminated therein.
- d. Use color-coded labels for each termination field that conforms to ANSI/TIA/EIA-606(A) standard color codes for termination blocks.
- e. Mount termination blocks on color-coded backboards.
- f. Labels shall be machine-printed. Hand-lettered labels shall not be acceptable.
- g. Label cables, outlets, patch panels, and punch blocks with room number in which outlet is located, followed by a single letter suffix to indicate particular outlet within room, i.e., S2107A, S2107B. Indicate riser cables by an R then pair or cable number.
- h. Mark up floor plans showing outlet locations, type, and cable marking of cables. Turn these drawings over to the owner two (2) weeks prior to move in to allow the owner's personnel to connect and test owner-provided equipment in a timely fashion.
- i. Three (3) sets of as-built drawing shall be delivered to the owner within four (4) weeks of acceptance of project by the owner. A set of as-built drawings shall be provided to the owner in magnetic media form and utilizing CAD software that is acceptable to the owner. The magnetic media shall be delivered to the owner within six (6) weeks of acceptance of project by owner.

14. TESTING

Testing shall conform to ANSI/TIA/EIA-568-B.1 standard. Testing shall be accomplished using level IIe or higher field testers.

Test each pair and shield of each cable for opens, shorts, grounds, and pair reversal. Correct grounded, and reversed pairs. Examine open and shorted pairs to determine if problem is caused by improper termination. If termination is proper, tag bad pairs at both ends and note on termination sheets.

Perform testing of copper cables with tester meeting ANSI/TIA/EIA-568-B.1 requirements.

If copper backbone cable contains more than one (1) percent bad pairs, remove and replace entire cable.

If copper cables contain more than the following quantity of bad pairs, or if outer sheath damage is cause of bad pairs, remove and replace the entire cable:

CABLE SIZE	MAXIMUM BAD PAIRS
<100	1
101 to 300	1 – 3
301 to 600	3 – 6
>601	6

If horizontal cable contains bad conductors or shield, remove and replace cable.

Initially test optical cable with a light source and power meter utilizing procedures as stated in ANSI/TIA/EIA-526-14A: OFSTP-14A Optical Power Loss Measurements of Installed Multimode

Fiber Cable Plant and ANSI/TIA/EIA-526-7 Measurement of Optical Power Loss of Installed Single Mode Fiber Cable Plant. Measured results shall be plus/minus 1 dB of submitted loss budget calculations. If loss figures are outside this range, test cable with optical time domain reflectometer to determine cause of variation. Correct improper splices and replace damaged cables at no charge to the owner.

- 1) Cables shall be tested at 850 and 1300 nm for multimode optical fiber cables.
- 2) Cables shall be tested at 1310 and 1550 nm for single mode optical fibers.
- 3) Testing procedures shall utilize “Method B” – One jumper reference.
- 4) Bi-directional testing of optical fibers is required.

Perform optical time domain reflectometer (OTDR) testing on each fiber optic conductor.

Measured results shall be plus/minus 1 dB of submitted loss budget calculations.

i Submit printout for each cable tested.

ii Submit 3.5 in. disks with test results and program to view results.

Where any portion of system does not meet the specifications, correct deviation and repeat applicable testing at no additional cost.

15. BROCHURES AND TECHNICAL LITERATURE

Tenderers must enclose together with their submitted bids brochures detailing technical Literature and specifications of all the components of the structured cabling system. The brochures shall be used to evaluate the suitability of these components.

Any bid submitted without the brochures shall be considered technically non-responsive, and may subsequently be disqualified.

C. PARTICULAR AND TECHNICAL SPECIFICATIONS – AUDIO VISUAL EQUIPMENT AND TELEPRESENCE SYSTEM

1.0 SCOPE OF WORKS

The contract works shall comprise the supply, installation, testing and commissioning of a functioning modern Digital Audio Visual System that can be integrated with a Public Address System and comprising:

- a) LCD Projectors
- b) Screens
- c) Amplifier Units
- d) Wireless Microphones
- e) Speakers
- f) VHF Receiver
- g) Cabling and all the other necessary accessories
- h) Interactive white board

2.0 CLIMACTIC CONDITIONS

Mean Maximum Temperature: 25°C
Mean Minimum Temperature: 18°C
Range of Relative Humidity: 39%
Salt in the atmosphere: 0.02%
Altitude: 2000mm above sea level
Latitude/Longitude: 03° 55'N 41° 50'E
Solar Radiation, February Mean Max: 630 Langley's

3.0 MULTIMEDIA NETWORK READY LCD PROJECTORS

a) LCD Projectors at Main Board Room

Minimum of 6,000 lumens

Resolution:	XGA (1024 x 768)
Brightness:	At least 3000 ANSI Lumens
Uniformity:	85% (corner to center)
LCD Panel System:	0.63" TFT Poly x 3
Number of Pixels:	2,359,296 (786,432 x 3)
Contrast Ratio:	450:1(Lamp Mode" Auto", Image Mode" Dynamic")
Image Size (diagonal):	40" – 300"
Aspect Ratio:	4:3
Throw Distance:	4.6' – 41.3'
Zoom/Focus:	Automatic
Zoom Ratio:	1:1.2
Up/Down Ratio:	9:1
Digital Keystone Correction:	Vertical: +/- 20
Projection System:	Polarized Beam Splitter optical system
Projection Lens:	F1.65-1.81 / F0.89"-1.06"
Lens Throw Ratio:	1.72 - 2.07:1
Projection Lamp:	220W UHP
Scanning Frequency:	H Sync: 15-100kHz, V Sync: 50-100Hz
Dot Clock:	140MHz
Color System:	PAL/PAL-M/PAL-N/SECAM/NTSC/NTSC4.43
Computer Compatibility:	UXGA, WXGA, SXGA, XGA, SVGA, VGA, MAC
Sound Output:	One-piece, 1-watt Mono
Voltage:	240V AC (auto Voltage) ; 50Hz
dB Rating:	29 dB (Eco mode)

Dimensions (WxHxD): 13.2" x 3.1" x 9.4" (not including Adjustable Feet)

PC Input Terminals: D-Sub15 x 2 (1 switch able in/monitor out)
Audio x 1 (Stereo mini-jack : common)

Video Input Terminals: Composite Video (RCA x 1)
S-Video (Mini-DIN 4-pin)
R & L/mono audio (RCA x 2)
Component Video (D-Sub15 input w/optional cable)
Audio for Component Video
(stereo mini-jack : common)

Output Terminals: D-Sub15 x 1 (switchable In/monitor out)
Variable Audio (stereo mini-jack)

Service Port: Mini DIN 8-pin

Warranty: Three years parts and labor; 90 days original lamp; Quick Repair
Program under warranty

Included Accessories: I/R Remote Control; 2 AA Batteries; Owner's Manual(CD-ROM & Quick Reference Guide)
VGA Cable; Lens Cap; PIN Code Label
AC Power Supply Cord
VGA/Component Video Cable
Presentation Kit (Remote Control w/USB Infrared Receiver)
Soft Carrying Bag
Replacement Lamp

Regulatory Approvals: Complies with all relevant worldwide EMC, EMI and safety standards. The product should comply with FCC Class A, CSA C22.2 No. 950, UL 1950, cUL and IEC950 (EN60950) European Norm.

Other features to include:

- Network Capable RJ45
- 3LCD Technology
- Flexible installation-ceiling; 90 degrees upwards/downward tilts
- Dynamic detail enhancer – generates high quality images of outstanding clarity.
- Digital keystone adjustment
- Whisper quiet operation
- Horizontal/vertical picture shift
- Include Anti-Theft Projector Ceiling Mount
- Provide 200m VGA Cable

i. Enhanced Feature Set

- Progressive scan video reproduction
- 3D digital noise reduction
- User-selectable 4 or 2 lamp mode
- Motorized zoom and focus
- Motorized lens shifts (up and down, left and right)
- Picture freeze function
- "No-show" mode function
- Presentation timer
- Power management function
- Audio mute

ii. Control/Networking

- Automatic Multi-Scanning Set-up system (AMSS) (phase/tracking/position)
- USB type B
- Remote control jack
- RS232-C control port and loop-through via 9-pin D-sub terminal (in/out)

- Wired remote control
- IR remote keypad with mouse and laser pointer
- Front and rear IR receivers
- D-2
- Remote mouse control

iii. **Graphical User Interface**

- Easy set-up and intuitive multi-language on-screen displays (OSD) (English, German, French, Spanish, Italian, Portuguese, Dutch, Swedish, Chinese, Korean, Japanese)
- Direct-key status function
- Blue back display
- Standby on-screen logo display
- Picture reverse scans function (left/right, top/bottom) for front, rear and inverted projection

4.0 **PROJECTION SCREEN**

- Electric type – Motor Driven
- Wall/Ceiling mountable
- Size 4m x 3.5m viewing angle
- Matte white surface
- Black/white border
- Wall mount switch
- Optional wireless remote control

5.0 **LASER MOUSE**

The Laser Mouse is to aid in presentations when using the digital projector. It should be a combination of a Laser Pointer and Radio Mouse in a compact design

The Laser Mouse should have: -

- Laser pointer and Mouse control in one device
- Wireless connection to the PC
- Small design
- Scrolling during presentations with Microsoft PowerPoint via right and left mouse key
- Plug & Play compatible, no special driver's necessary
- Laser pointer
- Control of the mouse cursor with the thumb
- Right and left mouse key as well as a special function key
- Ultra compact USB-radio receiver with power supply via USB port

Technical data

Frequency: 433,92 MHz

Range: 10 m

USB port, compatible with Microsoft Windows 98, Me, XP and 2000

Power supply: USB receiver directly via PC, remote unit via battery (Type CR2032 DV 3V)

Dimensions: Remote unit 12,5 x 3,6 x 1,98 cm (LxWxH),

Receiver 5,75 x 2,0 x 1,0 cm (LxWxH)

Supplied with: Lasermouse, USB receiver, Battery for Lasermouse, Installation and User Manual

6.0 **CEILING LOUDSPEAKERS**

- 1 Enclosure: Bass reflex
- 2 Rated output: 60W

3. Impedance: 8 Ohm
4. Wattage: 24/36W
5. Sensitivity: 90dB
6. Frequency response: 190 – 18,000 HZ
7. Ceiling mounted

7.0 PUBLIC ADDRESS AND MONITOR LOUDSPEAKER SYSTEM

Item	Active bi-amped Public Address and Monitor	Minimum Technical specification and features
1,1	Power supply	100-260AC 60/50HZ
1.2	Power capacity	160 watts
1.3	Construction	Extremely light and steady enclosure
1.4	Handles	Custom horn ergonomic caring handles
1.5	Adapter	Adapter built into cabin
1.6	Design and shapes	Ideal for use in all professional audio application systems
		Asymmetrical profile use as a stage monitor
1.7	Controls	Unimpeded access to control in all application condition
1.8	2 way bi amp ed systems	Two in depended processors
1.9	Woofers	400watts rms (pwm) “pulse width modulation” Technology
1.10	HF drivers/horns	100watts rms class AB power amps
1.11	LF drives	64mm coil and a powerful ultralight neodymium magnet
1.12	HF Compression	Advance dynamic active protection of the drivers
1.14	Optimization of the acoustic response	Assuring total reliability under extreme condition (ensuring prolonged acoustic feedback)
1.15	Active electronic filters	24dB /oct
1.16	Professional control panel with	XLR/Jack input combine Neutrik
1.17	Three band equalizer	High-mid –low Preamp gain control and Master control
1.18	Impedence	8 ohms
1.19	Frequency response	40hz ---- 20khz
1.20	Electronics crossover	1.8
1.21	Sensitivity	98
1.22	Maximum SPL	125
1.23	Built in Power amplifier	2 mos Fet class AB with 2 independent Processors
1.24	Input impedance/Sensitivity	Mic 40dB/2 ohms Line 0 dB /20kohms
1.25	Connections	Combined XLR and ¼” Jack balanced Microphone /Line input and XLR for the link output
1.26	Accessories: Speaker stands	

8.0 RADIO MICROPHONE SYSTEMS

A. HAND HELD TRANSMITTERS (DYNAMIC CARDIOIDS)

Item	Hand held Transmitters (Dynamic cardioids)
	Minimum Technical specification and features
2.1	Each system should comprise of;
2.2	UHF Hand-held (vocal) wireless microphone/transmitter
2.3	64 or more selectable channel frequencies

2.4	Maximum input level; 145dB SPL
2.5	Input sensitivity control
2.6	ON /OFF Switch designed to prevent accidental activation
2.7	LED Low battery indicator
2.8	Dynamic Microphone unit cardioid
2.9	Frequency range 822—866 MHz UHF
2.10	RF Carrier power; less than 50mw
2.11	PLL Synthesizer
2.12	Maximum deviation: $\pm 40\text{kHz}$
2.13	Battery; 6LR61(9V ONE) or equivalent
2.14	Battery Life; more than 10 hours (Alkaline)
2.15	Power/Battery indicator
2.16	Antenna, $1/\lambda$ helical Antenna
2.17	Ambient temperature 10°C to 50°C .
2.18	Finish: Resin rubber coating
2.19	Accessories: Stand adopters, storage case

ITEM	UHF WIRELESS TUNER (RECEIVER)- Minimum Technical specification and features
3.1	Power: AC MAINS (using AC-DC Adapter)
3.2	Power: Consumption 250 mA (12 V DC)
3.3	Receiving Frequency: 822 –870 MHz UHF
3.4	64 channels selectable frequencies.
3.5	Receiving System: Double supper heterodyne.
3.6	Audio Output: MIC – 60 dB/ Line - 20 dB 600Ω $1/4''$ phone jack (unbalanced), XLR-3-31 type connector (balanced)
3.7	Mixing input: 20 dB $10K\Omega$ $1/4''$ phone jack (unbalanced) XLR-3-31 type connector (balanced)
3.8	Antenna Input: 75Ω BNC (Phantom powering for antenna)- 9V DC.
3.9	Receiving sensitivity: Better than 80 dB.
3.10	Indication: Audio (11 steps) RF (11 steps) ANT A/B Audio (peak).
3.11	Channel check: usable frequencies scanning.
3.12	Digital Control I/O: Usable frequencies reading, frequencies input.
3.13	Frequency response: $100 - 12\,000\text{ Hz} \pm 3\text{dB}$.
3.14	Accessories: Rack mounting brackets.
3.15	And sets of recommended spare parts

	2-IN/24-OUT AUDIO PRESS FEED (MIC/LINE SWITCHES ON 12-OUTPUTS)
B	<u>AUDIO PRESS FEED- 2-in/24-out Audio</u>
Item	Minimum technical specification and features Description-
5.1	Audio Press Feed of high quality versatile unit for conferences, meetings, courtrooms, auditoriums, etc.
5.2	A portable unit mounted in a Halliburton aluminum case.
	Specifications
5.3	Audio: Two Balanced microphone (switch able to line inputs at 10k-ohms)
5.4	Gain controls
5.5	VU Meter
	Outputs:
5.6	16 Separate Outputs Each One:
5.7	Transformer Isolated
5.8	"XLR", 1/4" Phone Jack, RCA & 3.5mm Jack
5.9	Mic/Line Switch
5.10	+18 dbm Output capability
5.11	Ground floating (Does not require ground lift)
5.12	50 Hz - 15 KHz (-2 db)
5.13	<i>50 db Channel isolation</i>
	<i>Power:</i>
5.14	<i>100-260v, 50-60 Hz, 5 Watts</i>
5.15	<i>AC & Rechargeable internal Battery</i>
	<i>Size: 10" x 12" x 5" Deep "Halliburton" Aluminium Case Weight: 8 lbs or less.</i>

A.	12- CHANNEL STEREO AUDIO MIXER
Item	Minimum Technical specification and features
4.1	4- Mono Electronically balanced Mic/ Line Channels
4.2	Featuring Neutral XLR/stereo jacks
4.3	4- Electronically unbalanced Mic Channels Featuring Neutrik XLR connectors
4.4	4- Stereo Channels
4.5	3- Band equalizers (High- Mid- Low)
4.6	1-Effects line
4.7	2-Monitor line out
4.8	1-Pan/Balance potentiometer
4.9	Channel peak indicators
4.10	Channel mute switch
4.11	16 Programmers Digital molt effects
4.12	Physically connected switching power supply unit
4.13	6.3mm stereo headphone jack.
4.14	Two independent output level control for left and right
4.15	Headphone output control
4.16	Rotary potentiometer to control level of signal sent to the master-control from each channel
4.17	Two independent monitor output level controls

11:

SPECIFICATIONS FOR WIRE-CONFERENCE/WIRELESS SYSTEM

A: System overview

- Microphone with fixed gooseneck, illuminated ring
- Loudspeaker
- Microphone button with led, to indicate request to speak or on/off status
- Fixed connecting cables with 15- pin sub – D plug or wireless
- Documentation output (Mini jack socket 3.5mm)
- To include Connection to recorders etc this should be compatibles to MCS100

B: Technical specification

- AF – Frequency response - 80 HZ-19KHZ
- Interface-RS-232 - 9-pin sub –socket for external PC or media control systems
- Two USB Interface - For external PC Connection
- Switch- Button - ON/OFF – Switch.
- Reset button for user specific adjustment
- master reset button for manufacturer specific adjustment
- AF- Output ----- XLR -Male, Balance, Ungrounded 1.55V (+6dBm)
- AF-Input AUX, XLR FEMALE,250mv -40Db- balanced
- Audi output record- XLR male balanced
- Limiter – compensates variation in speaking distance
- Microphone – SHM 21/8 – 400 gooseneck microphones fixed with illuminated ring.
- Loud speaker wideband –integrated loud speaker with volume control
- Speaker out 0dB—20dB.

C: Chairman Microphone

- One microphone with the following (Three Buttons)
- Priority button
- Microphone button
- Clear button.

Connections:

- i. 1x3 long cable with 15-pin sub D plug microphones lines or wireless
- ii. -1x15 -pin sub -D socket. Microphone lines or wireless
- iii. -1x mini –jack (3.5) documentation output.
- iv. Approximate dimensions (without microphone)
- v. Length; 180mm, width 150; Height 50mm
- vi. Approximate weight (without microphone)
- vii. Colour - stone grey or grey.

D: Delegate Microphone

- AF- Frequency Response -80 Hz—19 kHz
- AF- output (+6dBm) balanced, microphone line
- AF- output (-10dBm) unbalance, mini –jack (3.5)
- Limiter -Compensate variation in speaking distance, cannot be switched off
- Speaker – wide band, integrated loud speaker

E: Volume control for loud speaker output (0db - 20db)

- One button- microphone.
- Dual color LED microphone;
- Green- microphone on
- Red – request to speak
- 5 DIP switches (No. 1-5) address of the microphone units (Binary code)

F: SOFTWARE**1. Configuration Menu**

- User interface:
- Selection of desktop picture (load bit map), play back video signal or create video signal using the built-in drawing program (designer).
- Displaying of participants' fields: microphone unit inactive, microphone unit active, registration and speaker's time expired.
- Can be loaded externally as bitmap file or created with designer program.
- Grid size for drag or drop of participants' fields on the screen.
- Designer for the design of user interface and participants' field.

2. File Option

- Load/save of new user configuration.
- Password configuration

3. Participants

- Participants' name entry/credit
- Functions statues participants, such as manual self-assignment, Registration ban on speaking

4. Microphone unit option

- Entry of speaker's time for all participants or specifically for each participant.
- What happens after a speaker has run out of time: mute microphone unit or display event in participants' field.
- Entry of conference time.

5. General:

- Interface configuration
- NON: maximum number of open microphones
- Design of partial windows as part of the overall user interface
- Entry of conference time

6. Records

- Displaying of speaker's time for all participants (single/overall time, save, print, load)
- Help utility with detailed description of program and functions

**D. PARTICULAR AND TECHNICAL SPECIFICATIONS OF MATERIALS AND WORKS
FOR CCTV SURVEILLANCE SYSTEM AND ACCESS CONTROL.**

<u>CLAUSE</u>	<u>DESCRIPTION</u>
PART 1	
1.00	Particular specifications
1.01	Description of the site
1.02	Description of the project
1.03	Climatic conditions
1.04	Regulations
1.05	Position of Services and Equipment
1.06	Setting to work and Regulating Systems
1.07	Identification of plant Components
1.08	Working with drawings
1.09	Record Drawings
1.10	Tests
1.11	Quality materials
1.12	Training
1.13	Equipment guarantee
1.14	Patent rights
PART 2	
2.00	Technical Specifications
2.01	Extent of Works for Security Surveillance System
2.02	Minimum allowable Technical Specifications for the CCTV System
2.03	Minimum requirements for Dome Type Video Color Cameras
2.04	Minimum requirements for External View (Exview) Cameras
2.05	Minimum requirements for Color Motorized PTZ Cameras
2.06	Lens
2.07	Mounting Brackets
2.08	Camera Housing
2.09	Color Video Monitors
2.10	Color Digital Video Multiplexing Recorder
2.11	Cables and Connectors
2.12	Uninterruptible Power Supply (UPS)

PART 1

PARTICULAR SPECIFICATIONS

1.01 DESCRIPTION OF THE SITE

The site of the proposed works is located at **Kaimosi Friends University College, Vihiga- County.**

1.02 DESCRIPTION OF THE PROJECT

The works comprise the Supply, Installation, Testing and Commissioning of the following:

- a) IP CCTV Cameras**
- b) IP Network Video Recording**
- c) Cabling**
- d) LED Monitors**
- e) Access Control**

1.03 CLIMATIC CONDITIONS

The following climatic conditions	
Maximum Temperature:	27.3 ⁰ C
Minimum Temperature :	12 ⁰ C
Relative humidity range :	40% - 90%
Atmospheric salt content:	0.02%
Longitude (approximately):	370 27'E
Latitude (approximately):	0 ⁰ 31'S
Altitude:	1800m above sea level
Solar Radiation, February Mean	Max 630 Langley's

1.04 REGULATIONS

The contractor shall, in the execution and completion of the works in the detailed design for which he is responsible comply with the provisions of the following as necessary and relevant:

- Communication Authority of Kenya (CAK)

- The Kenya Communications Act
- The Electric Power Act and the Rules made there under.
- The Kenya Power and Lighting Company Limited's Bye-Laws
- The current edition of the "Regulations for the Electric Equipment of Buildings" issued by the Institution of Engineering and Technology (IET).
- The requirements of the Chief Inspector of Factories for the Kenya Government.
- Kenya Bureau of Standards (KBS) Standard Specifications and Codes of Practice, or other equal and approved standard specifications and codes.
- The Bye-Laws of the Local Authority.
- Any other regulations applicable to Electric and Electronic Installations or Communications systems in Kenya.
- The Employer's Safety Regulations.

1.05 POSITION OF SERVICES AND EQUIPMENT

The route services and approximate positions of apparatus shall be determined on site by the Project Manager.

The contractor shall ascertain on site that his work will not foil other services or furniture and all services through the ducts must be readily accessible for maintenance and arranged to allow maximum access along the ducts. Any work which has to be redone due to negligence in this respect will be the contractor's responsibility.

1.06 SETTING TO WORK AND REGULATING SYSTEMS

The contractor shall carry out such tests of the contract works as are required by KeBS Standard Specifications and Codes of Practice, I.E.E Regulations or equal and approved codes, or the competent Authority.

No testing or commissioning shall be undertaken except in the presence of and to the satisfaction of the P.M. unless approved otherwise by him (contractor's own preliminary and proving tests are exempted).

The contractor shall include in his tender for the costs for testing and commissioning the contract works as herein described. He shall submit for approval to the P.M. a suitable programme for testing and commissioning. The P.M. and the Employer shall be given ample warning as to the dates on which testing and commissioning will take place.

The proving of any system of plant or equipment as to compliance with the specification shall not be approved by the P.M. except at his discretion until tests have been carried out under operating conditions appertaining 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 contract works.

1.07 IDENTIFICATION OF PLANT AND COMPONENTS

The contractor shall supply and install identification labels to all plant and to all switches and items of control equipment with, where no excessive heating is involved, white Traffolyte or equal labels engraved in block lettering denoting the name/function and/or section controlled. Where heating is likely to distort Traffolyte approved aluminium labels with stamped or engraved lettering shall be used.

The labels shall be mounted on equipment and in most suitable positions. They shall be in English or in internationally understood symbols capable of being read without difficulty. The labels shall conform to descriptions used on record drawing. Details of the lettering of the labels and the method of mounts or supporting shall be forwarded to the P.M. for approval prior to manufacture.

1.08 WORKING DRAWINGS

The contractor shall prepare such working Drawings as may be necessary. The working Drawings shall be completed in such detailed not only that the contract works can be executed on site but also that the P.M. can approve the contractor's designs and intentions in execution of the contract works.

Approved working drawings shall not be departed from except where provided for.

Approval by the P.M. of working Drawings shall neither relieve the contractor of any of his obligations under the contract nor relieve him from correcting any errors found subsequently in the approved working Drawings or elsewhere associated therewith or with the works.

1.09 RECORD DRAWINGS

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

record Drawing shall include but are not restricted to the following drawings or information: -

- Working Drawings amended as necessary but titled "Record Drawings" and certified as a true record of the as installed" contract works.
- Fully dimensioned drawings of all plant and apparatus.
- System Schematic and trunking diagrams showing all salient information relating to control and instrumentation.
- Wiring diagrams of individual plant, apparatus and switch and control boards. These diagrams to include these particular to individual plant or apparatus and elsewhere applicable those applicable to system operation as a whole.

One reproducible copy of the Record Drawings of the contract works and Schematic Diagrams shall be provided not later than one month afterwards.

Notwithstanding the contractor's obligation referred to above, if the contractor fails to produce to the P.M.'s approval of the Record Drawings, within one month of partial or Practical Completion the Employer shall be at liberty to have these drawings produced by others. The cost of obtaining the necessary information shall be deducted from the out-standing payments due to the contractor.

1.10 TESTS

Both on completion of his work and at the end of the guarantee period the contractor shall carry out such tests as may be required in the presence of the P.M. or his representative, or the competent Authority and shall provide all necessary Instruments, labour and materials to do so. The Contractor shall pay such charges related to such tests if any.

1.11 QUALITY OF MATERIALS

Materials and apparatus required for the complete installation as called for in the specifications or Contract Drawings shall be supplied by the contractor unless specified otherwise.

Unless otherwise specified all materials (including equipment, fittings, cables) shall be new, of the best quality and approved origin.

1.12 TRAINING

In the direction and to the satisfaction of the P.M. the contractor shall arrange for the training of the attendant console operators, users and the administrators at the site or the contractor's office on the workings of the CCTV Surveillance System. The cost of such training shall be included in the contractor's prices.

1.13 EQUIPMENT GUARANTEE

The contractor shall undertake in writing to rectify free of charge, all faults arising from faulty components, materials, design or workmanship by the manufacturer or contractor whichever is applicable. This liability shall be for a minimum period of one calendar year from the date of acceptance of the equipment. Twelve months' limitation notwithstanding, the period of liability shall not end until all defects which appear during the liability period have been rectified.

1.14 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 shall 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 P.M. and in like manner the government of Kenya shall fully indemnify the contractor against any such action, claim on proceeding for infringement or alleged infringement under the works the design thereof which shall have been supplied by the P.M. to the contractor, but this indemnity shall apply to the works only, and any permission or request to manufacture to the order of the P.M. shall not relieve the contractor from liability should he manufacture for, or supply to other buyers.

PART 2

2.00 TECHNICAL SPECIFICATIONS

2.01 EXTENT OF WORKS FOR SECURITY SURVEILLANCE SYSTEM

The security surveillance system should consider the following.

IP CCTV Camera. The cameras specified should be able to cover the distance with clear pictures. Consider whether there shall be need to support the fixed digital cameras with the Pan, Tilt and Zoom Cameras or not. Highly sensitive areas should be covered with more cameras able to take pictures of any person coming in both from the front and the rear. The resolution of the cameras should be able to give motion pictures that are clear.

LED Monitors. The color monitors must be of high resolution and preferably of plasma screen. The size of the monitor should be big enough to allow the operators make correct deductions both in real time operation and during playbacks.

IP Network Video Recording. The recording multiplexer resolution has to be equally high for the monitor to display the with a high resolution.

The IP Surveillance system should be able to support the following

- IP based recording system with motion detection.
- Digital zooming into recorded images/ life view
- Multi-level password protection and logging facilities
- Integrates with access control, burglar control, burglar alarms and
Fire alarm system and other building management systems as may be specified by the engineer.
- Image compression for remote web live and playback viewing in case of IP.
- Multi display monitors
- Automatic daily archiving to hard drive or optical drive.
- Fully adjustable digital video motion detection with exclusion /inclusion multi regions per camera.
- Efficient video collection, storage and retrieval.
- Advanced and instant search capability
- Digitally signed recordings, with audit trails of all operator actions and system event.
- Storage capacity of the Network Video Recorder. Space to provide at least three months continuous recording and back up for automatic archiving for one year and redundancy
- Infra-red illuminators in poor lighting conditions
- Able to interface with other systems on the ground
- Support IP and PoE connectivity.

2.02 WORKING DRAWINGS

The Contractor shall submit to the Project Manager working drawings for the proposed system for approval. The drawings will show the locations for all cameras, cable routing and terminations, telecommunication outlets/connectors, location of NVR, monitors, core switch and Edge switches.

2.03 MINIMUM ALLOWABLE TECHNICAL SPECIFICATIONS FOR THE CCTV SYSTEM

2.03.1 GENERAL SPECIFICATIONS FOR THE CAMERAS

The cameras are classified into two main types

a) Fixed cameras –

These cameras have a fixed area of view depending on its angle of view and the focal length of the lens used.

They can be used indoor and outdoor depending on the requirements. When used out door, the cameras are housed in a weather proof housing of IP66. Those used indoor come with different shapes of housings. The exview housings are used for cameras covering long distances like corridors and the dome housings are used for common areas like lobbies, security desks etc.

b) Pan Tilt and Zoom Cameras

These cameras are only used to support the static cameras. They are useful as they are able to pan 360 degrees, tilt over 90 degrees and zoom into an object for Min 16 times and above.

The cameras shall be indoor type and outdoor type with PoE/ 240V main supply with the appropriate power adaptors, 50Hz field frequency and operating according to the CCIR standard with minimum resolution of 2megapixels.

The camera shall be fixed on sliding rail track on the ceiling slab or walls as directed by the Electrical Engineer with an appropriate bracket.

It shall be possible to control the lens and the pan only head remotely via a remote control box at the control room. The Camera must be able to be controlled by a CCTV keyboard

They shall be linked to the Television Monitors and the Control Equipment through CAT 6 A cables as appropriate and according to the project Engineers instructions.

The mounting height and position of cameras shall be such that the desired coverage shall be achieved as distinctly as possible.

The digital signal processing (DSP) camera shall be aesthetically styled. The DSP chip will enable advanced video processing and manipulation to be carried out in the camera head.

2.04 MINIMUM REQUIREMENTS FOR THE PROPOSED CCTV SYSTEM

The cameras shall have the following minimum specifications but cameras with higher specifications shall be accepted:

a) IP Bullet camera (CCTV CAMERA TYPE 1)

- IP 12MP High Definition 4k Vandal Proof Bullet camera
- 1/1.7" CMOS imaging sensor with 120db WDR.
- Motorized Varifocal length of 4.5 to 10 mm lens
- IR Viewable Length 40m

- Minimum illumination 0.3lux (colour)
- Frame rate of 30fps at 8MP
- True day and night vision capability (ICR)
- IP network capable – IPv4/IPv6
- PoE capability
- H.265 video compression
- Tampering detection, Audio Detection, Motion detection, defocus detection, Bi-directional audio I/O communication, Network Disconnect, defog and event triggered alarm processing
- Masking
- Accessible Edge Storage with internal 128GB MicroSD card slot and complete with a 128GB MicroSD card
- ONVIF compliant application programming interface
- Web viewer/browser support
- Vandal proof IK-10 rating housing
- Weather proof IP66 rating

(State make and type, and enclose brochures/catalogues)

b) IP Bullet camera (CCTV CAMERA TYPE 2)

- IP 5MP Vandal Proof Bullet camera
- 1/1.8" CMOS imaging sensor with 120db WDR.
- Fixed Lens length of 3.7 mm
- IR Viewable Length 30m
- Minimum illumination 0.2lux (colour)
- Frame rate of 30fps at 5MP
- True day and night vision capability (ICR)
- IP network capable – IPv4/IPv6
- PoE capability
- H.265 video compression
- Tampering detection, Loitering, Face Detection, Audio Detection, Motion detection, Sound Classification, Heat map, People Counting, Queue management, defocus detection, Bi-directional audio I/O communication, Network Disconnect, defog and event triggered alarm processing
- Masking
- Accessible Edge Storage with internal 128GB MicroSD card slot and complete with a 128GB MicroSD card
- ONVIF compliant application programming interface
- Web viewer/browser support
- Vandal proof IK-10 rating housing
- Weather proof IP66 rating

(State make and type, and enclose brochures/catalogues)

c) IP Dome camera (CCTV CAMERA TYPE 3)

- IP 12MP High Definition 4k Vandal Proof Dome camera
- 1/1.7" CMOS imaging sensor with 120db WDR.
- Motorized Varifocal length of 4.5 to 10 mm lens
- IR Viewable Length 40m
- Minimum illumination 0.3lux (colour)
- Frame rate of 30fps at 8MP
- True day and night vision capability (ICR)
- IP network capable – IPv4/IPv6
- PoE capability
- H.265 video compression

- Tampering detection, Audio Detection, Motion detection, defocus detection, Bi-directional audio I/O communication, Network Disconnect, defog and event triggered alarm processing
- Masking
- Accessible Edge Storage with internal 128GB MicroSD card slot and complete with a 128GB MicroSD card
- ONVIF compliant application programming interface
- Web viewer/browser support
- Vandal proof IK-10 rating housing
- Weather proof IP66 rating

(State make and type, and enclose brochures/catalogues)

d) IP Dome camera (CCTV CAMERA TYPE 4)

- IP 5MP Vandal Proof Dome camera
- 1/1.8" CMOS imaging sensor with 120db WDR.
- Fixed Lens length of 3.7 mm
- IR Viewable Length 30m
- Minimum illumination 0.2lux (colour)
- Frame rate of 30fps at 5MP
- True day and night vision capability (ICR)
- IP network capable – IPv4/IPv6
- PoE capability
- H.265 video compression
- Tampering detection, Loitering, Face Detection, Audio Detection, Motion detection, Sound Classification, Heat map, People Counting, Queue management, defocus detection, Bi-directional audio I/O communication, Network Disconnect, defog and event triggered alarm processing
- Masking
- Accessible Edge Storage with internal 128GB MicroSD card slot and complete with a 128GB MicroSD card
- ONVIF compliant application programming interface
- Web viewer/browser support
- Vandal proof IK-10 rating housing
- Weather proof IP66 rating

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e) IP PTZ CCTV Camera (CCTV CAMERA TYPE 5)

- IP 8MP High Definition 4k Vandal Proof PTZ Dome camera
- 1/2.5" CMOS imaging sensor with 120db WDR.
- Motorized Varifocal length of 4.8 to 96 mm lens
- Minimum Adjustable optical zoom 20x
- IR Viewable Length 200m
- Minimum illumination 0.3lux (colour)
- Endless 360-degree pan rotation
- 180-degree tilt
- 300 preset positions
- Frame rate of 30fps at 8MP
- True day and night vision capability (ICR)
- IP network capable – IPv4/IPv6
- H.265 video compression
- Tampering detection, Motion Detection, Auto tracking, Audio Detection, Bi-directional audio I/O communication, Network Disconnect, defog support and event triggered alarm processing
- Masking

- Accessible Edge Storage with internal 128GB MicroSD card slot and complete with a 128GB MicroSD card
- ONVIF compliant application programming interface
- Web viewer/browser support
- Vandal proof IK-10 rating housing
- Weather proof IP66 rating

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f) IP PTZ CCTV Camera (CCTV CAMERA TYPE 6)

- IP 2MP High Definition 4k Vandal Proof PTZ Dome camera
- 1/2.8" CMOS imaging sensor with 120db WDR.
- Motorized Varifocal length of 4.4 to 140mm lens
- Minimum Adjustable optical zoom 32x
- IR Viewable Length 150m
- Minimum illumination 0.3lux (colour)
- Endless 360 degree pan rotation
- 180 degree tilt
- 250 preset positions
- Frame rate of 30fps at 2MP
- True day and night vision capability (ICR)
- IP network capable – IPv4/IPv6
- H.265 video compression
- Tampering detection, Motion Detection, Face Detection, Auto tracking, Audio Detection, Bi-directional audio I/O communication, Network Disconnect, defog support and event triggered alarm processing
- Accessible Edge Storage with internal 128GB MicroSD card slot and complete with a 128GB MicroSD card
- ONVIF compliant application programming interface
- Web viewer/browser support
- Vandal proof IK-10 rating housing
- Weather proof IP66 rating

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g) IP Bullet camera with ANPR (CCTV CAMERA TYPE 7)

- IP 12MP Vandal Proof Bullet camera
- 1/2.3" CMOS imaging sensor with 120db WDR.
- Motorized Varifocal length of 4.5 ~ 10mm lens
- IR Viewable Length 40m
- Minimum illumination 0.3lux (colour)
- Frame rate of 30fps at 8MP
- True day and night vision capability (ICR)
- IP network capable – IPv4/IPv6
- PoE capability
- H.265 video compression
- Tampering detection, Audio Detection, Motion detection, defocus detection, Bi-directional audio I/O communication, Network Disconnect, defog and event triggered alarm processing
- Masking
- Licence plate recognition with 95% accuracy
- Accessible Edge Storage with internal 128GB MicroSD card slot and complete with a 128GB MicroSD card
- ONVIF compliant application programming interface
- Web viewer/browser support
- Vandal proof IK-10 rating housing

- Weather proof IP66 rating
- (State make and type, and enclose brochures/catalogues)**

2.05 MOUNTING BRACKETS

The Brackets shall:

- Be suitable for wall or ceiling mounting of a single camera.
- Be at least 5.5"length
- Have an auto lock facility.

2.06 CAMERA HOUSING

The camera housing shall:

- Be IP66 rated with integral cable management.
- Be Weatherproof and constructed from aluminium with epoxy coating.

2.07 COLOR VIDEO MONITORS

The monitor should be capable of providing high levels of picture quality 10MHz bars visible at low brightness and reliability stable synchronization, black level clamping, low sensitivity and high stability.

The monitors shall be high performance color video monitors for monitoring scenes from the above cameras and viewing playback scenes from the video cassette recorders. The monitors shall be located at places to be shown on site by the project manager.

The monitor shall give stable and interference free pictures of scenes being viewed. It shall also conform to the following specifications:

Type	: LED; 50,000hours panel life
System	: NTSC/PAL
Screen size	: 40"
Resolution	: 1,920 x 1,080
Display Colour	: 16.0 million
Brightness	: 350cd/m ²
Contrast Ratio	: 5,000:1
Video input signal	: 1.0 V pk-pk
Power consumption	: Not more than 80W
Power input	: 240V 50HZ
Interface	VGA, DVI, HDMI, RGB, Audio, Video

(State make and type, and enclose catalogues)

2.08 NETWORK VIDEO RECORDER

The network video recorder shall have the following minimum requirements:

- 64 Channels
- Throughput of at least 300Mbps
- Gigabit Ethernet connection
- Multi-screen Display: Full/4/9/16 way or as appropriate.
- 10 Hot swap HDDs each of 4TB minimum capacity
- external storage support capability
- VGA/HDMI local monitor
- Redundant hot swap power supply
- Network management/viewer software
- In built intelligent video analysis
- H.265, MPEG, MJPEG Compression
- ONVIF compatibility
- Web viewer supported
- PoE enabled

- Storage capacity: continuous storage for at least three (3) months and back up storage for at least one year
- Smart Video Search Feature for streamlined Investigations
- Recording resolution of atleast 12MP
- IP address filtering, user access log, authentication and encryption
- Auto Launch of Video on specified Alarms/Events
- LED status indicator
- CE, UL certification

(State make and type, and enclose catalogues)

2.09 CCTV MANAGEMENT SOFTWARE

CCTV management software with the following minimum specifications: -

- Event Recording Scheme
- Operate Motion-Dector-Recording
- NTSC-PAL video recording.
- Be capable of recording real time images at full resolution and frames rate.
- Features for connection for alarm system Automatic Recycling
- Users' passwords.
- Input, Output, Audio Alert Facilities
- Remote Viewing Facilities, TCP/IP, INTERNET, ISDN, modem
- Capability of streaming into the client's existing LAN / WAN infrastructure
- Ability to quickly search through thousands of hours of recorded video information
- Event-triggered video recording to reduce storage requirements
- Masks out disturbing areas, or areas of no interest, within the specified region
- Identifies & immediately alerts user to potential security breaches
- Features should be able to be used at very low frame rates
- Easy calibration for specific applications
- Color-matching matches user-specified colour to the video image
- Functions in outside environments with changing light conditions:
- Auto-learning of background feature
- Object saliency and object Consistency mechanisms to filter out phantom objects
- "Out of Focus" condition is user-calibrated by level of focus
- Automatic self-test of camera validity
- Motion Trajectory Analyzer provides advanced analysis of the motion of objects
- Seamless integration into Enterprise security knowledge management solution.
- Analysis of stationary objects

(State make and type, and enclose catalogues)

2.10 UNINTERRUPTIBLE POWER SUPPLY (UPS)

This shall be an on-line Un-interruptible power supply with output rating able to provide power to the security surveillance system a minimum of 8 hours in case of power failure.

It shall be microprocessor- based so that both output voltage and frequency are closely regulated and continuously monitored and also provide system diagnostic and shut down protection functions. It shall feature a maintenance by-pass to enable normal routine maintenance operations to be performed without interruptions to the system.

It shall be fitted with both visual and audible alarms to indicate any change in equipment status such as:

- input power problems
- ups faults
- ups overload

battery discharging

Other parameters are:

Input supply: 240VAC50HZ
Power factor: 0.8 lag at full load
Current limit: 125% of the normal
Output voltage: 240V AC 50 HZ
Output voltage tolerance: 2%
Output frequency tolerance : 0.05%

(State make and type, and enclose catalogues)

2.11 SYSTEM CONTROL KEYBOARD

- System Control Keyboard
- 5" TFT touch LCD
- Network cameras
- User-friendly design and easy-to-use keypad
- 3 Axis joystick to control PTZ function
- Detachable joystick / jogshuttle for universe use (Right / Left hand use)
- USB interface support (1ea for SSM, 1ea for image snapshot / Upgrade)
- Fast camera-tile mapping, Config import / export

(State make and type, and enclose brochures/catalogues)

2.12 SERVER STORAGE

- Rack mounted
- Number of Chassis: Upto 36
- Number of Nodes: Upto 144
- Number of Nodes per Chassis: 4 Nodes
- Chassis Capacity: 480TB
- Drives: Upto 60 Hdd Drives (3.5" 4kn Sata) Per Chassis
- Self-Encrypting Drive (Sed Hdd): Option Yes
- Error Correcting Code (ECC) Memory (Per Node): Upto 64 GB
- Solid State Drives (Ssd): Upto 2 Cache 3.2 Tb
- Self-Encrypting Drive (Sed Ssd): Supports
- Front-End Networking (Per Node): 2 x 10ge (Sfp+)
- Infrastructure Networking (Per Node): 2 x 10 Gbe (Sfp+)
- Typical Power Consumption @ 240v (Per Chassis): 1120 Watts (@25°C)
- Maximum Power Consumption @ 240v (Per Chassis): 1560 Watts
- Thermal Rating: 3800 Btu/Hr

(State make and type, and enclose brochures/catalogues)

2.13 VIDEO MANAGEMENT SYSTEM RECORDING SERVER

- Rack Mounted
- Disk Capacity: 8TB HDD
- Memory: RAM 32 GB, DDR4
- Operating Software: Windows server, Datacenter license
- Chassis: Upto 12 x 3.5" Hard Drives for 2CPU Configuration
- Processor: 2 No. Processors Intel® Xeon® Silver 4110; 2.1GHz; 8Core/16T; 9.6GT/s; 11MB Cache; Turbo, HT (85W); DDR4-2400
- Processor Thermal Configuration: 2 Standard Heatsinks for 125W
- Memory Type: DIMM Type – RDIMMs; Speed 2666MT/s
- Memory Capacity: 2 No. Memory Capacity 8GB RDIMM, 2666MT/s, Single Rank
- Storage Controller: RAID Configuration 5

- Internal Controller: RAID Controller PERC H740P RAID Controller, 8Gbps NV Cache, Adapter,
- Disk Drives (Bays): 10 No. Hard Drives 12TB 7.2K RPM SATA 6Gbps 512e 3.5in Hot-plug; 120GB SSD SATA Boot 6Gbps 512n 2.5in Hot-plug Drive
- Performance Fans: 6No.
- Power Supply: Dual, Hot-plug, Redundant Power Supply (N+1)
- Riser Config 4, 3x8, 4x16 slots,
- Graphics Processing Unit (GPU) support: Double-Wide
- GRAPHIC CARD: Nvidia GeForce
- Server Configuration Management: Support
- Ports: Broadcom 57416 2 Port 10Gb Base-T + 5720 2 Port 1Gb Base-T, rNDC
- PowerEdge 2U Standard Bezel
- ReadyRails™ Sliding Rails With Cable Management Arm
- 1Yr Parts Only Warranty (Emerging Only)
- 3Yr ProSupport Plus and 4hr Mission Critical

(State make and type, and enclose brochures/catalogues)

2.14 CABLING

- a) All cables must pass through conduits or trunking.
- b) All cables and connectors shall be labeled.
- c) No distortion due to kinks, sharp bends or excessive hauling tension shall be allowed.
- d) Cables shall be run in a manner eliminating any possibility of strain on the cable itself or on the terminations.
- e) Cables shall have no joints or splices.
- f) Cables shall be kept at a minimum distance of 150mm from items liable to become hot or cold.
- g) Bending radii shall be not less than eight times the overall cable diameter.
- h) The manufacturers hauling tension shall not be exceeded.
- i) All cable ties and fixings shall be tightened to support the cable loom without distortion of the cable sheath.
- j) The STP 4 pair shall be of cat 6A grade and exceed ANSI/TIA/EIA-568-Aj and ISO/IEC 11001 standards. Cat 6A structured cabling shall be used throughout the entire installation.

(State make and type, and enclose catalogues)

2.15 PATCH PANELS

- a) Shall conform to ANSI/TIA/EIA-568A and rack mounted.
- b) Shall be equipped with RJ45 contacts of Cat 6A sockets with capacity of 12, 24 or 48 ports
- c) Shall be earthed.
- d) Except for patch cords used to connect NICs to the RJ45 sockets, all patch cords shall be labeled at each extremity with PVC support and intelligible marking. For other components the label shall be of stiff plastic PVC type.

(State make and type, and enclose catalogues)

2.16 ACTIVE NETWORK CONTROL EQUIPMENT AT THE NETWORK CORE

The active control equipment at the core should have the following features:

- a. Backplane/switch fabric Bandwidth Capacity of 150 GBPS or more.
- b. IEEE 802.3 compliant for power over Ethernet
- c. IEEE 802.1 based security compliant
- d. SNMP compliant for security
- e. Layer 2/3/4 switch

- f. Should support Gigabit Ethernet to the desktop
- g. Should have at least 24-slots or higher chassis.
- h. The core switches should have two links to each edge switch configured in active/active configuration. The links should deliver 2GBPS throughput when all ports are active.
- i. The core switch should have redundant power supply, redundant fan tray and redundant CPU/ supervisor engine installed
- j. Fiber cable linking stacks on each edge switch to the core should be connected to 1000Base X(GBIC) port on the core switch using star topology
- k. Should be installed with the latest version of system software at the time of delivery.
- l. Should support Quality of service for various applications.
- m. Active devices shall be rack mounted.
- n. Active devices used at the LAN edge must be stackable and shall attach to the backbone cabling at 1000mbps.
- o. Where more than one active device is required to satisfactorily serve the floor data outlet distribution requirements they shall be stacked using interface operating at the backbone speed.

(State make and type, and enclose catalogues)

2.17 LABELING

- a) Horizontal and backbone cables shall be labeled at each end. The cable or its label shall be marked with its identifier.
- b) A unique identifier shall be marked on each faceplate to identify it as connecting hardware.
- c) Each port on the face plate shall be labeled with its identifier.
- d) A unique identifier shall be marked on each piece of connecting hardware to identify it as a connecting hardware.
- e) Each port on the connecting hardware shall be labeled with its identifier.
- f) A unique identifier shall be marked on each **port** on the connecting faceplate to identify it as a connecting hardware.

2.18 NETWORK CABINET

- a) The cabinet shall be metallic with front clear glass and of good finish and conveniently accessible by technical personnel for maintenance. The main cabinet shall be at least 42U and other cabinets housing edge switch should be at least 9U
- b) Power to the cabinet shall be switched off from within the cabinets. Proper power socket cables to be supplied with the cabinet.
- c) The cabinet for active devices shall conform to ANSI/TIA/EIA-568A specifications with forced cooling.
- d) Support small factor pluggable (SFP) and industry leading density up to 240 of IEEE 8033 for 1000 Base-SX ports per system.
- e) Cabinets shall have adequate room for additional components typically 3U free space.

(State make and type, and enclose catalogues)

2.19 ETHERNET FLOOR EDGE SWITCHES

Active control equipment at the LAN Edge should have the following features

- a) Active control equipment at the LAN Edge should support 10/100/1000 MBPS on all ports (RJ45) and Gigabit to the desktop connectivity
- b) The equipment should have at least two 1000BaseXGigabit uplink ports for terminating backbone Fiber.

- c) The equipment should support layer 3 routing.
 - d) Should support IEEE 802.1, SSH, SNMP.
 - e) Switch Fabric forwarding Bandwidth of 64GBPS or more.
 - f) More than 12,000MAC addresses should be available on each switch.
 - g) The switches should have 8/12/24/48 ports of 10/100/1000 MBPS.
 - h) Each stack on the edge will have two links of Fiber to the core switch, totaling two fiber terminations from the core switch to the stack.
 - i) Should support Jumbo frames.
 - j) Total stack throughput bandwidth of 64 GBPS or more.
 - k) Active Edge switches should be quoted with a minimum of **One year of warranty** covering free replacement of parts and units.
 - l) The switches to be PoE plus
- (State make and type, and enclose catalogues)**

2.20 **OPTICAL FIBRE CABLE**

The fibre cable must be 8 core single mode fibre with the following specifications: -

- a) Cable size: 8 cores.
 - b) Termination: SC Duplex connectors.
 - c) Graded Index: Nominal 62.5/125 micron
- (State make and type, and enclose catalogues)**

2.21 **FIBER PATCH PANELS**

All Backbone Fiber links should be terminated on Fiber Patch Panels. Connector interfaces should support ST, SC simplex, SC duplex, FC, LC or MT-RJ.

State make and type, and enclose catalogues)

2.22 **BACK BONE**

Backbone cabling inclusive of switches and all necessary accessories shall be carried out in readiness for the termination of edge switches.

The Backbone cabling shall be flexible and allow for easy 'add ons' for future expansions. Hence enough capacity shall be allowed for future expansion. It shall be done using the star topology.

3.00 **ACCESS CONTROL – SYSTEM**

3.01 **THE INTELLIGENT SYSTEM CONTROLLER**

The controller is the main item for control access system, when specifying, the engineer has to bear the following.

The controller shall have a built in power supply, with a battery backup facility and sufficient power to drive the number of doors with access control.

The control should be able to provide time zoning, extensive door monitoring, logging of all events and hardware alarms – output.

User's parameters shall be done locally in the stand alone via a portable and easy to use compact programme using the English Languages Software.

The controller should be able to use the proximity cards or the magnetically encoded keys as identifiers as specified by the engineer.

It shall have the following features

- Bi- processor Central Processing Unit
- With lead battery backup with four (4 hrs.) hours autonomy in case of network failure.
- Autonomous clock/calendar chip with automatic

- management of regular/daylight saving time with autonomy of one hour.
- Management of peer to peer connection with other servers and as a consequence a high decision making capability and full operative autonomy.
- Up to 2500 transactions stored on a removable cartridge with a flash EPROM memory.

The server as specified by the Engineer should be able to store the transactions for a minimum of two months. The speed of the server to be such that the programming and communication between the card readers and other interface units is fast.

3.02 BIOMETRIC (FINGER) AND PROXIMITY CARD READER

- shall have biometric state of the art finger print reader
- Be Bi-directional and meets requirements for HID Proximity cards (standard ISO/ABA 125 KHz, up to 4cm of distance).
- Have Alphanumeric Liquid Crystal Display (LCD), back lit, with two lines of 16 characters each, for the visualization of time data, guide messages for the user, and service messages.
- Should have 2 multicolor LED: Green for the access granted, Red for invalid transaction, Yellow for Echelon Service function.
- Variable Tones for valid/invalid transactions.
- Have a USB Port, RS-485 communication interface, contactless read/write smart card technology
- Lon Works cabling Interface should be done using unshielded twisted pair cable in free topology. (Transceiver FTT10A, 78Kbps)
- Meets IP31 level of protection
- at least 500 fingerprint user capacity
- at least 500 valid cards capacity
- It should be able rated to operate within 0°C ÷ +50°C temperature range
- It should be rated to operate up to a relative humidity 95% without condensation or as otherwise specified by the engineer for special cases.
- Must meet all laid down international Electromagnetic Compatibility standards

3.03 PROXIMITY CARD

The cards shall be of a biometric type and that can accommodate a customer logo, photographs and text should they be required and they shall have a high coercively magnetic strip.

3.04 MAGNETIC DOOR CONTACTS

They shall be of the magnetic reed switch and with appropriate magnet able to handle at least a minimum of 200KN and also of the normally open type

3.05 2- DOOR ACCESS CONTROLLER

The controller shall be capable of controlling 1No.(one) or 2 No.(two) doors in a stand – alone mode.

The controller shall have a built in power supply, with a battery backup facility and sufficient power to drive two locks.

The control should be able to provide time zoning, extensive door monitoring, logging of all events and hardware alarms – output.

Users parameters shall be done locally in the stand alone via a portable and easy to use compact programme using the English Languages Software.

The controller should be able to use the magstripe cards or the magnetically encoded keys as identifiers.

The card readers shall have a Pin-pad.

The power for the reader and for the electric lock shall be supplied via the controller.

3.06 MAGESTRIPS CARD

The cards shall be of a type that can accommodate a customer logo, photographs and text should they be required and they shall have a high coercivity magnetic strip.

3.07 DOOR CONTACTS

They shall be of the magnetic reed switch and the appropriate magnet and also of the normally open type.

3.08 HAND HELD METAL DETECTOR

Should meet the following minimum requirements

- Contact free inspection
- Extremely high detection performance
- Audible and vibrating alert
- Automatic zero compensation
- LED for visual metal detection
- Sensitivity of between 11cm to 40cm detection distance in air
- Meet DIN EN ISO9002 quality standard, VDE 0848 TEIL4 and A3 security standards

3.09 UNINTERRUPTIBLE POWER SUPPLY (UPS)

This shall be an on-line Un-interruptible power supply with output rating able to provide power to the security surveillance system and controlled access system for a minimum of 8 hours in case of power failure.

It shall be microprocessor- based so that both output voltage and frequency are closely regulated and continuously monitored and also provide system diagnostic and shut down protection functions. It shall feature a maintenance by-pass to enable normal routine maintenance operations to be performed without interruptions to the system.

It shall be fitted with both visual and audible alarms to indicate any change in equipment status such as:

input power problems

ups faults

ups overload

battery discharging

Other parameters are:

Input supply: 240VAC50HZ

Power factor: 0.7 lag at full load

Current limit: 125% of the normal

Output voltage: 240V AC 50 HZ

Output voltage tolerance: 2%

Output frequency tolerance: 0.05%

3.10 X-RAY BAGGAGE SCANNER

Should meet the following minimum requirements|:

- A tunnel opening of 620mm wide by 418 mm high
- Conveyor speed at 50Hz mains frequency of 0.24m/s
- Conveyor should be able to carry up-to 160 Kg of evenly distributed load.
- High resolution and able to detect 39AWG(0.09mm)
- 17" color monitor
- High image resolution

- High speed digital signal transmission using 24-bit real time image processing
- Advance material classification system
- Online image analysis
- Electronic zoom facility
- Image presentation in B/W and color
- Digital video memory of 1280*1024 at 24 bits
- X-ray leakage should meet applicable international standards relevant to X-ray emitting devices
- Constructed of heavy duty rustproof material for extremely durable and tamper proof operation.

3.11 WALK THROUGH METAL DETECTOR

The walk through metal detector should have the following minimum features:

- Multi-zone panel version
- Passage way internal size 760x2030x580mm(WxHxD)
- Detection Zones: Atleast 33No.Zones
- Power Supply: 240V, 50Hz
- Adjustable sensitivity with range settings
- Programmable operation
- Programming access protected by mechanical lock and passwords
- High immunity to both electrical and mechanical interference
- Easy maintenance
- Control unit incorporated in the detector
- High intensity display using green and red signals
- High intensity audible alarm signal with programmable volume/tone
- Signal to be proportional to the mass of the object detected
- Facility for networking via built-in keypad and RDU or RS232/ RS485 serial connection
- Multi-zone display bar for height of person localization
- Should be harmless to: pacemakers, life support systems, pregnant women, magnetic storage media.
- Photo transit counter
- Emergency batteries for 6.5 hours' independent operation capability
- Constructed of heavy duty materials for extremely durable and tamper proof operation.
- Conform to FAA, (3-GUN-Test), NILECJ-0601-00 standards for all security levels, EC regulations, all international standards relating to electrical safety.

3.12 Access control Server Controller

- a) Bi-processor CPU68EN302, including a Motorola 68000 (32 Bit architecture) and Ethernet communication processor.
- b) 1 MByte FLASH to download the application firmware.
- c) MByte FLASH EPROM on a removable cartridge for the download of the permanent database and for the transit and events buffer. Optional memory with 8 Mbytes Flash Memory Available.
- d) 1MByte RAM for the activity.
- e) Management of up to 12 Temakeys terminals
- f) Management of upto 64 I/O
- g) Upto 10,000 cards and 2,500 transactions stored on a removable cartridge with flash EPROM memory.

- h) Management of peer to peer connection with the other tema server and as a consequence high decision making capability and full operative autonomy.
- i) Autonomous clock/calendar chip with automatic management of regular /daylight saving time with autonomy of 1.000 hrs in case of power failure.
- j) Lead battery backup with full functionality for 4 hours in case of network failure and signaling o the battery status.

3.13 Biometric Clocking Machine

- shall have biometric state of the art finger print reader
- Be Bi-directional and meets requirements for HID Proximity cards (standard ISO/ABA 125 KHz, up to 4cm of distance).
- Have Alphanumeric Liquid Crystal Display (LCD), back lit, with two lines of 16 characters each, for the visualization of time data, guide messages for the user, and service messages.
- Should have 2 multicolor LED: Green for the access granted, Red for invalid transaction, Yellow for Echelon Service function.
- Variable Tones for valid/invalid transactions.
- Have a USB Port, RS-485 communication interface, contactless read/write smart card technology
- Lon Works cabling Interface should be done using unshielded twisted pair cable in free topology. (Transceiver FTT10A, 78Kbps)
- Meets IP31 level of protection
- atleast 1,000 fingerprint user capacity
- atleast 1,000 valid cards capacity
- It should be able rated to operate within 0°C ÷ +50°C temperature range
- It should be rated to operate up to a relative humidity 95% without condensation or as otherwise specified by the engineer for special cases.
- Must meet all laid down international Electromagnetic Compatibility standards

3.14 NETWORK MANAGEMENT SYSTEM

Bidders must propose the manufacturers Network Management system for centralized configuration, maintenance and troubleshooting of active equipments. Third party standalone systems should not be offered as part of the solution. Features and functionalities of the system should include the following:

- a) Should be compatible with Microsoft windows/Linux operating systems
- b) Graphical User Interface for central Management and network viewing
- c) Network discovery and inventory management
- d) VLAN, multicast, security and load-balancing/fail over configuration
- e) Downloading and saving of log file from the device flash memory
- f) Centralized upgrade/backup and archiving of active devices
- g) Export of network topology to JPEG or other standard formats.

3.15 WORKSTATION

- Mini Tower
- Intel® Core™ i7-7700 with Intel® HD Graphics 630
- 4.2 GHz with Intel® Turbo Boost Technology
- 8 MB cache, 4 core
- Chipset Intel® Q270
- Memory 64 GB DDR4-2400 SDRAM 6
- Memory Transfer rates up to 2400 MT/s
- Internal Storage 1 TB 3.5" SSHD (7200 rpm) 7
- Optical Drive Slim DVD-ROM; Slim DVD-Writer 19
- Graphics Integrated: Intel® HD Graphics 630

- Windows 10 Pro 64
 - 3years
 - USB Key Board
 - USB Mouse
- (State make and type, and enclose brochures/catalogues)

3.16 BROCHURES AND TECHNICAL LITERATURE

Tenderers **Must** enclose together with their submitted bids brochures detailing technical Literature and specifications of the CCTV Cameras System and the UPS. The brochures shall be used to evaluate the suitability of the system and the associated accessories. **Any bid submitted without the brochures shall be considered technically non-responsive, and shall subsequently be disqualified.**

SECTION VII - DRAWINGS

Note A list of drawings should be inserted here. The actual drawings including Site plans should be annexed in a separate booklet.

PART III - THE CONDITIONS OF CONTRACT AND CONTRACT

SECTION VIII - GENERAL CONDITIONS OF CONTRACT (GCC)
KAIMOSI FRIENDS UNIVERSITY COLLEGE (KAFUCO)

PROPOSED CONSTRUCTION OF LIBRARY AT KAIMOSI FRIENDS UNIVERSITY COLLEGE

ARCHITECT: CHIEF ARCHITECT, STATE DEPARTMENT FOR PUBLIC WORKS
P.O.BOX 30743-00100, NAIROBI

General Conditions of Contract

1. GENERAL PROVISIONS

1.1 Definitions

In this Contract, except where context otherwise requires, the following terms shall be interpreted as indicated below. Words indicating persons or parties include corporations and other legal entities, except where the context requires otherwise.

“Accepted Contract Amount” means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.

“Base Date” means a date 30 day prior to the submission of tenders.

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

“Completion Date” means the date of completion of the Works as certified by the Engineer.

“Contract Price” means the price defined in the contract and thereafter as adjusted in accordance with the provisions of the Contract.

“Contract” means the agreement entered into between the Procuring Entity 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.

“Contractor's Documents” means the calculations, computer programs and other software, progress reports, drawings, manuals, models and other documents of a technical nature (if any) supplied by the Contractor under the Contract.

“Contractor's Equipment” means all apparatus, machinery, vehicles and other things required for the execution and completion of the Works and the remedying of any defects. However, Contractor's Equipment excludes Temporary Works, Procuring Entity's Equipment (if any), Plant, Materials and any other things intended to form or forming part of the Permanent Works.

“Contractor's Personnel” means the Contractor's Representative and all personnel whom the Contractor utilizes on Site, who may include the staff, labor and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the Works.

“Contractor's Representative” means the person named by the Contractor in the Contractor appointed from time to time by the Contractor who acts on behalf of the Contractor.

“Contractor” means the person(s) named as contractor in the Form of Tender accepted by the Procuring Entity.

“Cost” means expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.

“Day” means a calendar day and **“year”** means 365 days.

“Day works” means Work inputs subject to payment on a time basis for labour and the associated materials and plant.

“Defect” means any part of the Works not completed in accordance with the Contract.

“Defects Liability Certificate” means the certificate issued by Architect upon correction of defects by the Contractor.

“Defects Liability Period” means the period named in the Special Conditions of Contract and calculated from the Completion Date, within which the contractor is liable for any defects that may develop in the handed over works.

“Defects Notification Period” means the period for notifying defects in the Works or a Section (as the case may be) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], which extends over the days stated in the Special Conditions of Contract.

“Drawings” means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Procuring Entity in accordance with the Contract.

“Final Payment Certificate” means the payment certificate issued under Sub-Clause 14.13 [Issue of Final Payment Certificate].

“Final Statement” means the statement defined in Sub-Clause 14.11 [Application for Final Payment Certificate].

“Force Majeure” is defined in Clause 19 [Force Majeure].

“Foreign Currency” means a currency of another country (not Kenya) in which part (or all) of the Contract Price is payable, but not the Local Currency.

“Goods” means Contractor's Equipment, Materials, Plant and Temporary Works, or any of them as appropriate.

“Interim Payment Certificate” means a payment certificate issued under Clause 14 [Contract Price and Payment], other than the Final Payment Certificate.

“Laws” means all national legislation, statutes, ordinances, and regulations and by-laws of any legally constituted public authority.

“Letter of Acceptance” means the letter of formal acceptance of a tender, signed by Procuring Entity, including any annexed memoranda comprising agreements between and signed by both Parties.

“Local Currency” means the currency of Kenya.

“Materials” means things of all kinds (other than Plant) intended to form or forming part of the Permanent Works, including the supply-only materials (if any) to be supplied by the Contractor under the Contract.

“Notice of Dissatisfaction” means the notice given by either Party to the other under Sub-Clause 20.3 indicating its dissatisfaction and intention to commence arbitration.

“Special Conditions of Contract” means the pages completed by the Procuring Entity entitled Special Conditions of Contract which constitute Part A of the Special Conditions.

“Party” means the Procuring Entity or the Contractor, as the context requires.

“Payment Certificate” means a payment certificate issued under Clause 14 [Contract Price and Payment].

“Performance Certificate” means the certificate issued under Sub-Clause 11.9 [Performance Certificate].

“Performance Security” means the security (or securities, if any) under Sub-Clause 4.2 [Performance Security].

“Permanent Works” means the permanent works to be executed by the Contractor under the Contract.

“Plant” means the apparatus, machinery and other equipment intended to form or forming part of the Permanent Works, including vehicles purchased for the Procuring Entity and relating to the construction or operation of the Works.

“Procuring Entity's Equipment” means the apparatus, machinery and vehicles (if any) made available by the

Procuring Entity for the use of the Contract or in the execution of the Works, as stated in the Specification; but does not include Plant which has not been taken over by the Procuring Entity.

“Procuring Entity's Personnel” means the Engineer, the Engineer, the assistants and all other staff, labor and other employees of the Architect and of the Procuring Entity; and any other personnel notified to the Contractor, by the Procuring Entity or the Engineer, as Procuring Entity's Personnel.

“Procuring Entity” means the Entity named in the Special Conditions of Contract.

“Engineer” is the person named in the Appendix to Conditions of Contract (or any other competent person appointed by the Procuring Entity and notified to the Contractor, to act in replacement of the Engineer) 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.

“Engineer” means the person appointed by the Procuring Entity to act as the Architect for the purposes of the Contract and named in the Special Conditions of Contract, or other person appointed from time to time by the Procuring Entity and notified to the Contractor

“Provisional Sum” means a sum (if any) which is specified in the Contract as a provisional sum, for the execution of any part of the Works or for the supply of Plant, Materials or services under Sub-Clause 13.5 [Provisional Sums].

“Retention Money” means the accumulated retention moneys which the Procuring Entity retains under Sub-Clause 14.3 [Application for Interim Payment Certificates] and pays under Sub-Clause 14.9 [Payment of Retention Money].

“Schedules” means the document(s) entitled schedules, completed by the Contractor and submitted with the Form of Tender, as included in the Contract.

“Section” means a part of the Works specified in the Special Conditions of Contract as a Section (if any)

“Site Investigation Reports” are those reports that may be included in the tendering documents which a ref actual and interpretative about the surface and sub-surface condition sat the Site.

“Site” means the places where the Permanent Works are to be executed, including storage and working areas, and to which Plant and Materials are to be delivered, and any other places as may be specified in the Contract as forming part of the Site.

“Specification” means the document entitled specification, as included in the Contract, and any additions and modifications to the specification in accordance with the Contract. Such document specifies the Works.

“Start Date” or “Commencement 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).

“Statement” means a statement submitted by the Contractor as part of an application, under Clause 14 [Contract Price and Payment], for a payment certificate.

“Subcontractor” means any person named in the Contract as a subcontractor, or any person appointed as a subcontractor, for a part of the Works.

“Taking-Over Certificate” means a certificate issued under Clause 10 [Procuring Entity's Taking Over].

“Temporary Works” means all temporary works of every kind (other than Contractor's Equipment) required on Site for the execution and completion of the Permanent Works and the remedying of any defects.

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

“Tender” means the Form of Tender and all other documents which the Contractor submitted with the Form of Tender, as included in the Contract.

“Tests after Completion” means the tests (if any) which are specified in the Contract and which are carried out in

accordance with the Specification after the Works or a Section (as the case may be) are taken over by the Procuring Entity.

“Tests on Completion” means the tests which are specified in the Contractor agreed by both Parties or instructed as a Variation, and which are carried out under Clause 9 [Tests on Completion] before the Works or a Section (as the case may be) are taken over by the Procuring Entity.

“Time for Completion” means the time for completing the Works or a Section (as the case may be) as stated in the Special Conditions of Contract (with any extension calculated from the Commencement Date.

“Unforeseeable” means not reasonably foreseeable by an experienced contractor by the Base Date.

“Variation” means any change to the Works, which is instructed or approved as a variation under Clause 13 [Variations and Adjustments].

“Works” means the items the Procuring Entity requires the Contractor to undertake as defined in the Appendix to Conditions of Contract. **“Works”** may also mean the Permanent Works and the Temporary Works, or either of them as appropriate.

1.2 Interpretation

In the Contract, except where the context requires otherwise:

- a) Words indicating one gender include all genders;
- b) words indicating the singular also include the plural and words indicating the plural also include the singular;
- c) provisions including the word “agree”, “agreed” or “agreement” require the agreement to be recorded in writing;
- d) “written” or “in writing” means hand-written, type-written, printed or electronically made, and resulting in a permanent record; and

The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.

1.3 Communications

13.1 Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications shall be:

- a) In writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Special Conditions of Contract; and
- b) delivered, sent or transmitted to the address for the recipient's communications as stated in the Special Conditions of Contract. However:
 - i) if the recipient gives notice of another address, communications shall thereafter be delivered accordingly; and
 - ii) if the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the address from which the request was issued.

13.2 Approvals, certificates, consents and determinations shall not be unreasonably withheld or delayed. When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Engineer, a copy shall be sent to the Architect or the other Party, as the case may be.

1.4 Law and Language

14.1 The Contract shall be governed by the laws of **Kenya**.

14.2 The ruling language of the Contract shall be **English**.

1.5 Priority of Documents

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

- a) The Contract Agreement,
- b) The Letter of Acceptance,
- c) The Special Conditions – Part A,
- d) the Special Conditions – Part B
- e) the General Conditions of Contract
- f) the Form of Tender,
- g) the Specifications and Bills of Quantities
- h) the Drawings, and
- i) the Schedules and any other documents forming part of the Contract.

If an ambiguity or discrepancy is found in the documents, the Architect shall issue any necessary clarification or instruction.

1.6 Contract Agreement

The Parties shall enter into a Contract Agreement within 14 days after the Contractor receives the Contract Agreement, unless the Special Conditions establish otherwise. The Contract Agreement shall be based upon the form annexed to the Special Conditions. The costs of stamp duties and similar charges (if any) imposed by law in connection with entry into the Contract Agreement shall be borne by the Procuring Entity.

1.7 Assignment

The Contractor shall not assign the whole or any part of the Contract or any benefit or interest in or under the Contract. However, the contractor:

- a) May assign the whole or any part with the prior consent of the Procuring Entity, and
- b) may, as security in favor of a bank or financial institution, assign its right to moneys due, or to become due, under the Contract.

1.8 Care and Supply of Documents

- 1.8.1 The Specifications and Drawings shall be in the custody and care of the Procuring Entity. Unless otherwise stated in the Contract, two copies of the Contract and of each subsequent Drawings and Bills of Quantities shall be supplied to the Contractor, who may make or request further copies at the cost of the Contractor.
- 1.8.2 Each of the Contractor's Documents shall be in the custody and care of the Contractor, unless and until taken over by the Procuring Entity. Unless otherwise stated in the Contract, the Contractor shall supply to the Architect two copies of each of the Contractor's Documents.
- 1.8.3 The Contractor shall keep, on the Site, a copy of the Contract, publications named in the Specification, the Contractor's Documents (if any), the Drawings and Variations and other communications given under the Contract. The Procuring Entity's Personnel shall have the right of access to all these documents at all reasonable times.
- 1.8.4 If a Party becomes aware of an error or defect in a document which was prepared for use in executing the Works, the Party shall promptly give notice to the other Party of such error or defect.

1.9 Timely provision of Drawings or Instructions

- 1.9.1 The Contractor shall give notice to the Architect whenever the Works are likely to be delayed or disrupted if any necessary drawing or instruction is not issued to the Contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary drawing or instruction, details of why and by when it should be issued, and the nature and amount of the delay or disruption likely to be suffered if it is late.
- 1.9.2 If the Contractor suffers delay and/or incurs Cost as a result of a failure of the Architect to issue the notified drawing or instruction within a time which is reasonable and is specified in the notice with supporting details, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
 - a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4

[Extension of Time for Completion], and

- b) payment of any other associated costs accrued, which shall be included in the Contract Price.

1.93 After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

1.94 However, if and to the extent that the Architect failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, or costs accrued.

1.10 Procuring Entity's Use of Contractor's Documents

1.10.1 As agreed between the Parties, the Contractor shall retain the copyright and other intellectual property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.

1.10.2 The Contractor shall be deemed (by signing the Contract) to give to the Procuring Entity a non-terminable transferable non-exclusive royalty-free license to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This license shall:

- a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,
- b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and
- c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor.

1.10.3 The Contractor's Documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Procuring Entity for purposes other than those permitted under Sub-Clause 1.10.2.

1.11 Contractor's Use of Procuring Entity's Documents

As agreed between the Parties, the Procuring Entity shall retain the copyright and other intellectual property rights in the Specification, the Drawings and other documents made by (or on behalf of) the Procuring Entity. The Contractor may, at his cost, copy, use, and obtain communication of these documents for the purposes of the Contract. They shall not, without the Procuring Entity's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.

1.12 Confidential Details

1.12.1 The Contractor's and the Procuring Entity's Personnel shall ensure confidentiality at all times. The confidentiality shall survive termination or completion of the contract. They shall disclose all such confidential and other information as may be reasonably required in order to verify compliance with the Contract and allow its proper implementation.

1.12.2 The Contractor's and the Procuring Entity's Personnel shall also treat the details of the Contract as private and confidential, except to the extent necessary to carry out their respective obligations under the Contract or to comply with applicable Laws. Each of them shall not publish or disclose any particulars of the Works prepared by the other Party without the previous agreement of the other Party. However, the Contractor shall be permitted to disclose any publicly available information, or information otherwise required to establish his qualifications to compete for other projects.

1.13 Compliance with Laws

The Contractor shall, in performing the Contract, comply with applicable Laws. Unless otherwise stated in the Special Conditions of Contract:

- a) The Procuring Entity shall have obtained (or shall obtain) the planning, zoning, building permit or similar permission for the Permanent Works, and any other permissions described in the Specifications as having been (or to be) obtained by the Procuring Entity; and the Procuring Entity shall indemnify and hold the Contractor harmless against and from the consequences of any failure

to do so; and

- b) the Contractor shall give all notices, pay all taxes, duties and fees, and obtain all permits, licenses and approvals, as required by the Laws in relation to the execution and completion of the Works and the remedying of any defects; and the Contractor shall indemnify and hold the Procuring Entity harmless against and from the consequences of any failure to do so, unless the Contractor is impeded to accomplish these actions and shows evidence of its diligence.

1.14 Joint and Several Liability

If the Contractor constitutes (under applicable Laws) a joint venture, consortium or other unincorporated grouping of two or more persons:

- a) These persons shall be deemed to be jointly and severally liable to the Procuring Entity for the performance of the Contract;
- b) these persons shall notify the Procuring Entity of their leader who shall have authority to bind the Contractor and each of these persons; and
- c) the Contractor shall not alter its composition or legal status without the prior consent of the Procuring Entity.

1.15 Inspections and Audit by the Procuring Entity

Pursuant to paragraph 2.2(e). of Appendix B to the General Conditions, the Contractor shall permit and shall cause its subcontractors and sub-consultants to permit, the Public Procurement Regulatory Authority, Procuring Entity and/or persons appointed or designated by the Government of Kenya to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by the Procuring Entity if requested by the Procuring Entity. The Contractor's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 15.6 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Procuring Entity's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Procuring Entity's prevailing sanctions procedures).

2 THE PROCURING ENTITY

2.1 Right of Access to the Site

- 2.1.1 The Procuring Entity shall give the Contractor right of access to, and possession of, all parts of the Site within the time (or times) stated in the **Special Conditions of Contract**. The right and possession may not be exclusive to the Contractor. If, under the Contract, the Procuring Entity is required to give (to the Contractor) possession of any foundation, structure, plant or means of access, the Procuring Entity shall do so in the time and manner stated in the Specification. However, the Procuring Entity may withhold any such right or possession until the Performance Security has been received.
- 2.1.2 If no such time is stated in the Special Conditions of Contract, the Procuring Entity shall give the Contractor right of access to, and possession of, the Site within such times as required to enable the Contractor to proceed without disruption in accordance with the programme submitted under Sub-Clause 8.3 [Programme].
- 2.1.3 If the Contractor suffers delay and/or incurs Cost as a result of a failure by the Procuring Entity to give any such right or possession within such time, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
 - a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
 - b) payment of any such Cost-plus profit, which shall be included in the Contract Price.
- 2.1.4 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.
- 2.1.5 However, if and to the extent that the Procuring Entity's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit.

22 Permits, Licenses or Approvals

- 22.1 The Procuring Entity shall provide, at the request of the Contractor, such reasonable assistance as to allow the Contractor to obtain properly:
- a) Copies of the Laws of Kenya which are relevant to the Contract but are not readily available, and
 - b) any permits, licenses or approvals required by the Laws of Kenya:
 - i) which the Contractor is required to obtain under Sub-Clause 1.13 [Compliance with Laws],
 - ii) for the delivery of Goods, including clearance through customs, and
 - iii) for the export of Contractor's Equipment when it is removed from the Site.

23 Procuring Entity's Personnel

The Procuring Entity shall be responsible for ensuring that the Procuring Entity's Personnel and the Procuring Entity's other contractor son the Site:

- a) co-operate with the Contractor's efforts under Sub-Clause 4.6 [Co-operation], and
- b) take actions similar to those which the Contractor is required to take under sub-paragraphs (a), (b) and (c) of Sub-Clause 4.8 [Safety Procedures] and under Sub-Clause 4.18 [Protection of the Environment].

24 Procuring Entity's Financial Arrangements

The Procuring Entity shall make and maintain all necessary financial arrangements which will enable the Procuring Entity to pay the Contract Price punctually (as estimated at that time) in accordance with Clause14 [Contract Price and Payment].

3. THE ENGINEER

3.1 Architect Duties and Authority

- 3.1.1 The Procuring Entity shall appoint the Architect who shall carry out the duties as signed to him in the Contract. The Architect staff shall include suitably qualified Assistants and other professionals who are competent to carry out these duties. The Architect Name and Address shall be provided in the **Special Conditions of Contract**.
- 3.1.2 The Architect shall have no authority to amend the Contract.
- 3.1.3 The Architect May exercise the authority attributable to the Architect as specified in or necessarily to be implied from the Contract. If the Architect is required to obtain the approval of the Procuring Entity before exercising a specified authority, the requirements shall be as stated in the **Special Conditions of Contract**. The Procuring Entity shall promptly inform the Contractor of any change to the authority attributed to the Engineer.
- 3.1.4 However, whenever the Architect exercises a specified authority for which the Procuring Entity's approval is required, then (for the purposes of the Contract) the contractor shall require the Architect to provide evidence of such approval before complying with the instruction.
- 3.1.5 Except as otherwise stated in these Conditions:
- a) Whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Architect shall be deemed to act for the Procuring Entity;
 - b) the Architect has no authority to relieve either Party of any duties, obligations or responsibilities under the Contract;
 - c) any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by the Architect (including absence of disapproval) shall not relieve the Contractor from any responsibility he has under the Contract, including responsibility for errors, omissions, discrepancies and non-compliances; and
 - d) any act by the Architect in response to a Contractor's request shall be notified in writing to the Contractor within 14 days of receipt.

3.1.6 The following provisions shall apply:

The Architect shall obtain the specific approval of the Procuring Entity before taking action under the following Sub-Clauses of these Conditions:

- a) Sub-Clause 4.12: agreeing or determining an extension of time and/or additional cost.
- b) Sub-Clause 13.1: instructing a Variation, except;
 - i) In an emergency situation as determined by the Engineer, or
 - ii) If such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the **Special Conditions of Contract**.
- c) Sub-Clause 13.3: Approving a proposal for Variation submitted by the Contractor in accordance with Sub Clause 13.1 or 13.2.
- d) Sub-Clause 13.4: Specifying the amount payable in each of the applicable three currencies.

3.1.7 Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forth with comply, despite the absence of approval of the Procuring Entity, with any such instruction of the Engineer. The Architect shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 13 and shall notify the Contractor accordingly, with a copy to the Procuring Entity.

32 Delegation by the Engineer

3.2.1 The Architect may from time to time assign duties and delegate authority to assistants and may also revoke such assignment or delegation. These assistants may include a resident Engineer, and/or independent inspectors appointed to inspect and/ or test items of Plant and/or Materials. The assignment, delegation or revocation shall be in writing and shall not take effect until copies have been received by both Parties. However, unless otherwise agreed by both Parties, the Architect shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations].

3.2.2 Each assistant, to whom duties have been assigned or authority has been delegated, shall only be authorized to issue instructions to the Contractor to the extent defined by the delegation. Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by an assistant, in accordance with the delegation, shall have the same effect as though the act had been an act of the Engineer. However:

- a) Any failure to disapprove any work, Plant or Materials shall not constitute approval, and shall therefore not prejudice the right of the Architect to reject the work, Plant or Materials;
- b) If the Contractor questions any determination or instruction of an assistant, the Contractor may refer the matter to the Engineer, who shall promptly confirm, reverse or vary the determination or instruction.

33 Instructions of the Engineer

3.3.1 The Architect may issue to the Contractor (at any time) instructions and additional or modified Drawings which may be necessary for the execution of the Works and the remedying of any defects, all in accordance with the Contract. The Contractor shall only take instructions from the Engineer, or from an assistant to whom the appropriate authority has been delegated under Clause 3.2.1.

3.3.2 The Contractor shall comply with the instructions given by the Architect or delegated assistant, on any matter related to the Contract. Whenever practicable, their instructions shall be given in writing. If the Architect or a delegated assistant:

- a) Gives an oral instruction,
- b) receives a written confirmation of the instruction, from (or on behalf of) the Contractor, within two working days after giving the instruction, and
- c) does not reply by issuing a written rejection and/or instruction within two working days after receiving

the confirmation,

Then the confirmation shall constitute the written instruction of the Architect or delegated assistant (as the case may be).

3.4 Replacement of the Engineer

If the Procuring Entity intends to replace the Engineer, the Procuring Entity shall, in not less than 21 days before the intended date of replacement, give notice to the Contractor of the name, address and relevant experience of the intended person to replace the Engineer.

3.5 Determinations

3.5.1 Whenever these Conditions provide that the Architect shall proceed in accordance with this Sub-Clause 3.5 to agree or determine any matter, the Architect shall consult with each Party in an endeavor to reach agreement. If agreement is not achieved, the Architect shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.

3.5.1 The Architect shall give notice to both Parties of each agree mentor determination, with supporting particulars, within 30 days from the receipt of the corresponding claim or request except when otherwise specified. Each Party shall give effect to each agreement or determination unless and until revised under Clause 20 [Claims, Disputes and Arbitration].

4 THE CONTRACTOR

4.1 Contractor's General Obligations

4.1.1 The Contractor shall design (to the extent specified in the Contract), execute and complete the Works in accordance with the Contract and with the Architect instructions, and shall remedy any defects in the Works.

4.1.2 The Contractor shall provide the Plant and Contractor's Documents specified in the Contract, and all Contractor's Personnel, Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for this design, execution, completion and remedying of defects.

4.1.3 All equipment, material, and services to be incorporated in or required for the Works shall have their origin in any eligible source country.

4.1.4 The Contractor shall be responsible for the adequacy, stability and safety of all Site operations and of all methods of construction. Except to the extent specified in the Contract, the Contractor (i) shall be responsible for all Contractor's Documents, Temporary Works, and such design of each item of Plant and Materials as is required for the item to be in accordance with the Contract, and (ii) shall not otherwise be responsible for the design specification of the Permanent Works.

4.1.5 The Contractor shall, whenever required by the Engineer, submit details of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works. No significant alteration to these arrangements and methods shall be made without this having previously been notified to the Engineer.

4.1.6 If the Contract specifies that the Contractor shall design any part of the Permanent Works, then unless otherwise stated in the Special Conditions:

- a) The Contractor shall submit to the Architect the Contractor's Documents for this part in accordance with the procedures specified in the Contract;
- b) these Contractor's Documents shall be in accordance with the Specification and Drawings, shall be written in the language for communications defined in Sub-Clause 1.4 [Law and Language], and shall include additional information required by the Architect to add to the Drawings for co-ordination of each Party's designs;
- c) the Contractor shall be responsible for this part and it shall, when the Works are completed, befit for such purposes for which the part is intended as are specified in the Contract; and
- d) prior to the commencement of the Tests on Completion, the Contractor shall submit to the Architect the "as-built" documents and, if applicable, operation and maintenance manuals in accordance with the Specification and in sufficient detail for the Procuring Entity to operate, maintain, dismantle, reassemble, adjust and repair this part of the Works. Such part shall not be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections] until these documents and manuals have been submitted to the Engineer.

42 Performance Security

- 42.1 The Contractor shall obtain (at his cost) a Performance Security for proper performance, in the amount stated in the **Special Conditions of Contract** and denominated in the currency (ies) of the Contract or in a freely convertible currency acceptable to the Procuring Entity. If an amount is not stated in the Special Conditions of Contract, this Sub-Clause shall not apply.
- 42.2 The Contractor shall deliver the Performance Security to the Procuring Entity within 30 days after receiving the Notification of Award and shall send a copy to the Engineer. The Performance Security shall be issued by a reputable bank selected by the Contractor and shall be in the form annexed to the Special Conditions, as stipulated by the Procuring Entity in the Special Conditions of Contract, or in another form approved by the Procuring Entity.
- 42.3 The Contractor shall ensure that the Performance Security is valid and enforceable until the Contractor has executed and completed the Works and remedied any defects. If the terms of the Performance Security specify its expiry date, and the Contractor has not become entitled to receive the Performance Certificate by the date 30 days prior to the expiry date, the Contractor shall extend the validity of the Performance Security until the Works have been completed and any defects have been remedied.
- 42.4 The Procuring Entity shall not make a claim under the Performance Security, except for amounts to which the Procuring Entity is entitled under the Contract.
- 42.5 The Procuring Entity shall indemnify and hold the Contractor harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from a claim under the Performance Security to the extent to which the Procuring Entity was not entitled to make the claim.
- 42.6 The Procuring Entity shall return the Performance Security to the Contractor within 14 days after receiving a copy of the Taking-Over Certificate.
- 42.7 Without limitation to the provisions of the rest of this Sub-Clause, whenever the Architect determines an addition or a reduction to the Contract Price as a result of a change in cost and/ or legislation, or as a result of a Variation, amounting to more than 25 percent of the portion of the Contract Price payable in a specific currency, the Contractor shall at the Architect request promptly increase, or may decrease, as the case may be, the value of the Performance Security in that currency by an equal percentage.

43 Contractor's Representative

- 43.1 The Contractor shall appoint the Contractor's Representative and shall give him all authority necessary to act on the Contractor's behalf under the Contract. The Contractor's Representative's Name and Address shall be provided in the **Special Conditions of Contract**.
- 43.2 Unless the Contractor's Representative **is named in the Contract**, the Contractor shall, prior to the Commencement Date, submit to the Architect for consent the name and particulars of the person the Contractor proposes to appoint as Contractor's Representative. If consent is withheld or subsequently revoked in terms of Sub-Clause 6.9 [Contractor's Personnel], or if the appointed person fails to act as Contractor's Representative, the Contractor shall similarly submit the name and particulars of another suitable person for such appointment.
- 43.3 The Contractor shall not, without the prior consent of the Engineer, revoke the appointment of the Contractor's Representative or appoint a replacement.
- 43.4 The whole time of the Contractor's Representative shall be given to directing the Contractor's performance of the Contract. If the Contractor's Representative is to be temporarily absent from the Site during the execution of the Works, a suitable replacement person shall be appointed, subject to the Architect prior consent, and the Architect shall be notified accordingly.
- 43.5 The Contractor's Representative shall, on behalf of the Contractor, receive instructions under Sub-Clause 3.3 [Instructions of the Engineer].
- 43.6 The Contractor's Representative may delegate any powers, functions and authority to any competent person, and may at any time revoke the delegation. Any delegation or revocation shall not take effect until the Architect has received prior notice signed by the Contractor's Representative, naming the person and specifying the powers, functions and authority being delegated or revoked.

- 43.7 The Contractor's Representative shall be fluent in the language for communications defined in Sub-Clause 1.4 [Law and Language]. If the Contractor's Representative's delegates are not fluent in the said language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.

44 Sub-contractors

- 44.1 The Contractor shall not subcontract the whole of the Works. The contractor may however subcontract the works as provided in Clause 34.2.
- 44.2 The Contractor shall be responsible for the acts or defaults of any Subcontractor, his agents or employees, as if they were the acts or defaults of the Contractor. Unless otherwise stated in the Special Conditions:
- a) The Contractor shall not be required to obtain consent to suppliers solely of Materials, or to a subcontract for which the Subcontractor is named in the Contract;
 - b) The prior consent of the Procuring Entity shall be obtained to other proposed Subcontractors;
 - c) the Contractor shall give the Procuring Entity not less than 14 days' notice of the intended date of the commencement of each Subcontractor's work, and of the commencement of such work on the Site; and
 - d) each subcontract shall include provisions which would entitle the Procuring Entity to require the subcontract to be assigned to the Procuring Entity under Sub-Clause 4.5 [Assignment of Benefit of Subcontract] (if or when applicable) or in the event of termination under Sub-Clause 15.2 [Termination by Procuring Entity].
- 44.3 The Contractor shall ensure that the requirements imposed on the Contractor by Sub-Clause 1.12 [Confidential Details] apply equally to each Subcontractor.
- 44.4 Where practicable, the Contractor shall give fair and reasonable opportunity for contractors from Kenya to be appointed as Subcontractors.

45 Assignment of Benefit of Subcontract

If a Subcontractor's obligations extend beyond the expiry date of the relevant Defects Notification Period and the Engineer, prior to this date, instructs the Contractor to assign the benefit of such obligations to the Procuring Entity, then the Contractor shall do so. Unless otherwise stated in the assignment, the Contractor shall have no liability to the Procuring Entity for the work carried out by the Subcontractor after the assignment takes effect.

46 Co-operation

- 46.1 The Contractor shall, as specified in the Contract or as instructed by the Engineer, allow appropriate opportunities for carrying out work to:
- a) The Procuring Entity's Personnel,
 - b) Any other contractors employed by the Procuring Entity, and
 - c) The personnel of any legally constituted public authorities, who may be employed in the execution on or near the Site of any work not included in the Contract.
- 46.2 Any such instruction shall constitute a Variation if and to the extent that it causes the Contractor to suffer delays and/or to incur Unforeseeable Cost. Services for these personnel and other contractors may include the use of Contractor's Equipment, Temporary Works or access arrangements which are the responsibility of the Contractor.
- 46.3 If, under the Contract, the Procuring Entity is required to give to the Contractor possession of any foundation, structure, plant or means of access in accordance with Contractor's Documents, the Contractor shall submit such documents to the Architect in the time and manner stated in the Specification.

4.7 Setting Out of the Works

- 4.7.1 The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Contractor notified by the Engineer. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works.
- 4.7.2 The Procuring Entity shall be responsible for any errors in these specified or notified items of reference, but the Contractor shall use reasonable efforts to verify their accuracy before they are used.
- 4.7.3 If the Contractor suffers delay and/or incurs Cost from executing work which was necessitated by an error in these items of reference, and an experienced contractor could not reasonably have discovered such error and avoided this delay and/ or Cost, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
- a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
 - b) payment of any such costs accrued, which shall be included in the Contract Price.
- 4.7.4 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent the error could not reasonably have been discovered, and (ii) the matters described in sub-paragraphs (a) and (b) above related to these.

4.8 Safety Procedures

The Contractor shall:

- a) Comply with all applicable safety regulations,
- b) Take care for the safety of all persons entitled to be on the Site,
- c) Use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons,
- d) provide fencing, lighting, guarding and watching of the Works until completion and taking over under Clause 10 [Procuring Entity's Taking Over], and
- e) provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land.

4.9 Quality Assurance

- 4.9.1 The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract. The system shall be in accordance with the details stated in the Contract. The Architect shall be entitled to audit any aspect of the system.
- 4.9.2 Details of all procedures and compliance documents shall be submitted to the Architect for information before each design and execution stage is commenced. When any document of a technical nature is issued to the Engineer, evidence of the prior approval by the Contractor itself shall be apparent on the document itself.

Compliance with the quality assurance system shall not relieve the Contractor of any of his duties, obligations or responsibilities under the Contract.

4.10 Site Data

- 4.10.1 The Procuring Entity shall have made available to the Contractor for his information, prior to the Base Date, all relevant data in the Procuring Entity's possession on sub-surface and hydrological conditions at the Site, including environmental aspects. The Procuring Entity shall similarly make available to the Contractor all such data which come into the Procuring Entity's possession after the Base Date. The Contractor shall be responsible for interpreting all such data.
- 4.10.2 To the extent which was practicable (taking account of cost and time), the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works. To the same extent, the Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to

have been satisfied before submitting the Tender as to all relevant matters, including (without limitation):

- a) The form and nature of the Site, including sub-surface conditions,
- b) the hydrological and climatic conditions,
- c) the extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects,
- d) the Laws, procedures and labour practices of Kenya, and
- e) the Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services.

4.11 Sufficiency of the Accepted Contract Amount

4.11.1 The Contractor shall be deemed to:

- a) Have satisfied itself as to the correctness and sufficiency of the Accepted Contract Amount, and
- b) have based the Accepted Contract Amount on the data, interpretations, necessary information, inspections, examinations and satisfaction as to all relevant matters referred to in Sub-Clause 4.10 [Site Data].

4.11.2 Unless otherwise stated in the Contract, the Accepted Contract Amount covers all the Contractor's obligations under the Contract (including those under Provisional Sums, if any) and all things necessary for the proper execution and completion of the Works and the remedying of any defects.

4.12 Unforeseeable Physical Conditions

4.12.1 In this Sub-Clause, "physical conditions" means natural physical conditions and man-made and other physical obstructions and pollutants, which the Contractor encounters at the Site when executing the Works, including sub-surface and hydrological conditions but excluding climatic conditions.

4.12.2 If the Contractor encounters adverse physical conditions which he considers to have been Unforeseeable, the Contractor shall give notice to the Architect as soon as practicable.

4.12.3 This notice shall describe the physical conditions, so that they can be inspected by the Architect and shall set out the reasons why the Contractor considers them to be Unforeseeable. The Contractor shall continue executing the Works, using such proper and reasonable measures as are appropriate for the physical conditions, and shall comply with any instructions which the Architect may give. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.

4.12.4 If and to the extent that the Contractor encounters physical conditions which are Unforeseeable, gives such a notice, and suffers delay and/or incurs Cost due to these conditions, the Contractor shall be entitled subject to notice under Sub-Clause 20.1 [Contractor's Claims] to:

- a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- b) payment of any such Cost, which shall be included in the Contract Price.

4.12.5 Upon receiving such notice and inspecting and/or investigating these physical conditions, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent these physical conditions were Unforeseeable, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this extent.

4.12.6 However, before additional Cost is finally agreed or determined under sub-paragraph (ii), the Architect may also review whether other physical conditions in similar parts of the Works (if any) were more favorable than could reasonably have been foreseen when the Contractor submitted the Tender. If and to the extent that these more favorable conditions were encountered, the Architect may proceed in accordance with Sub-Clause 3.5

[Determinations] to agree or determine the reductions in Cost which were due to these conditions, which may be included (as deductions) in the Contract Price and Payment Certificates. However, the net effect of all adjustments under sub-paragraph (b) and all these reductions, for all the physical conditions encountered in similar parts of the Works, shall not result in a net reduction in the Contract Price.

- 4.12.7 The Architect shall take account of any evidence of the physical conditions foreseen by the Contractor when submitting the Tender, which shall be made available by the Contractor, but shall not be bound by the Contractor's interpretation of any such evidence.

4.13 Rights of Way and Facilities

Unless otherwise specified in the Contract the Procuring Entity shall provide effective access to and possession of the Site including special and/or temporary rights-of-way which are necessary for the Works. The Contractor shall obtain, at his risk and cost, any additional rights of way or facilities outside the Site which he may require for the purposes of the Works.

4.14 Avoidance of Interference

- 4.14.1 The Contractor shall not interfere unnecessarily or improperly with:
- a) The convenience of the public, or
 - b) The access to and use and occupation of all roads and foot paths, irrespective of whether they are public or in the possession of the Procuring Entity or of others.
- 4.14.2 The Contractor shall indemnify and hold the Procuring Entity harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from any such unnecessary or improper interference.

4.15 Access Route

- 4.15.1 The Contractor shall be deemed to have been satisfied as to the suitability and availability of access routes to the Site at Base Date. The Contractor shall use reasonable efforts to prevent any road or bridge from being damaged by the Contractor's traffic or by the Contractor's Personnel. These efforts shall include the proper use of appropriate vehicles and routes.
- 4.15.2 Except as otherwise stated in these Conditions:
- a) The Contractor shall (as between the Parties) be responsible for any maintenance which may be required for his use of access routes;
 - b) the Contractor shall provide all necessary signs or directions along access routes, and shall obtain any permission which may be required from the relevant authorities for his use of routes, signs and directions;
 - c) the Procuring Entity shall not be responsible for any claims which may arise from the use or otherwise of any access route;
 - d) the Procuring Entity does not guarantee the suitability or availability of particular access routes; and
 - e) Costs due to non-suitability or non-availability, for the use required by the Contractor, of access routes shall be borne by the Contractor.

4.16 Transport of Goods

Unless otherwise stated in the Special Conditions:

- a) the Contractor shall give the Architect not less than 21 days' notice of the date on which any Plant or a major item of other Goods will be delivered to the Site;
- b) the Contractor shall be responsible for packing, loading, transporting, receiving, unloading, storing and protecting all Goods and other things required for the Works; and
- c) the Contractor shall indemnify and hold the Procuring Entity harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from the transport of Goods and shall negotiate and pay all claims arising from their transport.

4.17 Contractor's Equipment

The Contractor shall be responsible for all Contractors' Equipment. When brought on to the Site, Contractor's Equipment shall be deemed to be exclusively intended for the execution of the Works. The Contractor shall not remove from the Site any major items of Contractor's Equipment without the consent of the Engineer. However, consent shall not be required for vehicles transporting Goods or Contractor's Personnel off Site.

4.18 Protection of the Environment

- 4.18.1 The contractor shall comply with the applicable environmental laws, regulations and policies.
- 4.18.2 The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.
- 4.18.3 The Contractors shall ensure that emissions, surfaced is charges and effluent from the Contractor's activities shall not exceed the values stated in the Specification or prescribed by applicable Laws.

4.19 Electricity, Water and Gas

- 4.19.1 The Contractor shall, except as stated below, be responsible for the provision of all power, water and other services he may require for his construction activities and to the extent defined in the Specifications, for the tests.
- 4.19.2 The Contractor shall be entitled to use for the purposes of the Works such supplies of electricity, water, gas and other services as may be available on the Site and of which details and prices are given in the Specifications. The Contractor shall, at his risk and cost, provide any apparatus necessary for his use of these services and for measuring the quantities consumed.
- 4.19.3 The quantities consumed and the amounts due (at these prices) for such services shall be agreed or determined by the Architect in accordance with Sub-Clause 2.5 [Procuring Entity's Claims] and Sub-Clause 3.5 [Determinations]. The Contractor shall pay these amounts to the Procuring Entity.

4.20 Procuring Entity's Equipment and Free-Issue Materials

- 4.20.1 The Procuring Entity shall make the Procuring Entity's Equipment (if any) available for the use of the Contractor in the execution of the Works in accordance with the details, arrangements and prices stated in the Specification. Unless otherwise stated in the Specification:
 - a) The Procuring Entity shall be responsible for the Procuring Entity's Equipment, except that
 - b) the Contractor shall be responsible for each item of Procuring Entity's Equipment whilst any of the Contractor's Personnel is operating it, driving it, directing it or in possession or control of it.
- 4.20.1 The appropriate quantities and the amounts due (at such stated prices) for the use of Procuring Entity's Equipment shall be agreed or determined by the Architect in accordance with Sub-Clause 2.5 [Procuring Entity's Claims] and Sub-Clause 3.5 [Determinations]. The Contractor shall pay these amounts to the Procuring Entity.
- 4.20.2 The Procuring Entity shall supply, free of charge, the "free-issue materials" (if any) in accordance with the details stated in the Specification. The Procuring Entity shall, at his risk and cost, provide these materials at the time and place specified in the Contract. The Contractor shall then visually inspect them and shall promptly give notice to the Architect of any shortage, defect or default in these materials. Unless otherwise agreed by both Parties, the Procuring Entity shall immediately rectify the notified shortage, defect or default.
- 4.20.3 After this visual inspection, the free-issue materials shall come under the care, custody and control of the Contractor. The Contractor's obligations of inspection, care, custody and control shall not relieve the Procuring Entity of liability for any shortage, defect or default not apparent from a visual inspection.

421 Progress Reports

- 421.1 Unless otherwise stated in the Special Conditions, monthly progress reports shall be prepared by the Contractor and submitted to the Architect in six copies. The first report shall cover the period up to the end of the first calendar month following the Commencement Date. Reports shall be submitted monthly thereafter, each within 7 days after the last day of the period to which it relates.
- 421.2 Reporting shall continue until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works. Each report shall include:
- a) charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection and testing; and including these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),
 - b) photographs showing the status of manufacture and of progress on the Site;
 - c) for the manufacture of each main item of Plant and Materials, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of:
 - i) commencement of manufacture,
 - ii) Contractor's inspections,
 - iii) tests, and
 - iv) shipment and arrival at the Site;
 - d) the details described in Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment];
 - e) copies of quality assurance documents, test results and certificates of Materials;
 - f) list of notices given under Sub-Clause 2.5 [Procuring Entity's Claims] and notices given under Sub-Clause 20.1 [Contractor's Claims];
 - g) safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and
 - h) comparison so factual and planned progress, with details of any events or circumstances which may jeopardize the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.

422 Security of the Site

Unless otherwise stated in the Special Conditions:

- a) The Contractor shall be responsible for keeping unauthorized persons off the Site, and
- b) authorized persons shall be limited to the Contractor's Personnel and the Procuring Entity's Personnel; and to any other personnel notified to the Contractor, by the Procuring Entity or the Engineer, as authorized personnel of the Procuring Entity's other contractors on the Site.

423 Contractor's Operations on Site

- 423.1 The Contractor shall confine his operations to the Site, and to any additional areas which may be obtained by the Contractor and agreed by the Architect as additional working areas. The Contractor shall take all necessary precautions to keep Contractor's Equipment and Contractor's Personnel within the Site and these additional areas, and to keep them off adjacent land.
- 423.2 During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish and Temporary Works which are no longer required.
- 423.3 Upon the issue of a Taking-Over Certificate, the Contractor shall clear away and remove, from that part of the Site and Works to which the Taking-Over Certificate refers, all Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works. The Contractor shall leave that part of the Site and the Works in a clean and safe condition. However, the Contractor may retain on Site, during the Defects Notification Period, such Goods as are required for the Contractor to fulfil obligations under the Contract.

424 Fossils

- 424.1 All fossils, coins, articles of value or antiquity, and structures and other remains or items of geological or archaeological interest found on the Site shall be placed under the care and authority of the Procuring Entity. The Contractor shall take reasonable precautions to prevent Contractor's Personnel or other persons from removing or damaging any of these findings.
- 424.2 The Contractor shall, upon discovery of any such finding, promptly give notice to the Engineer, who shall issue instructions for dealing with it. If the Contractor suffers delay and/or incurs Cost from complying with the instructions, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub- Clause 20.1 [Contractor's Claims] to:
- a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
 - b) payment of any such Cost, which shall be included in the Contract Price.
- After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

5 NOMINATED SUBCONTRACTORS

5.1 Definition of “nominated Subcontractor”

In this Contract, “nominated Subcontractor” means a Subcontractor:

- a) Who is nominated by the Procuring Entity, or
- b) Contractor has nominated as a Subcontractor subject to Sub-Clause 5.2 [Objection to Notification].

5.2 Objection to Nomination

The Contractor shall not be under any obligation to employ a nominated Subcontractor against whom the Contractor raises reasonable objection by notice to the Procuring Entity as soon as practicable, with supporting particulars. An objection shall be deemed reasonable if it arises from (among other things) any of the following matters, unless the Procuring Entity agrees in writing to indemnify the Contractor against and from the consequences of the matter:

- a) there are reasons to believe that the Subcontractor does not have sufficient competence, resources or financial strength;
- b) the nominated Subcontractor does not accept to indemnify the Contractor against and from any negligence or misuse of Goods by the nominated Subcontractor, his agents and employees; or
- c) the nominated Subcontractor does not accept to enter into a subcontract which specifies that, for the subcontracted work (including design, if any), the nominated Subcontractor shall:
 - i) undertake to the Contractor such obligations and liabilities as will enable the Contractor to discharge his obligations and liabilities under the Contract;
 - ii) indemnify the Contractor against and from all obligations and liabilities arising under or in connection with the Contract and from the consequences of any failure by the Subcontractor to perform these obligations or to fulfill these liabilities, and
 - iii) be paid only if and when the Contractor has received from the Procuring Entity payments for sums due under the Subcontract referred to under Sub-Clause 5.3 [Payment to nominated Subcontractors].

5.3 Payments to nominated Subcontractors

The Contractor shall pay to the nominated Subcontractor the amounts shown on the nominated Subcontractor's invoices approved by the Contractor which the Architect certifies to be due in accordance with the subcontract. These amounts plus other charges shall be included in the Contract Price in accordance with sub-paragraph (b) of Sub-Clause 13.5 [Provisional Sums], except as stated in Sub-Clause 5.4 [Evidence of Payments].

5.4 Evidence of Payments

- 5.4.1 Before issuing a Payment Certificate which includes an amount payable to a nominated Subcontractor, the Architect may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:

- (a) Submits this reasonable evidence to the Engineer, or
- (b) i) Satisfies the Architect in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and
 - ii) Submits to the Architect reasonable evidence that the nominated Subcontractor has been notified of the Contractor's entitlement, then the Procuring Entity may (at his sole discretion) pay, direct to the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Procuring Entity, the amount which the nominated Subcontractor was directly paid by the Procuring Entity.

6 STAFF AND LABOR

6.1 Engagement of Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labor, local or otherwise, and for their payment, feeding, transport, and, when appropriate, housing. The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labor with appropriate qualifications and experience from sources within Kenya.

6.2 Rates of Wages and Conditions of Labor

6.2.1 The Contractor shall pay rates of wages, and observe conditions of labor, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by Procuring Entity's whose trade or industry is similar to that of the Contractor.

6.2.2 The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in Kenya in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of Kenya for the time being in force, and the Contractor shall perform such duties in regard to such deductions there of as may be imposed on him by such Laws.

6.3 Persons in the Service of Procuring Entity

The Contractor shall not recruit, or attempt to recruit, staff and labour from amongst the Procuring Entity's Personnel.

6.4 Labour Laws

The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's Personnel, including Laws relating to their employment, employment of children, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights. The Contractor shall require his employees to obey all applicable Laws, including those concerning safety at work.

6.5 Working Hours

No work shall be carried out on the Site on locally recognized days of rest, or outside the normal working hours stated in the **Special Conditions of Contract**, unless:

- a) Otherwise stated in the Contract,
- b) The Architect gives consent, or
- c) The work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer, provided that work done outside the normal working hours shall be considered and paid for as overtime.

6.6 Facilities for Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities on site for the Contractor's Personnel. The Contractor shall also provide facilities for the Procuring Entity's Personnel as stated in the Specifications. The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.

6.7 Health and Safety

- 6.7.1 The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Procuring Entity's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.
- 6.7.2 The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.
- 6.7.3 The Contractor shall send, to the Engineer, details of any accident as soon as practicable after its occurrence. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Architect may reasonably require.
- 6.7.4 The Contractor shall conduct an awareness programme on HIV and other sexually transmitted diseases via an approved service provider and shall undertake such other measures taken to reduce the risk of the transfer of these diseases between and among the Contractor's Personnel and the local community, to promote early diagnosis and to assist affected individuals.

6.8 Contractor's Superintendence

- 6.8.1 Throughout the execution of the Works, and as long thereafter as is necessary to fulfill the Contractor's obligations, the Contractor shall provide all necessary superintendence to plan, arrange, direct, manage, inspect and test the work.
- 6.8.2 Superintendence shall be given by a sufficient number of persons having adequate knowledge of the language for communications (defined in Sub-Clause 1.4 [Law and Language]) and of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.

6.9 Contractor's Personnel

- 6.9.1 The Contractor's Personnel shall be appropriately qualified, skilled and experienced in their respective trades or occupations. The Contractor's Key personnel shall be named in the Special Conditions of Contract. The Architect may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative if applicable, who:
- a) Persists in any misconduct or lack of care,
 - b) Carries out duties in competently or negligently,
 - c) fails to conform with any provisions of the Contract,
 - d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment, or
 - e) based on reasonable evidence, is determined to have engaged in Fraud and Corruption during the execution of the Works.
- 6.9.2 If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.

6.10 Records of Contractor's Personnel and Equipment

The Contractor shall submit, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site. Details shall be submitted each calendar month, in a form approved by the Engineer, until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.

6.11 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel, and to preserve peace and protection of persons and property on and near the Site.

6.12 Foreign Personnel

- 6.12.1 The Contractor shall not employ foreign personnel unless the contractor demonstrates that there are no Kenyans with the required skills.
- 6.12.2 The Contractor shall be responsible for the return of any foreign personnel to the place where they were recruited or to their domicile. In the event of the death in Kenya of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial.

6.13 Supply of Water

The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.

6.14 Measures against Insect and Pest Nuisance

The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.

6.15 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of Kenya, onsite, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereof by Contractor's Personnel.

6.16 Prohibition of Forced or Compulsory Labour

The Contractor shall not employ forced labor, which consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements.

6.17 Prohibition of Harmful Child Labor

The Contractor shall not employ children in a manner that is economically exploitative, or is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. Where the relevant labour laws of Kenya have provisions for employment of minors, the Contractor shall follow those laws applicable to the Contractor. Children below the age of 18 years shall not be employed in dangerous work.

6.18 Employment Records of Workers

The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the Engineer. These records shall be included in the details to be submitted by the Contractor under Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment].

6.19 Workers' Organizations

The Contractor shall comply with the relevant labor laws that recognize workers' rights to form and to join workers' organizations of their choosing without interference.

6.20 Non-Discrimination and Equal Opportunity

The Contractor shall base the labour employment on the principle of equal opportunity and fair treatment and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, promotion, termination of employment, retirement, and discipline.

7. PLANT, MATERIALS AND WORKMANSHIP

7.1 Manner of Execution

The Contractor shall carry out the manufacture/assemble of plant, the production and manufacture of Materials, and all other execution of the Works:

- a) In the manner (if any) specified in the Contract,
- b) in a proper workman like and careful manner, in accordance with recognized good practice, and
- c) with properly equipped facilities and non-hazardous Materials, except as otherwise specified in the Contract.

7.2 Samples

The Contractor shall submit the following samples of Materials, and relevant information, to the Architect for consent prior to using the Material sin or for the Works:

- a) manufacturer's standard samples of Materials and samples specified in the Contract, all at the Contractor's cost, and
- b) additional samples instructed by the Architect as a Variation.

Each sample shall be labeled as to origin and intended use in the Works.

7.3 Inspection

7.3.1 The Procuring Entity's Personnel shall at all reasonable times:

- a) Have full access to all parts of the Site and to all places from which natural Materials are being obtained, and
- b) during production, manufacture and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of manufacture of Plant and production and manufacture of Materials.

7.3.2 The Contractor shall give the Procuring Entity's Personnel full opportunity to carry out these activities, including providing access, facilities, permissions and safety equipment. No such activity shall relieve the Contractor from any obligation or responsibility.

7.3.3 The Contractor shall give notice to the Architect whenever any work is ready and before it is covered up, put out of sight, or packaged for storage or transport. The Architect shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the Contractor that the Architect does not require to do so. If the Contractor fails to give the notice, he shall, if and when required by the Engineer, uncover the work and there after reinstate and make good, all at the Contractor's cost.

7.4 Testing

7.4.1 This Sub-Clause shall apply to all tests specified in the Contract.

7.4.2 Except as otherwise specified in the Contract, the Contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel, consumables, instruments, labor, materials, and suitably qualified and experienced staff, as are necessary to carry out the specified tests efficiently. The Contractor shall agree, with the Engineer, the time and place for the specified testing of any Plant, Materials and other parts of the Works.

7.4.3 The Architect may, under Clause 13 [Variations and Adjustments], vary the location or details of specified tests, or instruct the Contractor to carry out additional tests. If these varied or additional tests show that the tested Plant, Materials or workmanship is not in accordance with the Contract, the cost of carrying out this Variation shall be borne by the Contractor, notwithstanding other provisions of the Contract.

7.4.4 The Architect shall give the Contractor not less than 24 hours' notice of the Architect intention to attend the tests. If the Architect does not attend at the time and place agreed, the Contractor may proceed with the tests, unless otherwise instructed by the Engineer, and the tests shall then be deemed to have been made in the Architect presence.

7.4.5 If the Contractor suffers delay and/ or incurs Cost from complying with these instructions or as a result of

a delay for which the Procuring Entity is responsible, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- b) payment of any such Cost-plus profit, which shall be included in the Contract Price.

74.6 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

74.7 The Contractor shall promptly forward to the Architect duly certified reports of the tests. When the specified tests have been passed, the Architect shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect. If the Architect has not attended the tests, he shall be deemed to have accepted the readings as accurate.

75 Rejection

75.1 If, as a result of an examination, inspection, measurement or testing, any Plant, Materials or workmanship is found to be defective or otherwise not in accordance with the Contract, the Architect may reject the Plant, Materials or workmanship by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item complies with the Contract.

75.2 If the Architect requires this Plant, Materials or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If the rejection and retesting cause the Procuring Entity to incur additional costs, the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay these costs to the Procuring Entity.

76 Remedial Work

76.1 Notwithstanding any previous test or certification, the Architect may instruct the Contractor to:

- a) Remove from the Site and replace any Plant or Materials which is not in accordance with the Contract,
- b) remove and re-execute any other work which is not in accordance with the Contract, and
- c) execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseen able event or otherwise.

76.2 The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency is specified under sub-paragraph (c).

76.3 If the Contractor fails to comply with the instruction, the Procuring Entity shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay to the Procuring Entity all costs arising from this failure.

76.4 If the contractor repeatedly delivers defective work, the Procuring Entity may consider termination in accordance with Clause 15.

7.7 Ownership of Plant and Materials

Except as otherwise provided in the Contract, each item of Plant and Materials shall become the property of the Procuring Entity at whichever is the earlier of the following times, free from liens and other encumbrances:

- a) When it is incorporated in the Works;
- b) when the Contractor is paid the corresponding value of the Plant and Materials under Sub-Clause 8.10 [Payment for Plant and Materials in Event of Suspension].

78 Royalties

Unless otherwise stated in the Specification, the Contractor shall pay all royalties, rents and other payments for:

- a) Natural materials obtained from outside the Site, and
- b) The disposal of material from demolitions and excavations and of other surplus material (whether natural or man-made), except to the extent that disposal are as within the Site are specified in the Contract.

8 COMMENCEMENT, DELAYS AND SUSPENSION

8.1 Commencement of Works

8.1.1 Except as otherwise specified in the Special Conditions of Contract, the Commencement Date shall be the date at which the following precedent condition shave all been fulfilled and the Architect notification recording the agreement of both Parties on such fulfillment and instructing to commence the Work is received by the Contractor:

- a) Signature of the Contract Agreement by both Parties, and if required, approval of the Contract by relevant authorities of Kenya;
- b) except if otherwise specified in the Special Conditions of Contract, effective access to and possession of the Site given to the Contractor together with such permission(s) under (a) of Sub-Clause 1.13 [Compliance with Laws] as required for the commencement of the Works.
- c) Receipt by the Contractor of the Advance Payment under Sub-Clause 14.2 [Advance Payment] provided that the corresponding bank guarantee has been delivered by the Contractor.

8.1.2 If the said Architect instruction is not received by the Contractor within 180 days from his receipt of the Letter of Acceptance, the Contractor shall be entitled to terminate the Contract under Sub-Clause 16.2 [Termination by Contractor].

8.1.3 The Contractor shall commence the execution of the Works as soon as is reasonably practicable after the Commencement Date and shall then proceed with the Works with due expedition and without delay.

8.2 Time for Completion

The Contractor shall complete the whole of the Works, and each Section (if any), within the Time for Completion for the Works or Section (as the case may be), including:

- a) Achieving the passing of the Tests on Completion, and
- b) completing all work which is stated in the Contract as being required for the Works or Section to be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections].

8.3 Programme

8.3.1 The Contractor shall submit a detailed time programme to the Architect within 14 days after receiving the notice under Sub-Clause 8.1 [Commencement of Works]. The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress or with the Contractor's obligations. Each programme shall include:

- a) The order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design (if any), Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing,
- b) each of these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),
- c) the sequence and timing of inspections and tests specified in the Contract, and
- d) a supporting report which includes:
 - i) a general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and
 - ii) details showing the Contractor's reasonable estimate of the number of each class of Contractor's Personnel and of each type of Contractor's Equipment, required on the Site for each major stage.

8.3.2 Unless the Engineer, within 14 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Procuring Entity's Personnel shall be entitled to rely upon the programme when planning their activities.

8.3.3 The Contractor shall promptly give notice to the Architect of specific probable future events or circumstances which may adversely affect the work, increase the Contract Price or delay the execution of the Works.

- 83.4 If, at any time, the Architect gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contractor to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Architect in accordance with this Sub-Clause.

84 Extension of Time for Completion

- 84.1 The Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to an extension of the Time for Completion if and to the extent that completion for the purposes of Sub-Clause 10.1 [Taking Over of the Works and Sections] is or will be delayed by any of the following causes:
- a) a Variation (unless an adjustment to the Time for Completion has been agreed under Sub-Clause 13.3 [Variation Procedure]) or other substantial change in the quantity of an item of work included in the Contract,
 - b) a cause of delay giving an entitlement to extension of time under a Sub-Clause of these Conditions,
 - c) exceptionally adverse climatic conditions,
 - d) Unforeseeable shortages in the availability of personnel or Goods caused by epidemic or governmental actions, or
 - e) any delay, impediment or prevention caused by or attributable to the Procuring Entity, the Procuring Entity's Personnel, or the Procuring Entity's other contractors.
- 84.2 If the Contractor considers itself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Architect in accordance with Sub-Clause 20.1 [Contractor's Claims]. When determining each extension of time under Sub-Clause 20.1, the Architect shall review previous determinations and may increase, but shall not decrease, the total extension of time.

85 Delays Caused by Authorities

If the following conditions apply, namely:

- a) The Contractor has diligently followed the procedures laid down by the relevant legally constituted public authorities in Kenya,
- b) These authorities delay or disrupt the Contractor's work, and
- c) the delay or disruption was Unforeseeable, then this delay or disruption will be considered as a cause of delay under sub-paragraph (b) of Sub-Clause 8.4 [Extension of Time for Completion].

86 Rate of Progress

- 86.1 If, at any time:
- a) Actual progress is too slow to complete within the Time for Completion, and/or
 - b) Progress has fallen (or will fall) behind the current programme under Sub-Clause 8.3 [Programme], other than as a result of a cause listed in Sub-Clause 8.4 [Extension of Time for Completion], then the Architect may instruct the Contractor to submit, under Sub-Clause 8.3 [Programme], a revised programme and supporting report describing the revised methods which the Contractor proposes to adopt in order to expedite progress and complete within the Time for Completion.
- 86.2 Unless the Architect notifies otherwise, the Contractor shall adopt these revised methods, which may require increases in the working hours and/or in the numbers of Contractor's Personnel and/or Goods, at the risk and cost of the Contractor. If these revised methods cause the Procuring Entity to incur additional costs, the Contractor shall subject to notice under Sub-Clause 2.5 [Procuring Entity's Claims] pay these costs to the Procuring Entity, in addition to delay damages (if any) under Sub-Clause 8.7 below.
- 86.3 Additional costs of revised methods including acceleration measures, instructed by the Architect to reduce delays resulting from causes listed under Sub-Clause 8.4 [Extension of Time for Completion] shall be paid by the Procuring Entity, without generating, however, any other additional payment benefit to the Contractor.

87 Delay Damages

- 87.1 If the Contractor fails to comply with Sub-Clause 8.2 [Time for Completion], the Contractor shall subject to notice under Sub-Clause 2.5 [Procuring Entity's Claims] pay delay damages to the Procuring Entity for this default. These delay damages shall be the sum stated in the **Special Conditions of Contract**, which shall be paid for everyday which shall elapse between the relevant Time for Completion and the date stated

in the

Taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of delay damages (if any) stated in the Special Conditions of Contract.

- 8.7.2 These delay damages shall be the only damages due from the Contractor for such default, other than in the event of termination under Sub-Clause 15.2 [Termination by Procuring Entity] prior to completion of the Works. These damages shall not relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract.

8.8 Suspension of Work

- 8.8.1 The Architect may at any time instruct the Contractor to suspend progress of part or all of the Works. During such suspension, the Contractor shall protect, store and secure such part or the Works against any deterioration, loss or damage.

- 8.8.2 The Architect may also notify the cause for the suspension. If and to the extent that the cause is notified and is the responsibility of the Contractor, the following Sub-Clauses 8.9, 8.10 and 8.11 shall not apply.

8.9 Consequences of Suspension

- 8.9.1 If the Contractor suffers delay and/or incurs Cost from complying with the Architect instructions under Sub-Clause 8.8 [Suspension of Work] and/or from resuming the work, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- b) Payment of any such Cost, which shall be included in the Contract Price.

- 8.9.2 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

- 8.9.3 The Contractor shall not be entitled to an extension of time for, or to payment of the Cost incurred in, making good the consequences of the Contractor's faulty design, workmanship or materials, or of the Contractor's failure to protect, store or secure in accordance with Sub-Clause 8.8 [Suspension of Work].

8.10 Payment for Plant and Materials in Event of Suspension

The Contractor shall be entitled to payment of the value (as at the date of suspension) of Plant and/ or Materials which have not been delivered to Site, if:

- a) The work on Plant or delivery of Plant and/ or Materials has been suspended for more than 30 days, and
- b) the Contractor has marked the Plant and/or Materials as the Procuring Entity's property in accordance with the Architect instructions.

8.11 Prolonged Suspension

If the suspension under Sub-Clause 8.8 [Suspension of Work] has continued for more than 84 days, the Contractor may request the Architect permission to proceed. If the Architect does not give permission within 30 days after being requested to do so, the Contractor may, by giving notice to the Engineer, treat the suspension as an omission under Clause 13 [Variations and Adjustments] of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice of termination under Sub-Clause 16.2 [Termination by Contractor].

8.12 Resumption of Work

After the permission or instruction to proceed is given, the Contractor and the Architect shall jointly examine the Works and the Plant and Materials affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant or Materials, which has occurred during the suspension after receiving from the Architect an instruction to this effect under Clause 13 [Variations and Adjustments].

9. TESTS ON COMPLETION

9.1 Contractor's Obligations

- 9.1.1 The Contractor shall carry out the Tests on Completion in accordance with this Clause and Sub-Clause 7.4 [Testing], after providing the documents in accordance with sub-paragraph (d) of Sub-Clause 4.1 [Contractor's General Obligations].
- 9.1.2 The Contractor shall give to the Architect not less than 21 days' notice of the date after which the Contractor will be ready to carry out each of the Tests on Completion. Unless otherwise agreed, Tests on Completion shall be carried out within 14 days after this date, on such day or days as the Architect shall instruct.
- 9.1.3 In considering the results of the Tests on Completion, the Architect shall make allowances for the effect of any use of the Works by the Procuring Entity on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed any Tests on Completion, the Contractor shall submit a certified report of the results of these Tests to the Engineer.

9.2 Delayed Tests

- 9.2.1 If the Tests on Completion are being unduly delayed by the Procuring Entity, Sub-Clause 7.4 [Testing] (fifth paragraph) and/ or Sub-Clause 10.3 [Interference with Tests on Completion] shall be applicable.
- 9.2.2 If the Tests on Completion are being unduly delayed by the Contractor, the Architect may by notice require the Contractor to carry out the Tests within 21 days after receiving the notice. The Contractor shall carry out the Tests on such day or days within that period as the Contractor may fix and of which he shall give notice to the Engineer.
- 9.2.3 If the Contractor fails to carry out the Tests on Completion within the period of 21 days, the Procuring Entity's Personnel may proceed with the Test at the risk and cost of the Contractor. The Tests on Completion shall then be deemed to have been carried out in the presence of the Contractor and the results of the Tests shall be accepted as accurate.

9.3 Retesting of related works

If the Works, or a Section, fail to pass the Tests on Completion, Sub-Clause 7.5 [Rejection] shall apply, and the Architect or the Contractor may require the failed Tests, and Tests on Completion on any related work, to be repeated under the same terms and conditions.

9.4 Failure to Pass Tests on Completion

- 9.4.1 If the Works, or a Section, fail to pass the Tests on Completion repeated under Sub-Clause 9.3 [Retesting], the Architect shall be entitled to:
- a) Order further repetition of Tests on Completion under Sub-Clause 9.3; or
 - b) if the failure deprives the Procuring Entity of substantially the whole benefit of the Works or Section, reject the Works or Section (as the case may be), in which event the Procuring Entity shall have the same remedies as are provided in sub-paragraph (c) of Sub-Clause 1.4 [Failure to Remedy Defects].

10. PROCURING ENTITY'S TAKING OVER

10.1 Taking Over of the Works and Sections

- 10.1.1 Except as stated in Sub-Clause 9.4 [Failure to Pass Tests on Completion], the Works shall be taken over by the Procuring Entity when (i) the Works have been completed in accordance with the Contract, including the matters described in Sub-Clause 8.2 [Time for Completion] and except as allowed in sub-paragraph (a) below, and (ii) a Taking-Over Certificate for the Works has been issued, or is deemed to have been issued in accordance with this Sub-Clause.
- 10.1.2 The Contractor may apply by notice to the Architect for a Taking-Over Certificate not earlier than 14 days before the Works will, in the Contractor's opinion, be complete and ready for taking over. If the Works are divided into Sections, the Contractor may similarly apply for a Taking-Over Certificate for each Section.

- 101.3 The Architect shall, within 30 days after receiving the Contractor's application:
- a) Issue the Taking-Over Certificate to the Contractor, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor outstanding work and defects which will not substantially affect the use of the Works or Section for their intended purpose (either until or whilst this work is completed and these defects are remedied); or
 - b) reject the application, giving reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued. The Contractor shall then complete this work before issuing a further notice under this Sub-Clause.
- 101.4 If the Architect fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of 30 days, and if the Works or Section (as the case may be) are substantially in accordance with the Contract, the Taking-Over Certificate shall be deemed to have been issued on the last day of that period.

102 Taking Over of Parts of the Works

- 102.1 The Architect may, at the sole discretion of the Procuring Entity, issue a Taking-Over Certificate for any part of the Permanent Works.
- 102.2 The Procuring Entity shall not use any part of the Works (other than as a temporary measure which is either specified in the Contract or agreed by both Parties) unless and until the Architect has issued a Taking-Over Certificate for this part. However, if the Procuring Entity does use any part of the Works before the Taking-Over Certificate is issued:
- a) The part which is used shall be deemed to have been taken over as from the date on which it is used,
 - b) the Contractor shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the Procuring Entity, and
 - c) if requested by the Contractor, the Architect shall issue a Taking-Over Certificate for this part.
- 102.3 After the Architect has issued a Taking-Over Certificate for a part of the Works, the Contractor shall be given the earliest opportunity to take such steps as may be necessary to carry out any outstanding Tests on Completion. The Contractor shall carry out these Tests on Completion as soon as practicable before the expiry date of the relevant Defects Notification Period.
- 102.4 If the Contractor incurs Cost as a result of the Procuring Entity taking over and/or using a part of the Works, other than such use as is specified in the Contract agreed by the Contractor, the Contractor shall (i) give notice to the Architect and (ii) be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to payment of any such accrued costs, which shall be included in the Contract Price. After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this accrued cost.
- 102.5 If a Taking-Over Certificate has been issued for a part of the Works (other than a Section), the delay damages there after for completion of the remainder of the Works shall be reduced. Similarly, the delay damages for the remainder of the Section (if any) in which this part is included shall also be reduced. For any period of delay after the date stated in this Taking-Over Certificate, the proportional reduction in these delay damages shall be calculated as the proportion which the value of the part so certified bears to the value of the Works or Section (as the case may be) as a whole. The Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these proportions. The provisions of this paragraph shall only apply to the daily rate of delay damages under Sub-Clause 8.7 [Delay Damages] and shall not affect the maximum amount of these damages.

103 Interference with Tests on Completion

- 103.1 If the Contractor is prevented, for more than 14 days, from carrying out the Tests on Completion by a cause for which the Procuring Entity is responsible, the Procuring Entity shall be deemed to have taken over the Works or Section (as the case may be) on the date when the Tests on Completion would otherwise have been completed.
- 103.2 The Architect shall then issue a Taking-Over Certificate accordingly, and the Contractor shall carry out the Tests on Completion as soon as practicable, before the expiry date of the Defects Notification Period. The Architect shall require the Tests on Completion to be carried out by giving 14 days' notice and in accordance

with the relevant provisions of the Contract.

- 1033 If the Contractor suffers delay and/or incurs Cost as a result of this delay in carrying out the Tests on Completion, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
- a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
 - b) payment of any such accrued costs, which shall be included in the Contract Price.

- 1034 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

104 Surfaces Requiring Reinstatement

Except as otherwise stated in a Taking-Over Certificate, a certificate for a Section or part of the Works shall not be deemed to certify completion of any ground or other surfaces requiring reinstatement.

11. DEFECTS LIABILITY

11.1 Completion of Outstanding Work and Remedying Defects

- 11.1.1 In order that the Works and Contractor's Documents, and each Section, shall be in the condition required by the Contract (fair wear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable thereafter, the Contractor shall:
- a) complete any work which is outstanding on the date stated in a Taking-Over Certificate, within such reasonable time as is instructed by the Engineer, and
 - b) execute all work required to remedy defects or damage, as may be notified by (or on behalf of) the Procuring Entity on or before the expiry date of the Defects Notification Period for the Works or Section (as the case may be).

- 11.1.2 If a defect appears or damage occurs, the Contractor shall be notified accordingly by the Engineer.

11.2 Cost of Remedying Defects

- 11.2.1 All work referred to in sub-paragraph (b) of Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:
- a) Any design for which the Contractor is responsible,
 - b) Plant, Materials or workmanship not being in accordance with the Contract, or
 - c) Failure by the Contractor to comply with any other obligation.

- 11.2.2 If and to the extent that such work is attributable to any other cause, the Contractor shall be notified promptly by (or on behalf of) the Procuring Entity, and Sub-Clause 13.3 [Variation Procedure] shall apply.

11.3 Extension of Defects Notification Period

- 11.3.1 The Procuring Entity shall be entitled subject to Sub-Clause 2.5 [Procuring Entity's Claims] to an extension of the Defects Notification Period for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot be used for the purposes for which they are intended by reason of a defect or by reason of damage attributable to the Contractor. However, a Defects Notification Period shall not be extended by more than two years.

- 11.3.2 If delivery and/ or erection of Plant and/ or Materials was suspended under Sub-Clause 8.8 [Suspension of Work] or Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work], the Contractor's obligations under this Clause shall not apply to any defects or damage occurring more than two years after the Defects Notification Period for the Plant and/ or Materials would otherwise have expired.

11.4 Failure to Remedy Defects

- 11.4.1 If the Contractor fails to remedy any defect or damage within a reasonable time, a date may be fixed by the Engineer, on or by which the defect or damage is to be remedied. The Contractor shall be given reasonable

notice of this date.

- 1142 If the Contractor fails to remedy the defect or damage by this notified date and this remedial work was to be executed at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Procuring Entity may (at his option):
- (a) Carry out the work itself or by others, in a reasonable manner and at the Contractor's cost, but the Contractor shall have no responsibility for this work; and the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay to the Procuring Entity the costs reasonably incurred by the Procuring Entity in remedying the defect or damage;
 - (b) Require the Architect to agree or determine a reasonable reduction in the Contract Price in accordance with Sub-Clause 3.5 [Determinations]; or
 - (c) if the defect or damage deprives the Procuring Entity of substantially the whole benefit of the Works or any major part of the Works, terminate the Contract as a whole, or in respect of such major part which cannot be put to the intended use. Without prejudice to any other rights, under the Contractor otherwise, the Procuring Entity shall then be entitled to recover all sums paid for the Works or for such part (as the case may be), plus financing costs and the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor.

115 Removal of Defective Work

If the defect or damage cannot be remedied expeditiously on the Site and the Procuring Entity gives consent, the Contractor may remove from the Site for the purposes of repair such items of Plant as are defective or damaged. This consent may require the Contractor to increase the amount of the Performance Security by the full replacement cost of these items, or to provide other appropriate security.

116 Further Tests

- 116.1 If the work of remedying of any defect or damage may affect the performance of the Works, the Architect may require the repetition of any of the tests described in the Contract. The requirement shall be made by notice within 14 days after the defect or damage is remedied.
- 116.2 These tests shall be carried out in accordance with the terms applicable to the previous tests, except that they shall be carried out at the risk and cost of the Party liable, under Sub-Clause 11.2 [Cost of Remedying Defects], for the cost of the remedial work.

117 Right of Access

Until the Completion Certificate has been issued, the Contractor shall have such right of access to the Works as is reasonably required in order to comply with this Clause, except as may be inconsistent with the Procuring Entity's reasonable security restrictions.

118 Contractor to Search

The Contractor shall, if required by the Engineer, search for the cause of any defect on parts of the works that have already accepted, under the direction of the Engineer. Unless the defect is to be remedied at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Cost of the search plus profit shall be agreed or determined by the Architect in accordance with Sub-Clause 3.5 [Determinations] and shall be included in the Contract Price.

119 Completion Certificate

- 119.1 Performance of the Contractor's obligations shall not be considered to have been completed until the Architect has issued the Completion Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.
- 119.2 The Architect shall issue the Completion Certificate within 30 days after the latest of the expiry dates of the Defects Liability Period, or as soon thereafter as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects. A copy of the Completion Certificate shall be issued to the Procuring Entity.
- 119.3 Only the Completion Certificate shall be deemed to constitute acceptance of the Works.

11.10 Unfulfilled Obligations

After the Completion Certificate has been issued, each Party shall remain liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract shall be deemed to remain in force.

11.11 Clearance of Site

- 11.11.1 Upon receiving the Completion Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.
- 11.11.2 If all these items have not been removed within 30 days after receipt by the Contractor of the Completion Certificate, the Procuring Entity may sell or otherwise dispose of any remaining items. The Procuring Entity shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.
- 11.11.3 Any balance of the moneys from the sale shall be paid to the Contractor. If these moneys are less than the Procuring Entity's costs, the Contractor shall pay the outstanding balance to the Procuring Entity.

12 MEASUREMENT AND DEVALUATION

12.1 Works to be Measured

- 12.1.1 The Works shall be measured, and valued for payment, in accordance with this Clause. The Contractor shall show in each application under Sub-Clauses 14.3 [Application for Interim Payment Certificates], 14.10 [Statement on Completion] and 14.11 [Application for Final Payment Certificate] the quantities and other particulars detailing the amounts which he considers to be entitled under the Contract.
- 12.1.2 Whenever the Architect requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:
 - a) promptly either attend or send another qualified representative to assist the Architect in making the measurement, and
 - b) supply any particulars requested by the Engineer.
- 12.1.3 If the Contractor fails to attend or send a representative, the measurement made by the Architect shall be accepted as accurate.
- 12.1.4 Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured from records, these shall be prepared by the Engineer. The Contractor shall, as and when requested, attend to examine and agree the records with the Engineer, and shall sign the same when agreed. If the Contractor does not attend, the records shall be accepted as accurate.
- 12.1.5 If the Contractor examines and disagrees the records, and/ or does not sign them as agreed, then the Contractor shall give notice to the Architect of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Architect shall review the records and either confirm or vary them and certify the payment of the undisputed part. If the Contractor does not so give notice to the Architect within 14 days after being requested to examine the records, they shall be accepted as accurate.

12.2 Method of Measurement

Except as otherwise stated in the Contract:

- a) Measurement shall be made of the net actual quantity of each item of the Permanent Works, and
- b) the method of measurement shall be in accordance with the Bill of Quantities or other applicable Schedules.

12.3 Evaluation

- 12.3.1 Except as otherwise stated in the Contract, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of work done by evaluating each item of work, applying the measurement agreed or determined in accordance with the above Sub-Clauses 12.1 and 12.2 and the appropriate rate or price for the item.

- 1232 For each item of work, the appropriate rate or price for the item shall be the rate or price specified for such item in the Contractor, if there is no such item, specified for similar work.
- 1233 Any item of work included in the Bill of Quantities for which no rate or price was specified shall be considered as included in other rates and prices in the Bill of Quantities and will not be paid for separately.
- 1234 However, for a new item of work, a new rate or price shall be appropriate for such item of work if:
- The work is instructed under Clause 13 [Variations and Adjustments],
 - no rate or price is specified in the Contract for this item, and
 - no specified rate or price is appropriate because the item of work is not of similar character, or is not executed under similar conditions, as any item in the Contract.
- 1235 Each new rate or price shall be derived from any relevant rates or prices in the Contract. If no rates or prices are relevant for the new item of work, it shall be derived from the reasonable Cost of executing such work, prevailing market rates, together with profit, taking account of any other relevant matters.
- 1236 Until such time as an appropriate rate or price is agreed or determined, the Architect shall determine a provisional rate or price for the purposes of Interim Payment Certificates as soon as the concerned work commences.
- 1237 Where the contract price is different from the corrected tender price, in order to ensure the contractor is not paid less or more relative to the contract price (*which would be the tender price*), payment valuation certificates and variation orders on omissions and additions valued based on rates in the Bill of Quantities or schedule of rates in the Tender, will be adjusted by a plus or minus percentage. The percentage already worked out during tender evaluation is worked out as follows: $(\text{corrected tender price} - \text{tender price}) / \text{tender price} \times 100$.

124 Omissions

Whenever the omission of any work forms part (or all) of a Variation, the value of which has not been agreed, if:

- The Contractor will incur (or has incurred) cost which, if the work had not been omitted, would have been deemed to be covered by a sum forming part of the Accepted Contract Amount;
- The omission of the work will result (or has resulted) in this sum not forming part of the Contract Price; and
- this cost is not deemed to be included in the evaluation of any substituted work; then the Contractor shall give notice to the Architect accordingly, with supporting particulars. Upon receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this cost, which shall be included in the Contract Price.

13 VARIATIONS AND ADJUSTMENTS

13.1 Right to Vary

- 13.1.1 Variations may be initiated by the Architect at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by a request for the Contractor to submit a proposal. No Variation instructed by the Architect under this Clause shall in any way vitiate or invalidate the Contract.
- 13.1.2 The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Architect stating (with supporting particulars) that (i) the Contractor cannot readily obtain the Goods required for the Variation, or (ii) such Variation triggers a substantial change in the sequence or progress of the Works. Upon receiving this notice, the Architect shall cancel, confirm or vary the instruction.
- 13.1.3 Each Variation may include:
- changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation),
 - changes to the quality and other characteristics of any item of work,
 - changes to the levels, positions and/ or dimensions of any part of the Works,
 - omission of any work unless it is to be carried out by others,
 - any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work, or

f) changes to the sequence or timing of the execution of the Works.

13.14 The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Architect instructs after obtaining approval of the Procuring Entity.

132 Variation Order Procedure

132.1 Prior to any Variation Order under Sub-Clause 13.1.4 the Architect shall notify the Contractor of the nature and form of such variation. As soon as possible after having received such notice, the Contractor shall submit to the Engineer:

- a) A description of work, if any, to be performed and a programme for its execution, and
- b) the Contractor's proposals for any necessary modifications to the Programme according to Sub-Clause 8.3 or to any of the Contractor's obligations under the Contract, and
- c) the Contractor's proposals for adjustment to the Contract Price.

Following the receipt of the Contractor's submission the Architect shall, after due consultation with the Employer and the Contractor, decide as soon as possible whether or not the variation shall be carried out. If the Architect decides that the variation shall be carried out, he shall issue a Variation Order clearly identified as such in accordance with the Contractor's submission or as modified by agreement.

If the Architect and the Contractor are unable to agree the adjustment of the Contract Price, the provisions of Sub-Clause 13.2.2 shall apply.

132.2 Disagreement on Adjustment of the Contract Price

If the Contractor and the Architecture unable to agree on the adjustment of the Contract Price, the adjustment shall be determined in accordance with the rates specified in the Bills of Quantities or Schedule of Day work Prices. If the rates contained in the Bills of Quantities or Day works Prices are not directly applicable to the specific work in question, suitable rates shall be established by the Architect reflecting the level of pricing in the Day works Prices. Where rates are not contained in the said Prices, the amount shall be such as is in all the circumstances reasonable, reflecting a market price. Due account shall be taken of any over-or under-recovery of overheads by the Contractor in consequence of the variation. The Contractor shall also be entitled to be paid:

- a) The cost of any partial execution of the Works rendered useless by any such variation,
- b) The cost of making necessary alterations to Plant already manufactured or in the course of manufacture or of any work done that has to be altered in consequence of such a variation,
- c) any additional costs incurred by the Contractor by the disruption of the progress of the Works as detailed in the Programme, and
- d) the net effect of the Contractor's finance costs, including interest, caused by the variation.

The Architect shall on this basis determine the rates or prices to enable on-account payment to be included in certificates of payment.

132.3 Contractor to Proceed

On receipt of a Variation Order, the Contractor shall forth with proceed to carry out the variation and be bound to these Conditions in so doing as if such variation was stated in the Contract. The work shall not be delayed pending the granting of an extension of the Time for Completion or an adjustment to the Contract Price under Sub-Clause 31.3.

133 Value Engineering

133.1 The Contractor may, at any time, submit to the Architect written proposal which (in the Contractor's opinion) will, if adopted, (i) accelerate completion, (ii) reduce the cost to the Procuring Entity of executing, maintaining or operating the Works, (iii) improve the efficiency or value to the Procuring Entity of the completed Works, or (iv) otherwise be of benefit to the Procuring Entity.

133.2 The proposal shall be prepared at the cost of the Contractor and shall include the items listed in Sub-Clause 13.3 [Variation Procedure].

132.3 If a proposal, which is approved by the Engineer, includes a change in the design of part of the Permanent

Works, then unless otherwise agreed by both Parties:

- a) The Contractor shall design this part,
- b) sub-paragraphs (a) to (d) of Sub-Clause 4.1 [Contractor's General Obligations] shall apply, and
- c) if this change results in a reduction in the contract value of this part, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine a fee, which shall be included in the Contract Price. This fee shall be (50%) of the difference between the following amounts:
 - i) such reduction in contract value, resulting from the change, excluding adjustments under Sub-Clause 13.8 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost], and
 - ii) the reduction (if any) in the value to the Procuring Entity of the varied works, taking account of any improvement in quality, anticipated life or operational efficiencies.

13.3.4 However, if the amount established in item 13.2.3 (c) (i) is less than amount established in item 13.2.3 (c) (ii), there shall not be a fee. However, if the amount established in item 13.2.3 (c) (i) is more than amount established in item 13.2.3 (c) (ii), it shall result in a price variation to the Procuring Entity.

134 Variation Procedure for Value Engineering proposal

- 134.1 If the Architect requests a proposal, prior to instructing a Variation, the Contractor shall respond in writing as soon as practicable, either by giving reasons why he cannot comply (if this is the case) or by submitting:
 - a) A description of the proposed work to be performed and a programme for its execution,
 - b) the Contractor's proposal for any necessary modifications to the programme according to Sub-Clause 8.3 [Programme] and to the Time for Completion, and
 - c) the Contractor's proposal for evaluation of the Variation.
- 134.2 The Architect shall, as soon as practicable after receiving such proposal (under Sub-Clause 13.2 [Value Project Engineering] or otherwise), respond with approval, disapproval or comments. The Contractor shall not delay any work whilst awaiting a response.
- 134.3 Each instruction to execute a Variation, with any requirements for the recording of Costs, shall be issued by the Architect to the Contractor, who shall acknowledge receipt.
- 134.4 Each Variation shall be evaluated in accordance with Clause 12 [Measurement and Evaluation], unless the Architect instructs or approves otherwise in accordance with this Clause.

135 Payment in Applicable Currencies

If the Contract provides for payment of the Contract Price in more than one currency, then whenever an adjustment is agreed, approved or determined as stated above, the amount payable in each of the applicable currencies shall be specified. For this purpose, reference shall be made to the actual or expected currency proportions of the Cost of the varied work, and to the proportions of various currencies specified for payment of the Contract Price.

136 Provisional Sums

- 136.1 Each Provisional Sum shall only be used, in whole or in part, in accordance with the Architect instructions, and the Contract Price shall be adjusted accordingly. The total sum paid to the Contractor shall include only such amounts, for the work, supplies or services to which the Provisional Sum relates, as the Architect shall have instructed. For each Provisional Sum, the Architect May instruct:
 - a) Work to be executed (including Plant, Materials or services to be supplied) by the Contractor and valued under Sub-Clause 13.3 [Variation Procedure]; and/or
 - b) Plant, Materials or services to be purchased by the Contractor, from a nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]) or otherwise; and for which there shall be included in the Contract Price:
 - i) The actual amounts paid (or due to be paid) by the Contractor, and
 - ii) a sum for overhead charges and profit, calculated as a percentage of these actual amounts by applying the relevant percentage rate (if any) stated in the appropriate Schedule. If there is no such rate, the percentage rate stated in **the Special Conditions of Contract** shall be applied.

- 13.6.2 The Contractor shall, when required by the Engineer, produce quotations, invoices, vouchers and accounts or receipts in substantiation.

13.7 Dayworks

- 13.7.1 For work of a minor or incidental nature, the Architect may instruct that a Variation shall be executed on a daywork basis. The work shall then be valued in accordance with the Daywork Schedule included in the Contract, and the following procedure shall apply. If a Daywork Schedule is not included in the Contract, this Sub-Clause shall not apply.
- 13.7.2 Before ordering Goods for the work, the Contractor shall submit quotations to the Engineer. When applying for payment, the Contractor shall submit invoices, vouchers and accounts or receipts for any Goods.
- 13.7.3 Except for any items for which the Daywork Schedule specifies that payment is not due, the Contractor shall deliver each day to the Architect accurate statements induplicate which shall include the following details of the resources used in executing the previous day's work:
- a) The names, occupations and time of Contractor's Personnel,
 - b) the identification, type and time of Contractor's Equipment and Temporary Works, and
 - c) the quantities and types of Plant and Materials used.
- 13.7.4 One copy of each statement will, if correct, or when agreed, be signed by the Architect and returned to the Contractor. The Contractor shall then submit priced statements of these resources to the Engineer, prior to their inclusion in the next Statement under Sub-Clause 14.3 [Application for Interim Payment Certificates].

13.8 Adjustments for Changes in Legislation

- 13.8.1 The Contract Price shall be adjusted to take account of any increase or decrease in Cost resulting from a change in the Laws of Kenya (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after the Base Date, which affect the Contractor in the performance of obligations under the Contract.
- 13.8.2 If the Contractor suffers (or will suffer) delay and/or incurs (or will incur) additional Cost as a result of these changes in the Laws or in such interpretations, made after the Base Date, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
- a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
 - b) payment of any such Cost, which shall be included in the Contract Price.
- 13.8.3 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.
- 13.8.4 Notwithstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the table of adjustment data in accordance with the provisions of Sub-Clause 13.8 [Adjustments for Changes in Cost].

13.9 Adjustments for Changes in Cost

- 13.9.1 In this Sub-Clause, "table of adjustment data" means the completed table of adjustment data for local and foreign currencies included in the Schedules. If there is no such table of adjustment data, this Sub-Clause shall not apply.
- 13.9.2 If this Sub-Clause applies, the amounts payable to the Contractor shall be adjusted for rises or falls in the cost of labor, Goods and other inputs to the Works, by the addition or deduction of the amounts determined by the formulae prescribed in this Sub-Clause. To the extent that full compensation for any rise or fall in Costs is not covered by the provisions of this or other Clauses, the Accepted Contract Amount shall be deemed to have included a mounts to cover the contingency of other rises and falls in costs.
- 13.9.3 The adjustment to be applied to the amount otherwise payable to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates, shall be determined from formulae for each of the currencies in which the Contract Price is payable. No adjustment is to be applied to work valued on the basis of Cost or current prices. The formulae shall be of the following general type:

Price Adjustment Formula

Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the SCC**. If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type specified below applies:

$$P = A + B \frac{I_m}{I_o}$$

where:

P is the adjustment factor for the portion of the Contract Price payable.

A and **B** are recoefficients **specified in the SCC**, representing then on adjustable and adjustable portions, respectively, of the Contract Price payable and

I_m is the index prevailing at the end of the month being invoiced and **I_o** is the index prevailing 30 days before Bid opening for inputs payable.

NOTE: The sum of the two coefficients A and B should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the nonadjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other nonadjustable components. The sum of the adjustments for each currency are added to the Contract Price.

- 13.94 The cost indices or reference prices stated in the table of adjustment data shall be used. If their source is in doubt, it shall be determined by the Engineer. Forth is purpose, reference shall be made to the values of the indices at stated dates (quoted in the fourth and fifth columns respectively of the table) for the purposes of clarification of the source; although these dates (and thus these values) may not correspond to the base cost indices.
- 13.95 In cases where the “currency of index” is not the relevant currency of payment, each index shall be converted into the relevant currency of payment at the selling rate, established by the Central Bank of Kenya, of this relevant currency on the above date for which the index is required to be applicable.
- 13.96 Until such time as each current cost index is available, the Architect shall determine a provisional index for the issue of Interim Payment Certificates. When a current cost index is available, the adjustment shall be recalculated accordingly.
- 13.97 If the Contractor fails to complete the Works within the Time for Completion, adjustment of prices there after shall be made using either (i) each index or price applicable on the date 49 days prior to the expiry of the Time for Completion of the Works, or (ii) the current index or price, whichever is more favorable to the Procuring Entity.
- 13.98 The weightings (coefficients) for each of the factors of cost stated in the table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or in applicable, as a result of Variations.

14 CONTRACT PRICE AND PAYMENT

14.1 The Contract Price

14.1.1 Unless otherwise stated in the Special Conditions:

- a) The value of the payment certificate shall be agreed or determined under Sub-Clause 12.3 [Evaluation] and be subject to adjustments in accordance with the Contract;
- b) the Contractor shall pay all taxes, duties and fees required to be paid by him under the Contract, and the Contract Price shall not be adjusted for any of these costs except as stated in Sub-Clause 13.7 [Adjustments for Changes in Legislation];
- c) any quantities which may be set out in the Bill of Quantities or other Schedule are estimated quantities

and are not to be taken as the actual and correct quantities:

- i) of the Works which the Contractor is required to execute, or
 - ii) for the purposes of Clause 12 [Measurement and Evaluation]; and
- d) the Contractor shall submit to the Engineer, within 30 days after the Commencement Date, a proposed breakdown of each lump sum price in the Schedules. The Architect may take account of the breakdown when preparing Payment Certificates but shall not be bound by it.
- 14.1.2 Notwithstanding the provisions of subparagraph (b), Contractor's Equipment, including essential spare parts there for, imported by the Contractor for the sole purpose of executing the Contract shall not be exempt from the payment of import duties and taxes upon importation.

14.2 Advance Payment

- 14.2.1 The Procuring Entity shall make an advance payment, as an interest-free loan for mobilization and cashflow support, when the Contractor submits a guarantee in accordance with this Clause. The total advance payment, the number and timing of installments (if more than one), and the applicable currencies and proportions, shall be as stated in the **Special Conditions of Contract**.
- 14.2.2 Unless and until the Procuring Entity receives this guarantee, or if the total advance payment is not stated in the Special Conditions of Contract, this Sub-Clause shall not apply.
- 14.2.3 The Architect shall deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate for the advance payment or its first installment after receiving a Statement (under Sub-Clause 14.3 [Application for Interim Payment Certificates]) and after the Procuring Entity receives (i) the Performance Security in accordance with Sub-Clause 4.2 [Performance Security] and (ii) a guarantee in amounts and currencies equal to the advance payment. This guarantee shall be issued by a reputable bank or financial institutions elected by the Contractor and shall be in the form annexed to the Special Conditions or in another form approved by the Procuring Entity.
- 14.2.4 The Contractor shall ensure that the guarantee is valid and enforceable until the advance payment has been repaid, but its amount shall be progressively reduced by the amount repaid by the Contractor as indicated in the Payment Certificates. If the terms of the guarantee specify its expiry date, and the advance payment has not been repaid by the date 30 days prior to the expiry date, the Contractor shall extend the validity of the guarantee until the advance payment has been repaid.
- 14.2.5 Unless stated otherwise in the **Special Conditions of Contract**, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Architect in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates], as follows:
- a) Deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount less Provisional Sums; and
 - b) deductions shall be made at the amortization rate stated in the **Special Conditions of Contract** of the amount of each Interim Payment Certificate (excluding the advance payment and deductions for its repayments as well as deductions for retention money) in the currencies and proportions of the advance payment until such time as the advance payment has been repaid; provided that the advance payment shall be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.
- 14.2.6 If the advance payment has not been repaid prior to the issue of the Taking-Over Certificate for the Works or prior to termination under Clause 15 [Termination by Procuring Entity], Clause 16 [Suspension and Termination by Contractor] or Clause 19 [Force Majeure] (as the case may be), the whole of the balance then outstanding shall immediately become due and in case of termination under Clause 15 [Termination by Procuring Entity], except for Sub-Clause 14.2.7 [Procuring Entity's Entitlement to Termination for Convenience], payable by the Contractor to the Procuring Entity.

14.3 Application for Interim Payment Certificates

- 14.3.1 The Contractor shall submit a Statement (in number of copies indicated in the **Special Conditions of**

Contract) to the Architect after the end of each month, in a form approved by the Engineer, showing in detail the amounts to which the Contractor considers itself to be entitled, together with supporting documents which shall include the report on the progress during this month in accordance with Sub-Clause 4.21 [Progress Reports].

1432 The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

- a) the estimated contract value of the Works executed and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub-paragraphs (b) to (g) below);
- b) any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost];
- c) any amount to be deducted for retention, calculated by applying the percentage of retention stated in **the Special Conditions of Contract** to the total of the above amounts, until the amount so retained by the Procuring Entity reaches the limit of Retention Money (if any) stated in **the Special Conditions of Contract**;
- d) any amounts to be added for the advance payment and (if more than one installment) and to be deducted for its repayments in accordance with Sub-Clause 14.2 [Advance Payment];
- e) any amounts to be added and deducted for Plant and Materials in accordance with Sub-Clause 14.5 [Plant and Materials intended for the Works];
- f) any other additions or deductions which may have become due under the Contract otherwise, including those under Clause 20 [Claims, Disputes and Arbitration]; and
- g) the deduction of amounts certified in all previous Payment Certificates.

144 Schedule of Payments

144.1 If the Contract includes a schedule of payments specifying the installments in which the Contract Price will be paid, then unless otherwise stated in this schedule:

- a) The installments quoted in this schedule of payments shall be the estimated contract values for the purposes of sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates];
- b) Sub-Clause 14.5 [Plant and Materials intended for the Works] shall not apply; and
- c) If these installments are not defined by reference to the actual progress achieved in executing the Works, and if actual progress is found to be less or more than that on which this schedule of payments was based, then the Architect may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine revised installments, which shall take account of the extent to which progress is less or more than that on which the installments were previously based.

144.2 If the Contract does not include a schedule of payments, the Contractor shall submit non-binding estimates of the payments which he expects to become due during each quarterly period. The first estimate shall be submitted within 42 days after the Commencement Date. Revised estimates shall be submitted at quarterly intervals, until the Taking-Over Certificate has been issued for the Works.

145 Plant and Materials intended for the Works

145.1 If this Sub-Clause applies, Interim Payment Certificates shall include, under sub-paragraph (e) of Sub-Clause 14.3, (i) an amount for Plant and Materials which have been sent to the Site for incorporation in the Permanent Works, and (ii) a reduction when the contract value of such Plant and Materials is included as part of the Permanent Works under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates].

145.2 If the lists referred to in sub-paragraphs (b)(i) or (c)(i) below are not included in the Schedules, this Sub-Clause shall not apply.

- 1453 The Architect shall determine and certify each addition if the following conditions are satisfied:
- a) The Contractor has:
 - i) kept satisfactory records (including the orders, receipts, Costs and use of Plant and Materials) which are available for inspection, and
 - (ii) submitted statement of the Cost of acquiring and delivering the Plant and Materials to the Site, supported by satisfactory evidence;and either:
 - b) the relevant Plant and Materials:
 - i) are those listed in the Schedules for payment when shipped,
 - ii) have been shipped to Kenya, enroute to the Site, in accordance with the Contract; and
 - iii) are described in a clean shipped bill of lading or other evidence of shipment, which has been submitted to the Architect together with evidence of payment of freight and insurance, any other documents reasonably required, and a bank guarantee in a form and issued by an entity approved by the Procuring Entity in amounts and currencies equal to the amount due under this Sub-Clause: this guarantee may be in a similar form to the form referred to in Sub-Clause 14.2 [Advance Payment] and shall be valid until the Plant and Materials are properly stored on Site and protected against loss, damage or deterioration; or
 - c) the relevant Plant and Materials:
 - i) are those listed in the Schedules for payment when delivered to the Site, and
 - ii) have been delivered to and are properly stored on the Site, are protected against loss, damage or deterioration and appear to be in accordance with the Contract.

1454 The additional amount to be certified shall be the equivalent of eighty percent (80%) of the Architect determination of the cost of the Plant and Materials (including delivery to Site), taking account of the documents mentioned in this Sub-Clause and of the contract value of the Plant and Materials.

1455 The currencies for this additional amount shall be the same as those in which payment will become due when the contract value is included under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]. At that time, the Payment Certificate shall include the applicable reduction which shall be equivalent to, and in the same currencies and proportions as, this additional amount for the relevant Plant and Materials.

146 Issue of Interim Payment Certificates

146.1 No amount will be certified or paid until the Procuring Entity has received and approved the Performance Security. Thereafter, the Architect shall, within 30 days after receiving a Statement and supporting documents, deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate which shall state the amount which the Architect fairly determines to be due, with all supporting particulars for any reduction or withholding made by the Architect on the Statement if any.

146.2 However, prior to issuing the Taking-Over Certificate for the Works, the Architect shall not be bound to issue an Interim Payment Certificate in an amount which would (after retention and other deductions) be less than the minimum amount of Interim Payment Certificates (if any) stated **in the Special Conditions of Contract**. In this event, the Architect shall give notice to the Contractor accordingly.

146.3 An Interim Payment Certificate shall not be withheld for any other reason, although:

- a) if anything supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or
- b) if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the Engineer, the value of this work or obligation may be withheld until the work or obligation has been performed.

4.6.4 The Architect may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the

Architect acceptance, approval, consent or satisfaction.

14.7 Payment

14.7.1 The Procuring Entity shall pay to the Contractor:

- a) The advance payment shall be paid within 60 days after signing of the contract by both parties or within 60 days after receiving the documents in accordance with Sub-Clause 4.2 [Performance Security] and Sub-Clause 14.2 [Advance Payment], whichever is later;
- b) The amount certified in each Interim Payment Certificate within 60 days after the Architect Issues Interim Payment Certificate; and
- c) the amount certified in the Final Payment Certificate within 60 days after the Procuring Entity Issues Interim Payment Certificate; or after determination of any disputed amount shown in the Final Statement in accordance with Sub-Clause 16.2 [Termination by Contractor].

14.7.2 Payment of the amount due in each currency shall be made into the bank account, nominated by the Contractor, in the payment country (forth is currency) specified in the Contract.

14.8 Delayed Payment

14.8.1 If the Contractor does not receive payment in accordance with Sub-Clause 14.7 [Payment], the Contractor shall be entitled to receive financing charges (simple interest) monthly on the amount unpaid during the period of delay. This period shall be deemed to commence on the date for payment specified in Sub-Clause 14.7 [Payment], irrespective (in the case of its sub-paragraph (b) of the date on which any Interim Payment Certificate is issued.

14.8.2 These financing charges shall be calculated at the annual rate of three percentage points above the mean rate of the Central Bank in Kenya of the currency of payment, or if not available, the interbank offered rate, and shall be paid in such currency.

14.8.3 The Contractor shall be entitled to this payment without formal notice and certification, and without prejudice to any other right or remedy.

14.9 Payment of Retention Money

14.9.1 When the Taking-Over Certificate has been issued for the Works, the first half of the Retention Money shall be certified by the Architect for payment to the Contractor. If a Taking-Over Certificate is issued for a Section or part of the Works, a proportion of the Retention Money shall be certified and paid. This proportion shall be half (50%) of the proportion calculated by dividing the estimated contract value of the Section or part, by the estimated final Contract Price.

14.9.2 Promptly after the latest of the expiry dates of the Defects Liability Periods, the outstanding balance of the Retention Money shall be certified by the Architect for payment to the Contractor. If a Taking-Over Certificate was issued for a Section, a proportion of the second half of the Retention Money shall be certified and paid promptly after the expiry date of the Defects Notification Period for the Section. This proportion shall be half (50%) of the proportion calculated by dividing the estimated contract value of the Section by the estimated final Contract Price.

14.9.3 However, if any work remains to be executed under Clause 11 [Defects Liability], the Architects shall be entitled to withhold certification of the estimated cost of this work until it has been executed.

14.9.4 When calculating these proportions, no account shall be taken of any adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost].

14.9.5 Unless otherwise stated in the Special Conditions, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor shall be entitled to substitute a Retention Money Security guarantee, in the form annexed to the Special Conditions or in another form approved by the Procuring Entity and issued by a reputable bank or financial institution selected by the Contractor, for the second half of the Retention Money.

- 14.9.6 The Procuring Entity shall return the Retention Money Security guarantee to the Contractor within 14 days after receiving a copy of the Completion Certificate.

14.10 Statement at Completion

- 14.10.1 Within 84 days after receiving the Taking-Over Certificate for the Works, the Contractor shall submit to the Architect three copies of a Statement at completion with supporting documents, in accordance with Sub-Clause 14.3 [Application for Interim Payment Certificates], showing:

- a) the value of all work done in accordance with the Contract up to the date stated in the Taking-Over Certificate for the Works,
- b) any further sums which the Contractor considers to be due, and
- c) an estimate of any other amounts which the Contractor considers will become due to him under the Contract. Estimated amounts shall be shown separately in this Statement at completion.

- 14.10.2 The Architect shall then certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates].

14.11 Application for Final Payment Certificate

- 14.11.1 Within 60 days after receiving the Completion Certificate, the Contractor shall submit, to the Engineer, six copies of a draft final statement with supporting documents showing in detail in a form approved by the Engineer:

- a) The value of all work done in accordance with the Contract, and
- b) Any further sums which the Contractor considers to be due to him under the Contract otherwise.

- 14.11.2 If the Architect disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Architect may reasonably require within 30 days from receipt of said draft and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Architect the final statement as agreed. This agreed statement is referred to in these Conditions as the "Final Statement".

- 14.11.3 However, if, following discussions between the Architect and the Contractor and any changes to the draft final statement which are agreed, it becomes evident that a dispute exists, the Architect shall deliver to the Procuring Entity (with a copy to the Contractor) an Interim Payment Certificate for the agreed parts of the draft final statement. Thereafter, if the dispute is finally resolved under Sub-Clause 20.4 [Obtaining Dispute Board's Decision] or Sub-Clause 20.5 [Amicable Settlement], the Contractor shall then prepare and submit to the Procuring Entity (with a copy to the Engineer) a Final Statement.

14.12 Discharge

When submitting the Final Statement, the Contractor shall submit a discharge which confirms that the total of the Final Statement represents full and final settlement of all moneys due to the Contractor under or in connection with the Contract. This discharge may state that it becomes effective when the Contractor has received the Performance Security and the outstanding balance of this total, in which event the discharge shall be effective on such date.

14.13 Issue of Final Payment Certificate

- 14.13.1 Within 30 days after receiving the Final Statement and discharge in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Architect shall deliver, to the Procuring Entity and to the Contractor, the Final Payment Certificate which shall state:

- a) The amount which he fairly determines is finally due, and
- b) After giving credit to the Procuring Entity for all amounts previously paid by the Procuring Entity and for all sums to which the Procuring Entity is entitled, the balance (if any) due from the Procuring Entity to the Contractor or from the Contractor to the Procuring Entity, as the case may be.

- 14.13.2 If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Architect shall request the Contractor to do so. If the Contractor fails to submit an application within a period of 30 days, the

Architect shall issue the Final Payment Certificate for such amount as he fairly determines to be due.

14.14 Cessation of Procuring Entity's Liability

- 14.14.1 The Procuring Entity shall not be liable to the Contractor for any matter or thing under or in connection with the Contract or execution of the Works, except to the extent that the Contractor shall have included an amount expressly for it:
- a) in the Final Statement and also,
 - b) (except for matters or things arising after the issue of the Taking-Over Certificate for the Works) in the Statement at completion described in Sub-Clause 14.10 [Statement at Completion].
- 14.14.2 However, this Sub-Clause shall not limit the Procuring Entity's liability under his indemnification obligations, or the Procuring Entity's liability in any case of fraud, deliberate default or reckless misconduct by the Procuring Entity.

14.15 Currencies of Payment

The Contract Price shall be paid in the currency or currencies named in the Schedule of Payment Currencies. If more than one currency is so named, payments shall be made as follows:

- a) If the Accepted Contract Amount was expressed in Local Currency only:
 - i) the proportions or amounts of the Local and Foreign Currencies, and the fixed rates of exchange to be used for calculating the payments, shall be as stated in the Schedule of Payment Currencies, except as otherwise agreed by both Parties;
 - ii) payments and deductions under Sub-Clause 13.5 [Provisional Sums] and Sub-Clause 13.7 [Adjustments for Changes in Legislation] shall be made in the applicable currencies and proportions; and
 - iii) other payments and deductions under sub-paragraphs (a) to (d) of Sub-Clause 14.3 [Application for Interim Payment Certificates] shall be made in the currencies and proportions specified in sub-paragraph (a) (i) above;
- b) payment of the damages specified in the Special Conditions of Contract, shall be made in the currencies and proportions specified in the Schedule of Payment Currencies;
- c) other payments to the Procuring Entity by the Contractor shall be made in the currency in which the sum was expended by the Procuring Entity, or in such currency as may be agreed by both Parties;
- d) if any amount payable by the Contractor to the Procuring Entity in a particular currency exceeds the sum payable by the Procuring Entity to the Contractor in that currency, the Procuring Entity may recover the balance of this amount from the sums otherwise payable to the Contractor in other currencies; and
- e) if no rates of exchange are stated in the Schedule of Payment Currencies, they shall be those prevailing on the Base Date and determined by the Central Bank of Kenya.

15 TERMINATION BY PROCURING ENTITY

15.1 Notice to correct any defects or failures

If the Contractor fails to carry out any obligation under the Contract, the Architect may by notice require the Contractor to make good the failure and to remedy it within 30 days.

15.2 Termination by Procuring Entity

- 15.2.1 The Procuring Entity shall be entitled to terminate the Contract if the Contractor breaches the contract based on following circumstances which shall include but not limited to:
- a) fails to comply with Sub-Clause 4.2 [Performance Security] or with a notice under Sub-Clause 15.1 [Notice to Correct],
 - b) abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,

- c) without reasonable excuse fails:
 - i) to proceed with the Works in accordance with Clause 8 [Commencement, Delays and Suspension], or
 - ii) to comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 30 days after receiving it,
 - d) subcontracts the major part or whole of the Works or assigns the Contract without the consent of the Procuring Entity,
 - e) becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events, or
 - f) gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an induce mentor reward:
 - i) for doing or for bearing to do any action in relation to the Contract, or
 - ii) for showing or for bearing to show favor or disfavor to any person in relation to the Contract, or
 - iii) if any of the Contractor's Personnel, agents or Subcontractors gives or offers to give (directly or indirectly) to any person any such induce mentor reward as is described in this sub-paragraph (f). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination, or
 - g) If the contract or repeatedly fails to remedy delivers defective work,
 - h) based on reasonable evidence, has engaged in Fraud and Corruption as defined in paragraph 2.2 of the Appendix B to these General Conditions, in competing for or in executing the Contract.
- 1522 In any of these events or circumstances, the Procuring Entity may, upon giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in the case of sub-paragraph (e) or (f) or (g) or (h), the Procuring Entity may by notice terminate the Contract immediately.
- 1523 The Procuring Entity's election to terminate the Contract shall not prejudice any other rights of the Procuring Entity, under the Contractor otherwise.
- 1524 The Contractor shall then leave the Site and deliver any required Goods, all Contractor's Documents, and other design documents made by or for him, to the Engineer. However, the Contractor shall use his best efforts to comply immediately with any reasonable instructions included in the notice (i) for the assignment of any subcontract, and (ii) for the protection of life or property or for the safety of the Works.
- 1525 After termination, the Procuring Entity may complete the Works and/ or arrange for any other entities to do so. The Procuring Entity and these entities may then use any Goods, Contractor's Documents and other design documents made by or on behalf of the Contractor.
- 1526 The Procuring Entity shall then give notice that the Contractor's Equipment and Temporary Works will be released to the Contractor at or near the Site. The Contractor shall promptly arrange their removal, at the risk and cost of the Contractor. However, if by this time the Contractor has failed to make a payment due to the Procuring Entity, these items may be sold by the Procuring Entity in order to recover this payment. Any balance of the proceeds shall then be paid to the Contractor.

153 Valuation at Date of Termination

As soon as practicable after a notice of termination under Sub-Clause 15.2 [Termination by Procuring Entity] has taken effect, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of the Works, Goods and Contractor's Documents, and any other sums due to the Contractor for work executed in accordance with the Contract.

154 Payment after Termination

After a notice of termination under Sub-Clause 15.2 [Termination by Procuring Entity] has taken effect, the Procuring Entity may:

- a) Proceed in accordance with Sub-Clause 2.5 [Procuring Entity's Claims],
- b) withhold further payments to the Contractor until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any), and all other costs incurred by the Procuring Entity, have been established, and/ or

- c) recover from the Contractor any losses and damages incurred by the Procuring Entity and any extra costs of completing the Works, after allowing for any sum due to the Contractor under Sub-Clause 15.3 [Valuation at Date of Termination]. After recovering any such losses, damages and extra costs, the Procuring Entity shall pay any balance to the Contractor.

15.5 Procuring Entity's Entitlement to Termination for Convenience

The Procuring Entity shall be entitled to terminate the Contract, at any time at the Procuring Entity's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 30 days after the later of the dates on which the Contractor receives this notice or the Procuring Entity returns the Performance Security. The Procuring Entity shall not terminate the Contract under this Sub-Clause in order to execute the Works itself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor under Clause 16.2 [Termination by Contractor]. After this termination, the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment] and shall be paid in accordance with Sub-Clause 16.4 [Payment on Termination].

15.6 Fraud and Corruption

The Contractor shall ensure compliance with the Kenya Government's Anti-Corruption Laws and its prevailing sanctions.

15.7 Corrupt gifts and payments of commission

15.7.1 The Contractor shall not;

- a) Offer or give or agree to give to any person in the service of the Procuring Entity any gift or consideration of any kind as an inducement or reward for doing or for bearing to door for having done or for borne to do any act in relation to the obtaining or execution of this or any other Contract for the Procuring Entity or for showing or for bearing to show favor or disfavor to any person in relation to this or any other contract for the Procuring Entity.
- b) Enter into this or any other contract with the Procuring Entity 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 there of have been disclosed in writing to the Procuring Entity.

15.7.2 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 and Asset Disposal Act (2015) and the Anti-Corruption and Economic Crimes Act (2003) of the Laws of Kenya.

16 SUSPENSION AND TERMINATION BY CONTRACTOR

16.1 Contractor's Entitlement to Suspend Work

16.1.1 If the Architect fails to certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates] or Sub-Clause 14.7 [Payment], or not receiving instructions that would enable the contractor to proceed with the works in accordance with the program, the Contractor may, after giving not less than 30 days' notice to the Procuring Entity, suspend work (or reduce the rate of work) unless and until the Contractor has received the Payment Certificate, reasonable evidence or payment, as the case may be and as described in the notice.

16.1.2 The Contractor's action shall not prejudice his entitlements to financing charges under Sub-Clause 14.8 [Delayed Payment] and to termination under Sub-Clause 16.2 [Termination by Contractor].

16.1.3 If the Contractor subsequently receives such Payment Certificate, evidence or payment (as described in the relevant Sub-Clause and in the above notice) before giving a notice of termination, the Contractor shall resume normal working as soon as is reasonably practicable.

16.1.4 If the Contractor suffers delay and/or incurs Cost as a result of suspending work (or reducing the rate of work) in accordance with this Sub-Clause, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- b) payment of any such Cost-plus profit, which shall be included in the Contract Price.

162 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

163 Termination by Contractor

163.1 The Contractor shall be entitled to terminate the Contract if:

- a) the Architect fails, within 60 days after receiving a Statement and supporting documents, to issue the relevant Payment Certificate,
- b) the Contractor does not receive the amount due under an Interim Payment Certificate within 90 days after the expiry of the time stated in Sub-Clause 4.7 [Payment] within which payment is to be made (except for deductions in accordance with Sub-Clause 2.5 [Procuring Entity's Claims]),
- c) the Procuring Entity substantially fails to perform his obligations under the Contract in such manner as to materially and adversely affect the economic balance of the Contract and/or the ability of the Contractor to perform the Contract,
- d) a prolonged suspension affects the whole of the Works as described in Sub-Clause 8.11 [Prolonged Suspension], or
- e) the Procuring Entity becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events.
- f) the Contractor does not receive the Architect instruction recording the agreement of both Parties on the fulfilment of the conditions for the Commencement of Works under Sub-Clause 8.1 [Commencement of Works].

163.2 In any of these events or circumstances, the Contractor may, upon giving 14 days' notice to the Procuring Entity, terminate the Contract. However, in the case of sub-paragraph (f) or (g), the Contractor may by notice terminate the Contract immediately.

163.3 The Contractor's election to terminate the Contract shall not prejudice any other rights of the Contractor, under the Contract otherwise.

164 Cessation of Work and Removal of Contractor's Equipment

After a notice of termination under Sub-Clause 15.5 [Procuring Entity's Entitlement to Termination for Convenience], Sub-Clause 16.2 [Termination by Contractor] or Sub-Clause 19.6 [Optional Termination, Payment and Release] has taken effect, the Contractor shall promptly:

- a) cease all further work, except for such work as may have been instructed by the Architect for the protection of life or property or for the safety of the Works,
- b) hand over Contractor's Documents, Plant, Materials and other work, for which the Contractor has received payment, and
- c) remove all other Goods from the Site, except as necessary for safety, and leave the Site.

165 Payment on Termination

After a notice of termination under Sub-Clause 16.2 [Termination by Contractor] has taken effect, the Procuring Entity shall promptly:

- a) Return the Performance Security to the Contractor,
- b) pay the Contractor in accordance with Sub-Clause 19.6 [Optional Termination, Payment and Release], and
- c) pay to the Contractor the amount of any loss or damage sustained by the Contractor as a result of this termination.

17. RISK AND RESPONSIBILITY

17.1 Indemnities

17.1.1 The Contractor shall indemnify and hold harmless the Procuring Entity, the Procuring Entity's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

- a) Bodily injury, sickness, disease or death, of any person what so ever arising out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, willful actor breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, or any of their respective agents, and
- b) damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss arises out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless and to the extent that any such damage or loss is attributable to any negligence, willful act or breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

17.1.2 The Procuring Entity shall indemnify and hold harmless the Contractor, the Contractor's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of (1) bodily injury, sickness, disease or death, which is attributable to any negligence, willful act or breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, or any of their respective agents, and (2) the matters for which liability may be excluded from insurance cover, as described in sub-paragraphs (d)(i), (ii) and (iii) of Sub-Clause 18.3 [Insurance Against Injury to Persons and Damage to Property], unless and to the extent that any such damage or loss is attributable to any negligence, willful actor breach of the Contract by the contractor, the contractor's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

17.2 Contractor's Care of the Works

17.2.1 The Contractor shall take full responsibility for the care of the Works and Goods from the Commencement Date until the Taking-Over Certificate is issued (or is deemed to be issued under Sub-Clause 10.1 [Taking Over of the Works and Sections]) for the Works, when responsibility for the care of the Works shall pass to the Procuring Entity. If a Taking-Over Certificate is issued (or is so deemed to be issued) for any Section or part of the Works, responsibility for the care of the Section or part shall then pass to the Procuring Entity.

17.2.2 After responsibility has accordingly passed to the Procuring Entity, the Contractor shall take responsibility for the care of any work which is outstanding on the date stated in a Taking-Over Certificate, until this outstanding work has been completed.

17.2.3 If any loss or damage happens to the Works, Goods or Contractor's Documents during the period when the Contractor is responsible for their care, from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks], the Contractor shall rectify the loss or damage at the Contractor's risk and cost, so that the Works, Goods and Contractor's Documents conform with the Contract.

17.2.4 The Contractor shall be liable for any loss or damage caused by any actions performed by the Contractor after a Taking-Over Certificate has been issued. The Contractor shall also be liable for any loss or damage which occurs after a Taking-Over Certificate has been issued and which arose from a previous event for which the Contractor was liable.

17.3 Procuring Entity's Risks

The risks referred to in Sub-Clause 17.4 [Consequences of Procuring Entity's Risks] below, in so far as they directly affect the execution of the Works in Kenya, are:

- a) War hostilities (whether war be declared or not),
- b) rebellion, riot, commotion or disorder, terrorism, sabotage by persons other than the Contractor's Personnel,
- c) explosive materials, ionizing gradiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such explosives, radiation or radio-activity,
- d) pressure waves caused by aircraft or other aerial devices traveling at sonic or supersonic speeds,

- e) use or occupation by the Procuring Entity of any part of the Permanent Works, except as may be specified in the Contract,
- f) design of any part of the Works by the Procuring Entity's Personnel or by others for whom the Procuring Entity is responsible, and
- g) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventive precautions.

174 Consequences of Procuring Entity's Risks

- 174.1 If and to the extent that any of the risks listed in Sub-Clause 17.3 above results in loss or damage to the Works, Goods or Contractor's Documents, the Contractor shall promptly give notice to the Architect and shall rectify this loss or damage to the extent required by the Engineer.
- 174.2 If the Contractor suffers delay and/ or incurs Cost from rectifying this loss or damage, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
- (a) An extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
 - (b) Payment of any such Cost, which shall be included in the Contract Price. In the case of sub-paragraphs (e) and (g) of Sub-Clause 17.3 [Procuring Entity's Risks], Accrued Costs shall be payable.
- 174.3 After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

175 Intellectual and Industrial Property Rights

- 175.1 In this Sub-Clause, "infringement" shall refer to an infringement (or alleged infringement) of any patent, registered design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works; and "claim" shall refer to a claim (or proceedings pursuing a claim) alleging an infringement.
- 175.2 Whenever a Party does not give notice to the other Party of any claim within 30 days of receiving the claim, the first Party shall be deemed to have waived any right to indemnity under this Sub-Clause.
- 175.3 The Procuring Entity shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:
- a) An unavoidable result of the Contractor's compliance with the Contract, or
 - b) A result of any Works being used by the Procuring Entity:
 - i) for a purpose other than that indicated by, or reasonably to be inferred from, the Contract, or
 - ii) in conjunction with anything not supplied by the Contractor, unless such use was disclosed to the Contractor prior to the Base Date or is stated in the Contract.
- 175.4 The Contractor shall indemnify and hold the Procuring Entity harmless against and from any other claim which arises out of or in relation to (i) the manufacture, use, sale or import of any Goods, or (ii) any design for which the Contractor is responsible.
- 175.5 If a Party is entitled to be indemnified under this Sub-Clause, the indemnifying Party may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it. The other Party shall, at the request and cost of the indemnifying Party, assist in contesting the claim. This other Party (and its Personnel) shall not make any admission which might be prejudicial to the indemnifying Party, unless the indemnifying Party failed to take over the conduct of any negotiations, litigation or arbitration upon being requested to do so by such other Party.
- 175.6 For operation and maintenance of any plant or equipment installed, the contractor shall grant a non-exclusive and non-transferable license to the Procuring Entity under the patent, utility models, or other intellectual rights owned by the contractor or a third party from whom the contract or has received the rights to grant sub-licenses and shall also grant to the Procuring Entity a non-exclusive and non-transferable rights (without the rights to sub-license) to use the knowhow and other technical information disclosed to the contract or under the contract. Nothing contained here-in shall be construed as transferring ownership of any patent, utility model, trademark, design, copy right, know-how or other intellectual rights from the contractor or any other third party to the Procuring Entity.

17.6 Limitation of Liability

- 17.6.1 Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contractor for any in director consequential loss or damage which may be suffered by the other Party in connection with the Contract, other than as specifically provided in Sub-Clause 8.7 [Delay Damages]; Sub-Clause 11.2 [Cost of Remedying Defects]; Sub-Clause 15.4 [Payment after Termination]; Sub-Clause 16.4 [Payment on Termination]; Sub-Clause 17.1 [Indemnities]; Sub-Clause 17.4(b) [Consequences of Procuring Entity's Risks] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights].
- 17.6.2 The total liability of the Contractor to the Procuring Entity, under or in connection with the Contract other than under Sub-Clause 4.19 [Electricity, Water and Gas], Sub-Clause 4.20 [Procuring Entity's Equipment and Free-Issue Materials], Sub-Clause 17.1 [Indemnities] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights], shall not exceed the sum resulting from the application of a multiplier (less or greater than one) to the Accepted Contract Amount, as stated in **the Special Conditions of Contract**, or (if such multiplier or other sum is not so stated) the Accepted Contract Amount.
- 17.6.3 This Sub-Clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.

17.7 Use of Procuring Entity's Accommodation/Facilities

- 17.7.1 The Contractor shall take full responsibility for the care of the Procuring Entity provided accommodation and facilities, if any, as detailed in the Specification, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works).
- 17.7.2 If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Procuring Entity is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.

18 INSURANCE

18.1 General Requirements for Insurances

- 18.1.1 In this Clause, “insuring Party” means, for each type of insurance, the Party responsible for effecting and maintaining the insurance specified in the relevant Sub-Clause.
- 18.1.2 Wherever the Contractor is the insuring Party, each insurance shall be effected with insurers and in terms approved by the Procuring Entity. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.
- 18.1.3 Wherever the Procuring Entity is the insuring Party, each insurance shall be effected with insurers and in terms acceptable to the Contractor. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.
- 18.1.4 If a policy is required to indemnify joint insured, the cover shall apply separately to each insured as though a separate policy had been issued for each of the joint insured. If a policy indemnifies additional joint insured, namely in addition to the insured specified in this Clause, (i) the Contractor shall act under the policy on behalf of these additional joint insured except that the Procuring Entity shall act for Procuring Entity's Personnel, (ii) additional joint insured shall not be entitled to receive payments directly from the insurer or to have any other direct dealings with the insurer, and (iii) the insuring Party shall require all additional joint insured to comply with the conditions stipulated in the policy.
- 18.1.5 Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify the loss or damage. Payments received from insurers shall be used for the rectification of the loss or damage.

- 18.1.6 The relevant insuring Party shall, within the respective periods stated in **the Special Conditions of Contract** (calculated from the Commencement Date), submit to the other Party:
- a) Evidence that the insurances described in this Clause have been affected, and
 - b) copies of the policies for the insurances described in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment] and Sub-Clause 18.3 [Insurance against Injury to Persons and Damage to Property].
- 18.1.7 When each premium is paid, the insuring Party shall submit evidence of payment to the other Party. Whenever evidence or policies are submitted, the insuring Party shall also give notice to the Engineer.
- 18.1.8 Each Party shall comply with the conditions stipulated in each of the insurance policies. The insuring Party shall keep the insurers informed of any relevant changes to the execution of the Works and ensure that insurance is maintained in accordance with this Clause.
- 18.1.9 Neither Party shall make any material alteration to the terms of any insurance without the prior approval of the other Party. If an insurer makes (or attempts to make) any alteration, the Party first notified by the insurer shall promptly give notice to the other Party.
- 18.1.10 If the insuring Party fails to effect and keep in force any of the insurances it is required to effect and maintain under the Contract fails to provide satisfactory evidence and copies of policies in accordance with this Sub-Clause, the other Party may (at its option and without prejudice to any other right or remedy) effect insurance for the relevant coverage and pay the premiums due. The insuring Party shall pay the amount of these premiums to the other Party, and the Contract Price shall be adjusted accordingly.
- 18.1.11 Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or the Procuring Entity, under the other terms of the Contract otherwise. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor and/or the Procuring Entity.
- 18.1.12 Procuring Entity in accordance with these obligations, liabilities or responsibilities. However, if the insuring Party fails to effect and keep in force an insurance which is available and which it is required to effect and maintain under the Contract, and the other Party neither approves the omission nor effects insurance for the coverage relevant to this default, any moneys which should have been recoverable under this insurance shall be paid by the insuring Party.
- 18.1.13 Payments by one Party to the other Party shall be subject to Sub-Clause 2.5 [Procuring Entity's Claims] or Sub-Clause 20.1 [Contractor's Claims], as applicable.
- 18.1.14 The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to the insurance referred to Clause 18) with insurers from any eligible source country.

18.2 Insurance for Works and Contractor's Equipment

- 18.2.1 The insuring Party shall insure the Works, Plant, Materials and Contractor's Documents for not less than the full reinstatement cost including the costs of demolition, removal of debris and professional fees and profit. This insurance shall be effective from the date by which the evidence is to be submitted under subparagraph (a) of Sub-Clause 18.1 [General Requirements for Insurances], until the date of issue of the Taking-Over Certificate for the Works.
- 18.2.2 The insuring Party shall maintain this insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking-Over Certificate, and for loss or damage caused by the Contractor in the course of any other operations (including those under Clause 11 [Defects Liability]).
- 18.2.3 The insuring Party shall insure the Contractor's Equipment for not less than the full replacement value, including delivery to Site. For each item of Contractor's Equipment, the insurance shall be effective while it is being transported to the Site and until it is no longer required as Contractor's Equipment.
- 18.2.4 Unless otherwise stated in the Special Conditions, insurances under this Sub-Clause:
- a) Shall be effected and maintained by the Contractor as insuring Party,

- b) shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated to the Party actually bearing the costs of rectifying the loss or damage,
- c) shall cover all loss and damage from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks],
- d) shall also cover, to the extent specifically required in the tendering documents of the Contract, loss or damage to a part of the Works which is attributable to the use or occupation by the Procuring Entity of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h) of Sub-Clause 17.3 [Procuring Entity's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles per occurrence of not more than the amount stated in **the Special Conditions** of Contract (if an amount is not so stated, this sub-paragraph (d) shall not apply), and
- e) may however exclude loss of, damage to, and reinstatement of:
 - i) a part of the Works which is in a defective condition due to a defect in its design, materials or workmanship (but cover shall include any other parts which are lost or damaged as a direct result of this defective condition and not as described in sub-paragraph (ii) below),
 - ii) a part of the Works which is lost or damaged in order to reinstate any other part of the Works if this other part is in a defective condition due to a defect in its design, materials or workmanship,
 - iii) a part of the Works which has been taken over by the Procuring Entity, except to the extent that the Contractor is liable for the loss or damage, and
 - iv) Goods while they are not in Kenya, subject to Sub-Clause 14.5 [Plant and Materials intended for the Works].

1825 If, more than one year after the Base Date, the cover described in sub-paragraph (d) above ceases to be available at commercially reasonable terms, the Contractor shall (as insuring Party) give notice to the Procuring Entity, with supporting particulars. The Procuring Entity shall then (i) be entitled subject to Sub-Clause 2.5 [Procuring Entity's Claims] to payment of an amount equivalent to such commercially reasonable terms as the Contractor should have expected to have paid for such cover, and (ii) be deemed, unless he obtains the cover at commercially reasonable terms, to have approved the omission under Sub-Clause 18.1 [General Requirements for Insurances].

183 Insurance against Injury to Persons and Damage to Property

183.1 The insuring Party shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment]) or to any person (except persons insured under Sub-Clause 18.4 [Insurance for Contractor's Personnel]), which may arise out of the Contractor's performance of the Contract and occurring before the issue of the Performance Certificate.

1832 This insurance shall be for a limit per occurrence of not less than the amount stated in **the Special Conditions of Contract**, with no limit on the number of occurrences. If an amount is not stated in the **Special Conditions of Contract**, this Sub-Clause shall not apply.

1833 Unless otherwise stated in the Special Conditions, the insurances specified in this Sub-Clause:

- a) Shall be effected and maintained by the Contractor as insuring Party,
- b) shall be in the joint names of the Parties,
- c) shall be extended to cover liability for all loss and damage to the Procuring Entity's property (except things insured under Sub-Clause 18.2) arising out of the Contractor's performance of the Contract, and
- d) may however exclude liability to the extent that it arises from:
 - i) the Procuring Entity's right to have the Permanent Works executed on, over, under, in or
 - ii) through any land, and to occupy this land for the Permanent Works,
 - iii) damage which is an unavoidable result of the Contractor's obligations to execute the
 - iv) Works and remedy any defects, and
 - v) a cause listed in Sub-Clause 17.3 [Procuring Entity's Risks], except to the extent that cover is available at commercially reasonable terms.

184 Insurance for Contractor's Personnel

- 184.1 The Contractor shall effect and maintain insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel.
- 184.2 The insurance shall cover the Procuring Entity and the Architect against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Procuring Entity or of the Procuring Entity's Personnel.
- 184.3 The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

19. FORCE MAJEURE

19.1 Definition of Force Majeure

- 19.1.1 In this Clause, "Force Majeure" means an exceptional event or circumstance:
- a) Which is beyond a Party's control,
 - b) Which such Party could not reasonably have provided against before entering into the Contract,
 - c) which, having arisen, such Party could not reasonably have avoided or overcome, and
 - d) which is not substantially attributable to the other Party.
- 19.1.2 Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:
- a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
 - b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war,
 - c) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel,
 - d) munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity, and
 - e) natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.

19.2 Notice of Force Majeure

- 19.2.1 If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure.
- 19.2.2 The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.
- 19.2.3 Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.

19.3 Duty to Minimize Delay

Each Party shall at all times use all reasonable endeavors to minimize any delay in the performance of the Contract as a result of Force Majeure. A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.

19.4 Consequences of Force Majeure

- 19.4.1 If the Contractor is prevented from performing his substantial obligations under the Contract by Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], and suffers delay and/ or incurs Cost by reason of such Force Majeure, the Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- b) if the event or circumstance is of the kind described in sub-paragraphs (i) to (iv) of Sub-Clause 19.1 [Definition of Force Majeure] and, in sub-paragraphs (ii) to (iv), occurs in Kenya, payment of any such Cost, including the costs of rectifying or replacing the Works and/or Goods damaged or destroyed by Force Majeure, to the extent they are not indemnified through the insurance policy referred to in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment].

1942 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

195 Force Majeure Affecting Subcontractor

If any Subcontractor is entitled under any contract or agreement relating to the Works to relief from force majeure on terms additional to or broader than those specified in this Clause, such additional or broader force majeure events or circumstances shall not excuse the Contractor's non-performance or entitle him to relief under this Clause.

196 Optional Termination, Payment and Release

196.1 If the execution of substantially all the Works in progress is prevented for a continuous period of 84 days by reason of Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], or for multiple periods which total more than 140 days due to the same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given, and the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment].

196.2 Upon such termination, the Architect shall determine the value of the work done and issue a Payment Certificate which shall include:

- a) the amount payable for any work carried out for which a price is stated in the Contract;
- b) the Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Procuring Entity when paid for by the Procuring Entity, and the Contractor shall place the same at the Procuring Entity's disposal;
- c) other Cost or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;
- d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost); and
- e) the Cost of repatriation of the Contractor's staff and lab or employed wholly in connection with the Works at the date of termination.

197 Release from Performance

Notwithstanding any other provision of this Clause, if any event or circumstance outside the control of the Parties (including, but not limited to, Force Majeure) arises which makes it impossible or unlawful for either or both Parties to fulfill its or their contractual obligations or which, under the law governing the Contract, entitles the Parties to be released from further performance of the Contract, then upon notice by either Party to the other Party of such event or circumstance:

- a) The Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and
- b) The sum payable by the Procuring Entity to the Contractor shall be the same as would have been payable under Sub-Clause 19.6 [Optional Termination, Payment and Release] if the Contract had been terminated under Sub-Clause 19.6.

20. SETTLEMENT OF CLAIMS AND DISPUTES

20.1 Contractor's Claims

- 20.1.1 If the Contractor considers itself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give Notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 30 days after the Contractor became aware, or should have become aware, of the event or circumstance.
- 20.1.2 If the Contractor fails to give notice of a claim within such period of 30 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply.
- 20.1.3 The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.
- 20.1.4 The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Engineer. Without admitting the Procuring Entity's liability, the Architect may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/ or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Architect to inspect all these records and shall (if instructed) submit copies to the Engineer.
- 20.1.5 Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Architect fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/ or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:
- a) This fully detailed claim shall be considered as interim;
 - b) The Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/ or amount claimed, and such further particulars as the Architect may reasonably require; and
 - c) The Contractor shall send a final claim within 30 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer.
- 20.1.6 Within 42 days after receiving a Notice of a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Architect and approved by the Contractor, the Architect shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars but shall nevertheless give his response on the principles of the claim within the above defined time period.
- 20.1.7 Within the above defined period of 42 days, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.
- 20.1.8 Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.
- 20.1.9 If the Architect does not respond within the time frame defined in this Clause, either Party may consider that the claim is rejected by the Architect and any of the Parties may refer the dispute for amicable settlement in accordance with Clause 20.3.
- 20.1.10 The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/ or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause 20.3.

202 Procuring Entity's Claims

- 202.1 If the Procuring Entity considers itself to be entitled to any payment under any Clause of these Conditions or otherwise in connection with the Contract, and/or to any extension of the Defects Notification Period, the Procuring Entity or the Architect shall give notice and particulars to the Contractor. However, notice is not required for payments due under Sub-Clause 4.19 [Electricity, Water and Gas], under Sub-Clause 4.20 [Procuring Entity's Equipment and Free-Issue Materials], or for other services requested by the Contractor.
- 202.2 The notice shall be given as soon as practicable and no longer than 30 days after the Procuring Entity became aware, or should have become aware, of the event or circumstances giving rise to the claim. A notice relating to any extension of the Defects Notification Period shall be given before the expiry of such period.
- 202.3 The particulars shall specify the Clause or other basis of the claim and shall include substantiation of the amount and/or extension to which the Procuring Entity considers itself to be entitled in connection with the Contract. The Architect shall then proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the amount (if any) which the Procuring Entity is entitled to be paid by the Contractor, and/ or (ii) the extension (if any) of the Defects Notification Period in accordance with Sub-Clause 11.3 [Extension of Defects Notification Period].
- 202.4 This amount may be included as a deduction in the Contract Price and Payment Certificates. The Procuring Entity shall only be entitled to set off against or make any deduction from an amount certified in a Payment Certificate, or to otherwise claim against the Contractor, in accordance with this Sub-Clause.

203 Amicable Settlement

Where a notice of a claim has been given, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a notice of a claim in accordance with Sub-Clause 20.1 above should move to commence arbitration after 60 days from the day on which a notice of a claim was given, even if no attempt at an amicable settlement has been made.

204 Matters that may be referred to arbitration

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) Whether or not the issue of an instruction by the Architect is empowered by these Conditions.
- b) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
- c) Any dispute arising in respect risks arising from matters referred to in Clause 17.3 and Clause 19.
- e) 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 the Procuring Entity and the Contractor agree otherwise in writing.

205 Arbitration

- 205.1 Any claim or dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 20.3 shall be finally settled by arbitration.
- 205.2 No arbitration proceedings shall be commenced on any claim or dispute where notice of a claim or dispute 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.
- 205.3 Notwithstanding the issue of a notice as stated above, the arbitration of such a claim or dispute shall not commence unless an attempt has in the first instance been made by the parties to settle such claim or dispute amicably with or without the assistance of third parties. Proof of such attempt shall be required.
- 205.4 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.

- 2055 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 require mentor notice had been given.
- 2056 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Architect from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.
- 2057 Neither Party shall be limited in the proceedings before the arbitrators to the evidence, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction.
- 2057 Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, and the Architect shall not be altered by reason of any arbitration being conducted during the progress of the Works.
- 2058 The terms of the remuneration of each or all the members of Arbitration shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

20.6 Arbitration with National Contractors

- 206.1 If the Contract is with national contractors, arbitration proceedings will be conducted in accordance with the Arbitration Laws of Kenya. In case of any claim or dispute, such claim or 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, on the request of the applying party, 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
- 206.2 The institution written to first by the aggrieved party shall take precedence over all other institutions.

20.7 Arbitration with Foreign Contractors

- 207.1 Arbitration with foreign contractors shall be conducted in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL); or with proceedings administered by the International Chamber of Commerce (ICC) and conducted under the ICC Rules of Arbitration; by one or more arbitrators appointed in accordance with said arbitration rules.
- 207.2 The place of arbitration shall be a location specified in the SCC; and the arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [Law and Language].

20.8 Alternative Arbitration Proceedings

Alternatively, the Parties may refer the matter to the Nairobi Centre for International Arbitration (NCIA) which offers a neutral venue for the conduct of national and international arbitration with commitment to providing institutional support to the arbitral process.

20.9 Failure to Comply with Arbitrator's Decision

- 209.1 The award of such Arbitrator shall be final and binding up on the parties.
- 209.2 In the event that a Party fails to comply with a final and binding Arbitrator's decision, then the other Party may, without prejudice to any other rights it may have, refer the matter to a competent court of law.

20.10 Contract operations to continue

Notwithstanding any reference to arbitration herein,

- 1.1.1 the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
- 1.1.2 the Procuring Entity shall pay the Contractor any monies due the Contractor.

SECTION IX - SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions shall supplement the GCC. Whenever there is a conflict, the provisions here in shall prevail over those in the GCC.

Part A - Contract Data

Conditions	Sub-Clause	Data
Procuring Entity's name and address	Heading	Kaimosi Friends University College (KAFUCO) P.O. Box 385 – 50309, Kaimosi
Name and Reference No. of the Contract	Heading and 3.1.1	Proposed Construction of Library At Kaimosi Friends University College W.P Item No. D106 WE/VHG/2002 Job No. 10936A
Engineers Name and Address	Heading and 3.1.1	Works Secretary, State Department for Public Works P.O. Box 30743-00100 Nairobi. Telephone:+254 02723101
Contractor's Representative's name	4.3.1	
Key Personnel names	6.9.1	
Time for Completion	1.1.	As per main works
Defects Notification Period	1.1	6 Months after practical completion
Works	1.1	The Contract Works consist of Supply, installation, testing and commissioning of structured cabling and IPBX, Audio visual, CCTV and access control installation works
Sections	1.1	Not Applicable
Electronic transmission systems	1.3	
Time for the Parties entering into a Contract Agreement	1.6	As per main works
Commencement date	8.1.1	To be Agreed with the Project Manager
Time for access to the site	2.1	No later than the Commencement Date, and not later than 14 days after Commencement Date
Architects Duties and Authority	3.1.6(b) (ii)	Variations resulting in increase of the accepted Contract Amount in excess of 25% shall require approval of the Procuring Entity
Performance Security	4.2.1	The performance security will be in the form of a Performance Bond in the amount(s) of 5% of the accepted Contract Amount and in the same currency (ies) of the Accepted Contract Amount
Normal working hours	6.5	0800 - 1700 HOURS
Delay damages for the Works	8.7 & 14.15(b)	Ksh 30,000.00 per week
Maximum amount of delay damages	8.7	1,000,000.00

Conditions	Sub-Clause	Data
Provisional Sums	13.5. (b)(ii)	<i>[If there are Provisional Sums, insert a percentage for adjustment of Provisional Sums]</i> --- %
Adjustments for Changes in Cost	13.8	Period "n" applicable to the adjustment multiplier "Po": _____ <i>[Insert the period if different from one (1) month; if period "n" is one (1) month, insert "not applicable"]</i>
Total advance payment	14.2.1	N/A
Repayment amortization rate of advance payment	14.2.5 (b)	N/A
Percentage of Retention	14.3.2 (c)	10%
Limit of Retention Money	14.3.2 (c)	<u>2%</u> of the Accepted Contract Amount
Plant and Materials	14.5(b)(i)	If Sub-Clause 14.5 applies: Plant and Materials for payment Free on Board N/A
	14.5(C)(i)	Plant and Materials for payment when delivered to the Site. <i>Plant And Materials to be Incorporated into Permanent Work</i>
Minimum Amount of Interim Payment Certificates	14.6	3.0% of the Accepted Contract Amount.
Publishing source of commercial interest rates for financial charges in case of delayed payment	14.8	Specify _____ % rate per month of delayed payment. <i>3 percentage points above the Central Bank of Kenya's average rate for base lending prevailing as of the first day the payment becomes overdue</i>
Maximum total liability of the Contractor to the Procuring Entity	17.6	The product of <i>zero point one (0.10)</i> times the Accepted Contract Amount,
Periods for submission of insurance: a. Evidence of insurance. b. Relevant policies	18.1	14 days <u>14 days</u>
Maximum amount of deductibles for insurance of the Procuring Entity's risks	18.2.4 (d)	NIL
Minimum amount of third-party insurance	18.3	
The place of Arbitration	20.7.2	

SECTION X - CONTRACT FORMS

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD

FORM No. 2 - NOTIFICATION OF AWARD - LETTER OF ACCEPTANCE

FORM No. 3 - CONTRACT AGREEMENT

FORM No. 4 - PERFORMANCE SECURITY [Option 1 - Unconditional Demand Bank Guarantee]

FORM No. 5- PERFORMANCE SECURITY [Option 2– Performance Bond]

FORM No. 6 - ADVANCE PAYMENT SECURITY

FORM No. 7 - RETENTION MONEY SECURITY

FORM No 1: NOTIFICATION OF INTENTION TO AWARD OF CONTRACT

This Notification of Award shall be sent to each Tenderer that submitted a Tender and was not successful. Send this Notification to the Tenderer's Authorized Representative named in the Tender Information Form on the format below.

FORMAT

1. For the attention of Tenderer's Authorized Representative

- i) Name: *[insert Authorized Representative's name]*
- ii) Address: *[insert Authorized Representative's Address]*
- iii) Telephone: *[insert Authorized Representative's telephone/fax numbers]*
- iv) Email Address: *[insert Authorized Representative's email address]*

[IMPORTANT: insert the date that this Notification is transmitted to Tenderers. The Notification must be sent to all Tenderers simultaneously. This means on the same date and as close to the same time as possible.]

2. Date of transmission: *[email]* on *[date]* (local time)

This Notification is sent by (Name and designation) _____

3. Notification of Award

- i) Procuring Entity: *[insert the name of the Procuring Entity]*
- ii) Project: *[insert name of project]*
- iii) Contract title: *[insert the name of the contract]*
- iv) ITT No: *[insert ITT reference number from Procurement Plan]*

This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period, you may:

4. Request a debriefing in relation to the evaluation of your tender by submitting a Procurement-related Complaint in relation to the decision to award the contracts.

- a) The successful tenderers

i) Name of successful Tender _____

ii) Address of the successful Tender _____

iii) Contract price of the successful Tender Kenya Shillings _____

(in words

)

- b) The reasons for your tender being unsuccessful are as follows:

- c) Other Tenderers

Names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out.

SNo	Name of Tender	Tender Price as read out	Tender's evaluated price (Note a)	One Reason Why Not Evaluated
1				
2				
3				
4				
5				

(Note a) State NE if not evaluated

5. How to request a debriefing

- a) DEADLINE: The dead line to request a debriefing expires at midnight on *[insert date]* (local time).
- b) You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (5) Business Days of receipt of this Notification of Intention to Award.
- c) Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:
 - i) Attention: *[insert full name of person, if applicable]*
 - ii) Title/position: *[insert title/position]*
 - iii) Agency: *[insert name of Procuring Entity]*
 - iv) Email address: *[insert email address]*
- d) If your request for a debriefing is received within the 3 Days deadline, we will provide the debriefing within five (3) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (3) Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.
- e) The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.
- f) If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Days from the date of publication of the Contract Award Notice.

6. How to make a complaint?

- a) Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, *[insert date]* (local time).
- b) Provide the contract name, reference number, name of the Tenderer, contact details; and address the Procurement-related Complaint as follows:
 - i) Attention: *[insert full name of person, if applicable]*
 - ii) Title/position: *[insert title/ position]*
 - iii) Agency: *[insert name of Procuring Entity]*
 - iv) Email address: *[insert email address]*
- c) At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.
- d) Further information: For more information refer to the Public Procurement and Disposals Act 2015 and its Regulations available from the Website www.ppra.go.ke.

You should read these documents before preparing and submitting your complaint.

- e) There are four essential requirements:
 - i) You must be an 'interested party'. In this case, that means a Tenderer who submitted a Tender in this tendering process and is the recipient of a Notification of Intention to Award.
 - ii) The complaint can only challenge the decision to award the contract.
 - iii) You must submit the complaint within the period stated above.
 - iv) You must include, in your complaint, all of the information required to support your complaint.

7. Standstill Period

- i) DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).
- ii) The Standstill Period lasts ten (14) Days after the date of transmission of this Notification of Intention to Award.
- iii) The Standstill Period may be extended as stated in paragraph Section 5(d) above.

If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

Signature: _____

Name: _____

Title/position: _____

Telephone: _____

FORM NO 2: LETTER OF AWARD

[letterhead paper of the Procuring Entity]

[date]

To: *[name and address of the Contractor]*

This is to notify you that your Tender dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amount in numbers and words]* *[name of currency]*, as corrected and modified in accordance with the Instructions to Tenderers, is hereby accepted by..... *(name of Procuring Entity)*.

You are requested to furnish the Performance Security within in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms included in Section VIII, Contract Forms, of the Tender Document.

Authorized Signature:

Name and Title of Signatory:

Name of Procuring Entity:

Attachment: *Contract Agreement*:

FORM NO 3: CONTRACT AGREEMENT

THIS AGREEMENT made the day of..... 20....., between.....
.....of..... (hereinafter “the Procuring
Entity”), of the one part, and..... of
..... (hereinafter “the Contractor”), of the
other part:

WHEREAS the Procuring Entity desires that the Works known as..... should
be executed by the Contractor, and has accepted a Tender by the Contractor for the execution and completion of
these Works and the remedying of any defects there in,

The Procuring Entity and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
 - a) The Notification of Award
 - b) the Form of Tender
 - c) the addenda Nos..... (if any)
 - d) the Special Conditions of Contract
 - e) the General Conditions of Contract;
 - f) the Specifications
 - g) the Drawings; and
 - h) the completed Schedules and any other documents forming part of the contract.
3. In consideration of the payments to be made by the Procuring Entity to the Contractor as specified in this Agreement, the Contractor here by covenants with the Procuring Entity to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Procuring Entity here by covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects there in, 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.

INWITNESS where of the parties here to have caused this Agreement to be executed in accordance with the
Laws of Kenya on the day, month and year specified above.

Signed and sealed by..... (for the Procuring Entity)

Signed and sealed by..... (for the Contractor).

FORM NO. 4 - PERFORMANCE SECURITY

[Option 1 - Unconditional Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: [insert name and Address of Procuring Entity]

Date: _____ [Insert date of issue]

Guarantor: [Insert name and address of place of issue, unless indicated in the letterhead]

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ dated _____ with (name of Procuring Entity) _____ (the Procuring Entity as the Beneficiary), for the execution of _____ (hereinafter called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.
3. At the request of the Contractor, we as Guarantor, here by irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (in words),¹ such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.
4. This guarantee shall expire, no later than the Day of², and any demand for payment under it must be received by us at the office indicated above on or before that date.
5. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

[Name of Authorized Official, signature(s) and seals/stamps]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

¹The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency of the Contract or a freely convertible currency acceptable to the Beneficiary.

²Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.

FORM No. 5- PERFORMANCE SECURITY

[Option 2– Performance Bond]

[Note: Procuring Entities are advised to use Performance Security – Unconditional demand Bank Guarantee instead of Performance Bond due to difficulties involved in calling Bond holder to action]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary:

[insertnameandAddressofProcuringEntity] **Date:**

_____ *[Insert date of issue]*

PERFORMANCE BOND No.: _____

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. By this Bond _____ as Principal (hereinafter called “the Contractor”) and _____] as Surety (hereinafter called “the Surety”), are held and firmly bound unto _____] as Oblige (hereinafter called “the Procuring Entity”) in the amount of _____ for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.
2. WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the _____ day of _____, 20_____, _____ for _____ in accordance with the documents, plans, specifications, and amendments there to, which to the extent here in provided for, are by reference made part here of and are here in after referred to as the Contract.
3. NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Procuring Entity to be, in default under the Contract, the Procuring Entity having performed the Procuring Entity's obligations there under, the Surety may promptly remedy the default, or shall promptly:
 - a) Complete the Contract in accordance with its terms and conditions; or
 - b) Obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term “Balance of the Contract Price,” as used in this paragraph, shall mean the total amount payable by Procuring Entity to Contractor under the Contract, less the amount properly paid by Procuring Entity to Contractor; or
 - c) Pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.
4. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.
5. Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named here in or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.
6. In testimony whereof, the Contractor has here unto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly at tested by the signature of his legal representative,

this day _____ of _____ 20 _____.

SIGNED ON _____ on behalf of _____

By _____ in the capacity of _____

In the presence of _____

SIGNED ON _____ on behalf of _____

By _____ in the capacity of _____

In the presence of _____

FORM NO. 6 - ADVANCE PAYMENT SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ [Insert name and Address of Procuring

Entity] **Date:** _____ [Insert date of issue]

ADVANCE PAYMENT GUARANTEE No.: _____ [Insert guarantee reference number]

Guarantor: [Insert name and address of place of issue, unless indicated in the letterhead]

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____ (in words _____) is to be made against an advance payment guarantee.
3. At the request of the Contractor, we as Guarantor, here by irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (in words _____) upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:
 - a) Has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
 - b) Has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.
4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Contractor on its account number _____ at _____.
5. The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or on the _____ day of _____, 20____, ² _____, whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.
6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

FORM NO. 7 – RETENTION MONEY SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[Insert name and Address of Procuring Entity]*

Date: _____ *[Insert date of issue]*

Advance payment guarantee no. *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that _____ *[insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Contractor") has entered into Contract No. _____ *[insert reference number of the contract]* dated _____ with the Beneficiary, for the execution of _____ *[insert name of contract and brief description of Works]* (hereinafter called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, and payment of *[insert the second half of the Retention Money]* is to be made against a Retention Money guarantee.
3. At the request of the Contractor, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]* _____ *[insert amount in words]* _____ upon receipt by us of the Beneficiary's complying demands supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or showgrounds for your demand or the sum specified there in.
4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as referred to above has been credited to the Contractor on its account number _____ at _____ *[insert name and address of Applicant's bank]*.
5. This guarantee shall expire no later than the.....Day of.....², and any demand for payment under it must be received by us at the office indicated above on or before that date.
6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months]* *[one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

