Kenya Airports Authority

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**KAA/OT/UKUNDA/0169/2024-2025**

**24th April, 2025**

To: **All Bidders**

**RE: PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP**

**TENDER NO. KAA/OT/UKUNDA/0169/2024-2025**

**ADDENDUM 1**

The following are tender clarifications/addendum issued regarding the above tender in accordance to instructions to tenderers clause 10.3 of the bidding document.

***THE ORIGINAL TENDER DOCUMENT HAS BEEN EXPUNGED AND REPLACE IN ITS ENTIRETY WITH ANNEXED TENDER DOCUMENT***

The closing/opening date remains on **15th May, 2025 at 11:00 a.m.** from **6th May, 2025 11:00 a.m.**

Kindly ensure your tender is valid for a period of **186 days** and your tender security is valid for a period of **216 days** from **New closing/opening date of 15th May, 2025 at 11.00. a. m.**

This addendum forms part of the bidding document and is binding on all bidders. All other conditions remain the same.

**Vincent Korir**
**GM (PROCUREMENT AND LOGISTICS)**
**For: MANAGING DIRECTOR/CEO**

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# PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP

## FOR

## KENYA AIRPORTS AUTHORITY

## TENDER No. KAA/OT/UKUNDA/0169/2024-2025

## APRIL, 2025


**General Manager (P&ES)**
**KENYA AIRPORTS AUTHORITY**
**P.O.BOX 19001-00501**
**NAIROBI.**

**MANAGING DIRECTOR/CEO**
**KENYA AIRPORTS AUTHORITY**
**P.O.BOX 19001-00501**
**NAIROBI.**

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## INVITATION TO TENDER

**CONTRACT NO. KAA/OT/UKUNDA/0169 /2023-2024** **Date; 15th April 2025**

**CONTRACT NO: PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP**

1. Kenya Airports Authority invites sealed tenders from interested bidders for **Proposed Construction Of New Passenger Terminal Building At Ukunda (Diani) Airstrip** through an Open tender process pursuant to Public Procurement Asset Disposal Act 2015.

2. Tendering will be conducted under Open Procurement tendering method using a standardized tender document. Tendering is open to all eligible tenderers.

3. A complete set of Tender documents are downloadable from the KAA supplier login screen using the link https://kaa.go.ke/corporate/procurement/ . Tender documents obtained electronically will be free of charge

4. Tender documents may be viewed and downloaded for free from the website (www.kaa.go.ke). Tenderers who download the tender document must forward their particulars immediately to (tenders@kaa.go.ke , 6611000 and P.O Box 19001- 00501 Nairobi) to facilitate any further clarification or addendum**.**

5. The Tenderer shall chronologically serialize all pages of the tender documents and a table of contents shall be submitted.

6. The tender shall be submitted online on or before **6th May, 2025 at 11.00 am**. Interested bidders who are not in KAA system and therefore do not have login credentials should contact KAA procurement through email: tenders@kaa.go.ke for login credentials early enough and not later than three (3) days before tender closing date. All relevant submission documents must be attached on the login submission screen (*On submission screen, click technical Rfx Response tab which will lead you to the second screen (Cfolder) where the system creates a folder specific to you for uploading your technical tender response documents. Here you click "Tech Bid" subfolder and create attachments. "**Caution Do not attach your documents on the collaboration folder**"*). For Financial Proposal, use the submission financial screen for inputting the Price and related financial attachments on Notes and attachments. A step by step manual/guide is available for downloading using the link https://www.kaa.go.ke/corporate/procurement/manuals/. Bidders should note that documents submitted for purposes of registration for login credentials do not form part of the tender document.

7. All Prices quoted should be inclusive of all costs and taxes; and must be in Kenya shillings and shall remain valid for **186 days** from the closing date of Tender.

8. Tenders will be opened **online** immediately thereafter on **6th May, 2025 at 11.00 am** at the Conference Room, 1st Floor, Kenya Airports Authority Headquarters complex building. A link shall be provided to those tenderers who shall submit their tenders online and would want to participate in the tender opening. Tenderers shall therefore be required to submit their email address to tenders@kaa.go.ke to enable them access this link during tender opening.

9. A pre-bid/site visit shall be held on **24th April, 2025 at 10:00 am** at Ukunda Airstrip Diani

10. Late tenders will be rejected.

11. A complete set of Tender documents are downloadable from the KAA supplier login screen using the link https://kaa.go.ke/corporate/procurement/ . Tender documents obtained electronically will be free of charge.

12. Tender documents may be viewed and downloaded for free from the website ((*www.kaa.go.ke*).). Tenderers who download the tender document must forward their particulars immediately to

*tenders@kaa.go.ke* to facilitate any further clarification or addendum. *No other communication channel shall be used except through this email address.*

**13.** Bidders shall not have access to the eProcurement system after the official closing time.

**14.** The addresses referred to above are:

**Address for obtaining further information and for purchasing tender documents**

i. Name of Procuring Entity – KENYA AIRPORTS AUTHORITY
ii. Physical address - Kenya Airports Authority Headquarters complex building, Jomo Kenyatta International Airport, Airport North Road, 2nd Floor, Procurement & Logistics Department
iii. Postal Address – P.O Box 19001 – 00501 Nairobi
iv. Officer to be contacted. – General Manager, Procurement and Logistics, Email: tenders@kaa.go.ke

# PART 1 - TENDERING PROCEDURES

# SECTION I - INSTRUCTIONS TO TENDERERS

## GENERAL PROVISIONS

### Scope of Tender

1.1 The Procuring Entity as defined in the Appendix to Conditions of Contract invites tenders for Works Contract as described in the tender documents. The name, identification, and number of lots (contracts) of this Tender Document are specified in the TDS.

1.2 Throughout this tendering document:

a) The term "in writing" means communicated in written form (e.g. by mail, e-mail, fax, including if specified in the TDS, distributed or received through the electronic-procurement system used by the Procuring Entity) with proof of receipt;

b) if the context so requires, "singular" means "plural" and vice versa;

c) "Day" means calendar day, unless otherwise specified as "Business Day". A Business Day is any day that is an official working day of the Procuring Entity. It excludes official public holidays.

### Fraud and Corruption

2.1 The Procuring Entity requires compliance with the provisions of the Public Procurement and Asset Disposal Act, 2015, Section 62 "Declaration not to engage in corruption". The tender submitted by a person shall include a declaration that the person shall not engage in any corrupt or fraudulent practice and a declaration that the person or his or her sub-contractors are not debarred from participating in public procurement proceedings.

2.2 The Procuring Entity requires compliance with the provisions of the Competition Act 2010, regarding collusive practices in contracting. Any tenderer found to have engaged in collusive conduct shall be disqualified and criminal and/or civil sanctions may be imposed. To this effect, Tenders shall be required to complete and sign the "Certificate of Independent Tender Determination" annexed to the Form of Tender.

2.3 Tenderers shall permit and shall cause their agents (where declared or not), subcontractors, sub-consultants, service providers, suppliers, and their personnel, to permit the Procuring Entity to inspect all accounts, records and other documents relating to any initial selection process, pre-qualification process, tender submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Procuring Entity.

2.4 Unfair Competitive Advantage -Fairness and transparency in the tender process require that the firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender. To that end, the Procuring Entity shall indicate in the **Data Sheet** and make available to all the firms together with this tender document all information that would in that respect give such firm any unfair competitive advantage over competing firms.

### Eligible Tenderers

3.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 3.8, or an individual or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the tendering process and, in the event the JV is awarded the Contract, during contract execution. Members of a joint venture may not also make an individual tender, be a subcontractor in a separate tender or be part of another joint venture for the purposes of the same Tender. The maximum number of JV members shall be specified in the **TDS.**

3.2 Public Officers of the Procuring Entity, their Spouses, Child, Parent, Brothers or Sister. Child, Parent, Brother or Sister of a Spouse, their business associates or agents and firms/organizations in which they have a substantial or controlling interest shall not be eligible to tender or be awarded a contract. Public Officers are also not allowed to participate in any procurement proceedings.

3.3 A Tenderer shall not have a conflict of interest. Any tenderer found to have a conflict of interest shall be disqualified. A tenderer may be considered to have a conflict of interest for the purpose of this tendering process, if the tenderer:

**a)** Directly or indirectly controls, is controlled by or is under common control with another tenderer; or

**b)** Receives or has received any direct or indirect subsidy from another tenderer; or

**c)** Has the same legal representative as another tenderer; or

**d)** Has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process; or

**e)** Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods or works that are the subject of the tender; or

**f)** any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as a consultant for Contract implementation; or

**g)** Would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the contract specified in this Tender Document; or

**h)** Has a close business or personal relationship with senior management or professional staff of the Procuring Entity who has the ability to influence the bidding process and:

i) are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract; or

ii) may be involved in the implementation or supervision of such Contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.

3.4 A tenderer shall not be involved incorrupt, coercive, obstructive or fraudulent practice. A tenderer that is proven to have been involved in any of these practices shall be automatically disqualified.

3.5 A Tenderer (either individually or as a JV member) shall not participate in more than one Tender, except for permitted alternative tenders. This includes participation as a subcontractor in other Tenders. Such participation shall result in the disqualification of all Tenders in which the firm is involved. Members of a joint venture may not also make an individual tender, be a subcontractor in a separate tender or be part of another joint venture for the purposes of the same Tender. A firm that is not a tenderer or a JV member may participate as a subcontractor in more than one tender.

3.6 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT3.9. A Tenderer shall be deemed to have the nationality of a country if the Tenderer is constituted, incorporated or registered in and operates inconformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or sub-consultants for any part of the Contract including related Services.

3.7 A Tenderer that has been debarred from participating in public procurement shall be ineligible to tender or be awarded a contract. The list of debarred firms and individuals is available from the website of PPRA www.ppra.go.ke.

3.8 A Tenderer that is a state-owned enterprise or a public institution in Kenya may be eligible to tender and be awarded a Contract(s) only if it is determined by the Procuring Entity to meet the following conditions, i.e. if it is:

i) A legal public entity of Government and/or public administration,

ii) financially autonomous and not receiving any significant subsidies or budget support from any

public entity or Government, and

iii) operating under commercial law and vested with legal rights and liabilities similar to any commercial enterprise to enable it compete with firms in the private sector on an equal basis.

3.9 Firms and individuals shall be ineligible if their countries of origin are:

**a)** as a matter of law or official regulations, Kenya prohibits commercial relations with that country, or

**b)** by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.

A tenderer shall provide such documentary evidence of eligibility satisfactory to the Procuring Entity, as the Procuring Entity shall reasonably request.

3.10 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, local subcontracts and labor) from citizen suppliers and contractors. To this end, a foreign tenderer shall provide in its tender documentary evidence that this requirement is met. Foreign tenderers not meeting this criterion will be automatically disqualified. Information required to enable the Procuring Entity determine if this condition is met shall be provided for this purpose in *"SECTION III-EVALUATION AND QUALIFICATION CRITERIA, Item 9".*

3.11 Pursuant to the eligibility requirements of ITT4.10, a tender is considered a foreign tenderer, if the tenderer is not registered in Kenya or if the tenderer is registered in Kenya and has less than 51 percent ownership by Kenyan citizens. JVs are considered as foreign tenderers if the individual member firms are not registered in Kenya or if are registered in Kenya and have less than 51 percent ownership by Kenyan citizens. The JV shall not subcontract to foreign firms more than 10 percent of the contract price, excluding provisional sums.

3.12 The National Construction Authority Act of Kenya requires that all local and foreign contractors be registered with the National Construction Authority and be issued with a Registration Certificate before they can undertake any construction works in Kenya. Registration shall not be a condition for tender, but it shall be a condition of contract award and signature. A selected tenderer shall be given opportunity to register before such award and signature of contract. Application for registration with National Construction Authority may be accessed from the website www.nca.go.ke.

3.13 The Competition Act of Kenya requires that firms wishing to tender as Joint Venture undertakings which may prevent, distort or lessen competition in provision of services are prohibited unless they are exempt in accordance with the provisions of Section 25 of the Competition Act, 2010. JVs will be required to seek for exemption from the Competition Authority. Exemption shall not be a condition for tender, but it shall be a condition of contract award and signature. A JV tenderer shall be given opportunity to seek such exemption as a condition of award and signature of contract. Application for exemption from the Competition Authority of Kenya may be accessed from the website www.cak.go.ke.

3.14 A Kenyan tenderer shall be eligible to tender if it provides evidence of having fulfilled his/her tax obligations by producing a valid tax compliance or valid tax certificate issued by the Kenya Revenue Authority.

**Eligible Goods, Equipment, and Services**

4.1 Goods, equipment and services to be supplied under the Contract may have their origin in any country that is not ineligible under ITT3.9. At the Procuring Entity's request, Tenderers may be required to provide evidence of the origin of Goods, equipment and services.

4.2 Any goods, works and production processes with characteristics that have been declared by the relevant national environmental protection agency or by other competent authority as harmful to human beings and to the environment shall not be eligible for procurement.

**Tenderer's Responsibilities**

5.1 The tenderer shall bear all costs associated with the preparation and submission of his/her tender, and the Procuring Entity will in no case be responsible or liable for those costs.

5.2 The tenderer, at the tenderer's own responsibility and risk, is encouraged to visit and examine and inspect the Site of the Works and its surroundings and obtain all information that may be necessary for preparing the tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the tenderer's own expense.

5.3 The Tenderer and any of its personnel or agents will be granted permission by the Procuring Entity to enter up on its premises and lands for the purpose of such visit. The Tenderer shall indemnify the Procuring Entity against all liability arising from death or personal injury, loss of or damage to property, and any other losses and expenses incurred as a result of the examination and inspection.

5.4 The tenderer shall provide in the Form of Tender and Qualification Information, a preliminary description of the proposed work method and schedule, including charts, as necessary or required.

## CONTENTS OF TENDER DOCUMENTS

**Sections of Tender Document**

6.1 The tender document consists of Parts 1, 2, and 3, which includes all the sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITT10.

**PART 1: Tendering Procedures**

Section I: Instructions to Tenderers

Section II: Tender Data Sheet (TDS)

Section III: Evaluation and Qualification Criteria

Section IV: Tendering Forms

**PART 2: Works' Requirements**

Section V: Bills of Quantities

Section VI: Specifications

Section VII: Drawings

**PART3: Conditions of Contract and Contract Forms**

Section VIII: General Conditions (GCC)

Section IX: Particular Conditions of Contract

Section X: Contract Forms

6.2 The Invitation to Tender Notice issued by the Procuring Entity is not part of the Contract documents.

6.3 Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the Tender document, responses to requests for clarification, the minutes of a pre-arranged site visit and those of the pre-Tender meeting (if any), or Addenda to the Tender document

in accordance with ITT 10. In case of any contradiction, documents obtained directly from the Procuring Entity shall prevail.

6.4 The Tenderer is expected to examine all instructions, forms, terms, and specifications in the Tender Document and to furnish with its Tender all information and documentation as is required by the Tender document.

**Clarification of Tender Document, Site Visit, Pre-Tender Meeting**

7.1 A Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity's address **specified in the TDS** or raise its enquiries during the pre-Tender meeting if provided for in accordance with ITT 7.2. The Procuring Entity will respond in writing to any request for clarification, provided that such request is received no later than the period specified in the **TDS p**rior to the deadline for submission of tenders. The Procuring Entity shall forward copies of its response to all tenderers who have acquired the Tender documents in accordance with ITT 7.4, including a description of the inquiry but without identifying its source. If so specified **in the TDS**, the Procuring Entity shall also promptly publish its response at the web page identified in the **TDS**. Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents following the procedure under ITT 8 and ITT 22.2.

7.2 The Tenderer, at the Tenderer's own responsibility and risk, is encouraged to visit and examine and inspect the site(s) of the required contracts and obtain all information that may be necessary for preparing a tender. The costs of visiting the Site shall be at the Tenderer's own expense. The Procuring Entity shall specify in the **TDS** if a pre- arranged Site visit and or a pre-tender meeting will be held, when and where. The Tenderer's designated representative is invited to attend a pre-arranged site visit and a pre-tender meeting, as the case may be. The purpose of the site visit and the pre-tender meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

7.3 The Tenderer is requested to submit any questions in writing, to reach the Procuring Entity not later than the period specified in the **TDS** before the meeting.

7.4 Minutes of a pre-arranged site visit and those of the pre-tender meeting, if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Tenderers who have acquired the Tender Documents. Minutes shall not identify the source of the questions asked.

7.5 The Procuring Entity shall also promptly publish anonymized (*no names*) Minutes of the pre-arranged site visit and those of the pre-tender meeting at the web page identified **in the TDS**. Any modification to the Tender Documents that may become necessary as a result of the pre-arranged site visit and those of the pre-tender meeting shall be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT 8 and not through the minutes of the pre-Tender meeting. Non-attendance at the pre-arranged site visit and the pre-tender meeting will not be a cause for disqualification of a Tenderer.

**Amendment of Tender Documents**

8.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tender Documents by issuing addenda.

8.2 Any addendum issued shall be part of the Tender Documents and shall be communicated in writing to all who have obtained the Tender Documents from the Procuring Entity. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's website in accordance with ITT 7.5.

8.3 To give Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity should extend the deadline for the submission of Tenders, pursuant to ITT 22.2.

## PREPARATION OF TENDERS

### Cost of Tendering

The Tenderer shall meet all costs associated with the preparation and submission of its Tender, and the Procuring Entity shall not be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

### Language of Tender

The Tender, as well as all correspondence and documents relating to the tender exchanged by the tenderer and the Procuring Entity, shall be written in the English Language. Supporting documents and printed literature that are part of the Tender may be in another language provided they are accompanied by an accurate and notarized translation of the relevant passages into the English Language, in which case, for purposes of interpretation of the Tender, such translation shall govern.

### Documents Comprising the Tender

11.1 The Tender shall comprise the following:

a) **Form of Tender prepared in accordance with ITT 12;**
b) **Schedules including priced Bill of Quantities, completed in accordance with ITT 12 and ITT 14;**
c) **Tender Security or Tender-Securing Declaration, in accordance with ITT 19.1;**
d) **Alternative Tender, if permissible, in accordance with ITT 13;**
e) **Authorization: written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordance with ITT 20.3;**
f) **Qualifications: documentary evidence in accordance with ITT 17 establishing the Tenderer's qualifications to perform the Contract if its Tender is accepted;**
g) **Conformity: a technical proposal in accordance with ITT 16;**
h) **Any other document required in the TDS**.

11.2 In addition to the requirements under ITT 11.1, Tenders submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Tender shall be signed by all members and submitted with the Tender, together with a copy of the proposed JV Agreement. Change of membership and conditions of the JV prior to contract signature will render the tender liable for disqualification.

### Form of Tender and Schedules

12.1 The Form of Tender and Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in Section IV, Tendering Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITT 20.3. All blank spaces shall be filled in with the information requested. The Tenderer shall chronologically serialize all pages of the tender documents submitted.

12.2 The Tenderer shall furnish in the Form of Tender information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Tender.

### Alternative Tenders

13.1 Unless otherwise specified in the TDS, alternative Tenders shall not be considered.

13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the **TDS**, and the method of evaluating different alternative times for completion will be described in Section III, Evaluation and Qualification Criteria.

13.3 Except as provided under ITT13.4 below, Tenderers wishing to offer technical alternatives to the requirements of the Tender Documents must first price the Procuring Entity's design as described in the Tender Documents and shall further provide all information necessary for a complete evaluation of the

alternative by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Tenderer with the Winning Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

13.4 When specified in the **TDS**, Tenderers are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in the **TDS**, as will the method for their evaluating, and described in Section VII, Works' Requirements.

**Tender Prices and Discounts**

14.1 The prices and discounts (including any price reduction) quoted by the Tenderer in the Form of Tender and in the Bill of Quantities shall conform to the requirements specified below.

14.2 The Tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Tenderer shall be deemed covered by the rates for other items in the Bill of Quantities and will not be paid for separately by the Procuring Entity. An item not listed in the priced Bill of Quantities shall be assumed to be not included in the Tender, and provided that the Tender is determined substantially responsive notwithstanding this omission, the average price of the item quoted by substantially responsive Tenderers will be added to the Tender price and the equivalent total cost of the Tender so determined will be used for price comparison.

14.3 The price to be quoted in the Form of Tender, in accordance with ITT 12, shall be the total price of the Tender, including any discounts offered.
The Tenderer shall quote any discounts and the methodology for their application in the Form of Tender, in accordance with ITT 12

14.4 It will be specified in the **TDS** if the rates and prices quoted by the Tenderer are or are not subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, except in cases where the contract is subject to fluctuations and adjustments, not fixed price. In such a case, the Tenderer shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Procuring Entity may require the Tenderer to justify its proposed indices and weightings.

14.5 Where tenders are being invited for individual lots (contracts) or for any combination of lots (packages), tenderers wishing to offer discounts for the award of more than one Contract shall specify in their Tender the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITT 14.4, provided the Tenders for all lots (contracts) are opened at the same time.

14.6 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 30 days prior to the deadline for submission of Tenders, shall be included in the rates and prices and the total Tender Price submitted by the Tenderer.

**Currencies of Tender and Payment**

15.1 The currency (ies) of the Tender and the currency (ies) of payments shall be the same.

15.2 Tenderers shall quote entirely in Kenya Shillings. The unit rates and the prices shall be quoted by the Tenderer in the Bill of Quantities, entirely in Kenya shillings

**a)** A Tenderer expecting to incur expenditures in other currencies for inputs to the Works supplied from outside Kenya (referred to as "the foreign currency requirements") shall (if so allowed in the **TDS**) indicate in the Appendix to Tender the percentage(s) of the Tender Price (excluding Provisional Sums), needed by the Tenderer for the payment of such foreign currency requirements, limited to no more than two foreign currencies.

**b)** The rates of exchange to be used by the Tenderer in arriving at the local currency equivalent and the percentage(s) mentioned in (a) above shall be specified by the Tenderer in the Appendix to Tender and shall be based on the exchange rate provided by the Central Bank of Kenya on the date 30 days prior

to the actual date of tender opening. Such exchange rate shall apply for all foreign payments under the Contract.

15.3 Tenderers may be required by the Procuring Entity to justify, to the Procuring Entity's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices and shown in the Schedule of Adjustment Data in the Appendix to Tender are reasonable, in which case a detailed breakdown of the foreign currency requirements shall be provided by Tenderers.

**Documents Comprising the Technical Proposal**

The Tenderer shall furnish a technical proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV, Tender Forms, and sufficient detail to demonstrate the adequacy of the Tenderer's proposal to meet the work's requirements and the completion time.

**Documents Establishing the Eligibility and Qualifications of the Tenderer**

17.1 Tenderers shall complete the Form of Tender, included in Section IV, Tender Forms, to establish Tenderer's eligibility in accordance with ITT 4.

17.2 In accordance with Section III, Evaluation and Qualification Criteria, to establish its qualifications to perform the Contract the Tenderer shall provide the information requested in the corresponding information sheets included in Section IV, Tender Forms.

17.3 If a margin of preference applies as specified in accordance with ITT33. 1, national tenderers, individually or in joint ventures, applying for eligibility for national preference shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITT 33.1.

17.4 Tenderers shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contract or group of contractors qualifies for a margin of preference. Further the information will enable the Procuring Entity identify any actual or potential conflict of interest in relation to the procurement and/or contract management processes, or a possibility of collusion between tenderers, and there by help to prevent any corrupt influence in relation to the procurement process or contract management.

17.5 The purpose of the information described **in ITT 17.2** above overrides any claims to confidentiality which a tenderer may have. There can be no circumstances in which it would be justified for a tenderer to keep information relating to its ownership and control confidential where it is tendering to undertake public sector work and receive public sector funds. Thus, confidentiality will not be accepted by the Procuring Entity as a justification for a Tenderer's failure to disclose, or failure to provide required information on its ownership and control.

17.6 The Tenderer shall provide further documentary proof, information or authorizations that the Procuring Entity may request in relation to ownership and control which information on any changes to the information which was provided by the tenderer under ITT 6.4. The obligations to require this information shall continue for the duration of the procurement process and contract performance and after completion of the contract, if any change to the information previously provided may reveal a conflict of interest in relation to the award or management of the contract.

17.7 All information provided by the tenderer pursuant to these requirements must be complete, current and accurate as at the date of provision to the Procuring Entity. In submitting the information required pursuant to these requirements, the Tenderer shall warrant that the information submitted is complete, current and accurate as at the date of submission to the Procuring Entity.

17.8 If a tenderer fails to submit the information required by these requirements, its tenderer will be rejected. Similarly, if the Procuring Entity is unable, after taking reasonable steps, to verify to a reasonable degree the information submitted by a tenderer pursuant to these requirements, then the tender will be rejected

17.9 If information submitted by a tenderer pursuant to these requirements, or obtained by the Procuring Entity (whether through its own enquiries, through notification by the public or otherwise), shows any conflict of interest which could materially and improperly benefit the tenderer in relation to the procurement or contract management process, then:

i) If the procurement process is still on going, the tenderer will be disqualified from the procurement process,
ii) If the contract has been awarded to that tenderer, the contract award will be set aside,
iii) the tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other persons have committed any criminal offence.

17.10 If a tenderer submits information pursuant to these requirements that is incomplete, inaccurate or out-of-date, or attempts to obstruct the verification process, then the consequences ITT 17.8 will ensue unless the tenderer can show to the reasonable satisfaction of the Procuring Entity that any such act was not material, or was due to genuine error which was not attributable to the intentional act, negligence or recklessness of the tender.

**Period of Validity of Tenders**

18.1. Tenders shall remain valid for the Tender Validity period specified in the **TDS**. The Tender Validity period starts from the date fixed for the Tender submission deadline (as prescribed by the Procuring Entity in accordance with ITT 22). A Tender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.

18.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may request Tenderers to extend the period of validity of their Tenders. The request and the responses shall be made in writing. If a Tender Security is requested in accordance with ITT 19, it shall also be extended for thirty (30) days beyond the deadline of the extended validity period. A Tenderer may refuse the request without forfeiting its Tender security. A Tenderer granting their quest shall not be required or permitted to modify its Tender.

**Tender Security**

19.1 The Tenderer shall furnish as part of its Tender, either a Tender-Securing Declaration or a Tender Security as specified in the **TDS**, in original form and, in the case of a Tender Security, in the amount and currency **specified in the TDS**. A Tender-Securing Declaration shall use the form included in Section IV, Tender Forms.

19.2 If a Tender Security is specified pursuant to ITT19.1, the Tender Security shall be a demand guarantee in any of the following forms at the Tenderer's option:

1. cash;

2. a bank guarantee;

3. a guarantee by an insurance company registered and licensed by the Insurance Regulatory Authority listed by the Authority; or

19.3 A guarantee issued by a financial institution approved and licensed by the Central Bank of Kenya, from a reputable source, and an eligible country.

19.4 If an unconditional bank guarantee is issued by a bank located outside Kenya, the issuing bank shall have a correspondent bank located in Kenya to make it enforceable. The Tender Security shall be valid for thirty (30) days beyond the original validity period of the Tender, or beyond any period of extension if requested under ITT 18.2.

19.5 If a Tender Security or Tender-Securing Declaration does a substantially responsive Tender Security accompany specified pursuant to ITT 19.1, any Tender not or Tender-Securing Declaration shall be rejected by the Procuring Entity as non-responsive.

19.6 If a Tender Security is specified pursuant to ITT 19.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's signing the Contract and furnishing the Performance Security and any other documents required in the TDS. The Procuring Entity shall also promptly return the tender security to the tenderers where the procurement proceedings are terminated, all tenders were determined non-responsive or a bidder declines to extend tender validity

period.

(a) If a Tenderer withdraws its Tender during the period of Tender validity specified by the Tenderer on the Form of Tender, or any extension there to be provided by the Tenderer; or

(b) if the successful Tenderer fails to:

i. sign the Contract in accordance with ITT 47; or

ii. furnish a Performance Security and if required in the TDS, and any other documents required in the TDS.

19.7 The Tender Security of the successful Tenderer shall be returned as promptly as possible once the successful Tenderer has signed the Contract and furnished the required Performance Security, and any other documents required in the TDS.

19.8 The Tender Security may be forfeited or the Tender-Securing Declaration executed:

19.9 Where tender securing declaration is executed, the Procuring Entity shall recommend to the PPRA that PPRA debars the Tenderer from participating in public procurement as provided in the law.

19.10 The Tender Security or the Tender-Securing Declaration of a JV shall be in the name of the JV that submits the Tender. If the JV has not been legally constituted into a legally enforceable JV at the time of tendering, the Tender Security or the Tender-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITT 4.1 and ITT 11.2.

19.11 A tenderer shall not issue a tender security to guarantee itself.

**Format and Signing of Tender**

20.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 11 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 13, shall be clearly marked "ALTERNATIVE." In addition, the Tenderer shall submit copies of the Tender, in the number **specified in the TDS** and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

20.2 Tenderers shall mark as "CONFIDENTIAL" all information in their Tenders which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.

20.3 The original and all copies of the Tender shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Tenderer. This authorization shall consist of a written confirmation as specified in the **TDS** and shall be attached to the Tender. The name and position held bye ach person signing the authorization must be typed or printed below the signature. All pages of the Tender where entries or amendments have been made shall be signed or initialed by the person signing the Tender.

20.4 In case the Tenderer is a JV, the Tender shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

20.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Tender.

## D. SUBMISSION AND OPENING OF TENDERS

**Sealing and Marking of Tenders**

21.1 The Tenderer shall deliver the Tender in a single sealed envelope, or in a single sealed package, or in a single sealed container bearing the name and Reference number of the Tender, addressed to the Procuring Entity and a warning not to open before the time and date for Tender opening date. Within the single envelope, package or container, the Tenderer shall place the following separate, sealed envelopes:

**c)** in an envelope or package or container marked "ORIGINAL", all documents comprising the Tender, as describedinITT11; and

**d)** in an envelope or package or container marked "COPIES" all required copies of the Tender; and

**e)** if alternative Tenders are permitted in accordance with ITT 13, and if relevant:

i) in an envelope or package or container marked "ORIGINAL - ALTERNATIVE TENDER", the alternative Tender; and

ii) in the envelope or package or container marked "COPIES- ALTERNATIVE TENDER", all required copies of the alternative Tender.

The inner envelopes or packages or containers shall:

a) bear the name and address of the Procuring Entity.

b) Bear the name and address of the Tenderer; and

c) Bear the name and Reference number of the Tender.

21.2 If an envelope or package or container is not sealed and marked as required, the *Procuring Entity* will assume no responsibility for the misplacement or premature opening of the Tender. Tenders that were misplaced or opened prematurely will not be accepted.

**Deadline for Submission of Tenders**

22.1 Tenders must be received by the Procuring Entity at the address specified in the **TDS** and no later than the date and time also specified in the **TDS.** When so specified in the **TDS,** Tenderers shall have the option of submitting their Tenders electronically. Tenderers submitting Tenders electronically shall follow the electronic Tender submission procedures specified in the **TDS**.

22.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the Tender Documents in accordance with ITT 8, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline shall thereafter be subject to the deadline as extended.

**Late Tenders**

The Procuring Entity shall not consider any Tender that arrives after the deadline for submission of tenders, in accordance with ITT 22. Any Tender received by the Procuring Entity after the deadline for submission of Tenders shall be declared late, rejected, and returned unopened to the Tenderer.

**Withdrawal, Substitution, and Modification of Tenders**

24.1 A Tenderer may withdraw, substitute, or modify its Tender after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITT 20.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Tender must accompany the respective written notice. All notices must be:

**a)** prepared and submitted in accordance with ITT 20 and ITT 21 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION;" and

**b)** received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 22.

24.2 Tenders requested to be withdrawn in accordance with ITT 24.1 shall be returned unopened to theTenderers.

24.3 No Tender may be withdrawn, substituted, or modified in the interval between the deadline for submission of Tenders and the expiration of the period of Tender validity specified by the Tenderer on the Form of Tender or any extension thereof.

**Tender Opening**

25.1 Except in the cases specified in ITT 23 and ITT 24.2, the Procuring Entity shall publicly open and read out all Tenders received by the deadline, at the date, time and place specified **in the TDS**, in the presence of Tenderers' designated representatives and anyone who chooses to attend. Any specific electronic Tender opening procedures required if electronic Tendering is permitted in accordance with

ITT 22.1, shall be as specified in the **TDS.**

25.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelopes with the corresponding Tender shall not be opened but returned to the Tenderer. No Tender withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out attender opening.

25.3 Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Tender being substituted, and the substituted Tender shall not be opened, but returned to the Tenderer. No Tender substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Tender opening.

25.4 Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Tender.No Tender modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Tender opening.

25.5 Next, all remaining envelopes shall be opened on time, reading out: the name of the Tenderer and whether there is a modification; the total Tender Price, per lot (contract) if applicable, including any discounts and alternative Tenders; the presence or absence of a Tender Security or Tender-Securing Declaration, if required; and any other details as the Procuring Entity may consider appropriate.

25.6 Only Tenders, alternative Tenders and discounts that are opened and read out at Tender opening shall be considered further for evaluation. The Form of Tender and pages of the Bill of Quantities (to be decided on by the tender opening committee) are to be initialed by the members of the tender opening committee attending the opening.

25.7 At the Tender Opening, the Procuring Entity shall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT 23.1).

25.8 The Procuring Entity shall prepare minutes of the Tender Opening that shall include, as a minimum:

i. The name of the Tenderer and whether there is a withdrawal, substitution, or modification;
ii. The Tender Price, per lot (contract) if applicable, including any discounts;
iii. any alternative Tenders;
iv. the presence or absence of a Tender Security, if one was required.
v. number of pages of each tender document submitted.

25.9 The Tenderers' representatives who are present shall be requested to sign the minutes. The omission of a Tenderer's signature on the minutes shall not invalidate the contents and effect of the minutes. A copy of tender opening register shall be issued to a tenderer upon request.

## E. EVALUATION AND COMPARISON OF TENDERS

### Confidentiality

26.1 Information relating to the evaluation of Tenders and recommendation of contract award shall not be disclosed to Tenderers or any other persons not officially concerned with the Tender process until information on Intention to Award the Contract is transmitted to all Tenderers in accordance with ITT 43.

26.2 Any effort by a Tenderer to influence the Procuring Entity in the evaluation of the Tenders or Contract award decisions may result in the rejection of its tender.

26.3 Notwithstanding ITT 26.2, from the time of tender opening to the time of contract award, if a tenderer wishes to contact the Procuring Entity on any matter related to the tendering process, it shall do so in writing.

### Clarification of Tenders

27.1 To assist in the examination, evaluation, and comparison of the tenders, and qualification of the tenderers, the Procuring Entity may, at its discretion, ask any tenderer for a clarification of its tender,

given a reasonable time for a response. Any clarification submitted by a tenderer that is not in response to a request by the Procuring Entity shall not be considered. The Procuring Entity's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Procuring Entity in the evaluation of the tenders, in accordance with ITT 31.

27.2 If a tenderer does not provide clarifications of its tender by the date and time set in the Procuring Entity's request for clarification, its Tender may be rejected.

**Deviations, Reservations, and Omissions**

28.1 During the evaluation of tenders, the following definitions apply:

**c)** "Deviation" is a departure from the requirements specified in the tender document;

**d)** "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the tender document; and

**e)** "Omission" is the failure to submit part or all of the information or documentation required in the Tender document.

**Determination of Responsiveness**

29.1 The Procuring Entity's determination of a Tender's responsiveness is to be based on the contents of the tender itself, as defined in ITT 11.

29.2 A substantially responsive Tender is one that meets the requirements of the Tender document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that, if accepted, would:

i. Affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or

ii. limit in any substantial way, inconsistent with the tender document, the Procuring Entity's rights or the tenderer's obligations under the proposed contract; or

iii. if rectified, would unfairly affect the competitive position of other tenderers presenting substantially responsive tenders.

29.3 The Procuring Entity shall examine the technical aspects of the tender submitted in accordance with ITT 16, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.

29.4 If a tender is not substantially responsive to the requirements of the tender document, it shall be rejected by the Procuring Entity and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

**Non-material Non-conformities**

30.1 Provided that a tender is substantially responsive, the Procuring Entity may waive any non-conformities in the tender.

30.2 Provided that a Tender is substantially responsive, the Procuring Entity may request that the tenderer submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial non- conformities in the tender related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the tender. Failure of the tenderer to comply with the request may result in the rejection of its tender.

30.3 Provided that a tender is substantially responsive, the Procuring Entity shall rectify quantifiable nonmaterial non-conformities related to the Tender Price. To this effect, the Tender Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified **in the TDS.**

**Arithmetical Errors**

31.1 The tender sum as submitted and read out during the tender opening shall be absolute and final and shall not be the subject of correction, adjustment or amendment in anyway by any person or entity.

31.2 Provided that the Tender is substantially responsive, the Procuring Entity shall handle errors on the following basis:

i. Any error detected if considered a major deviation that affects the substance of the tender, shall lead to disqualification of the tender as non-responsive.

ii. Any errors in the submitted tender arising from a miscalculation of unit price, quantity, subtotal and total bid price shall be considered as a major deviation that affects the substance of the tender and shall lead to disqualification of the tender as non-responsive. and

iii. If there is a discrepancy between words and figures, the amount in words shall prevail

31.3 Tenderers shall be notified of any error detected in their bid during the notification of award.

**Conversion to Single Currency**

For evaluation and comparison purposes, the currency (ies) of the Tender shall be converted into a single currency **as specified in the TDS**.

**Margin of Preference and Reservations**

32.1 A margin of preference may be allowed only when the contract is open to international competitive tendering where foreign contractors are expected to participate in the tendering process and where the contract exceeds the value/threshold specified in the Regulations.

32.2 A margin of preference shall not be allowed unless it is specified so in the **TDS**.

32.3 Contracts procured on basis of international competitive tendering shall not be subject to reservations exclusive to specific groups as provided in ITT 33.4.

32.4 Where it is intended to reserve a contract to a specific group of businesses (these groups are Small and Medium Enterprises, Women Enterprises, Youth Enterprises and Enterprises of persons living with disability, as the case may be), and who are appropriately registered as such by the authority to be specified in the **TDS**, a procuring entity shall ensure that the invitation to tender specifically indicates that only businesses or firms belonging to the specified group are eligible to tender. No tender shall be reserved to more than one group. If not so stated in the Invitation to Tender and in the Tender documents, the invitation to tender will be open to all interested tenderers.

**Nominated Subcontractors**

33.1 **Unless** otherwise stated **in the TDS,** the Procuring Entity does not intend to execute any specific elements of the Works by subcontractors selected/nominated by the Procuring Entity. Incase the Procuring Entity nominates a subcontractor, the subcontract agreement shall be signed by the Subcontractor and the Procuring Entity. The main contract shall specify the working arrangements between the main contractor and the nominated subcontractor.

33.2 Tenderers may propose subcontracting up to the percentage of total value of contracts or the volume of works as specified **in the TDS**. Subcontractors proposed by the Tenderer shall be fully qualified for their parts of the Works.

33.3 Domestic subcontractor's qualifications shall not be used by the Tenderer to qualify for the Works unless their specialized parts of the Works were previously designated so by the Procuring Entity **in the TDS** as can be met by subcontractors referred to hereafter as 'Specialized Subcontractors', in which case, the qualifications of the Specialized Subcontractors proposed by the Tenderer may be added to the qualifications of the Tenderer.

**Evaluation of Tenders**

34.1 The Procuring Entity shall use the criteria and methodologies listed in this ITT and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies the Procuring Entity shall determine the Lowest Evaluated Tender in accordance with ITT 40.

34.2 To evaluate a Tender, the Procuring Entity shall consider the following:

i. Price adjustment in accordance with ITT 31.1(iii); excluding provisional sums and contingencies, if any, but including Day work items, where priced competitively;

ii. Price adjustment due to discounts offered in accordance with ITT 14.4;

iii. converting the amount resulting from applying (a) and (b) above, if relevant, to a

single currency in accordance with ITT 32;

iv. price adjustment due to quantifiable non material non-conformities in accordance with ITT 30.3; and

v. any additional evaluation factors specified **in the TDS** and Section III, Evaluation and Qualification Criteria.

34.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be considered intender evaluation.

34.4 Where the tender involves multiple lots or contracts, the tenderer will be allowed to tender for one or more lots (contracts). Each lot or contract will be evaluated in accordance with ITT 35.2. The methodology to determine the lowest evaluated tenderer or tenderers based one lot (contract) or based on a combination of lots (contracts), will be specified in Section III, Evaluation and Qualification Criteria. In the case of multiple lots or contracts, tenderer will be will be required to prepare the Eligibility and Qualification Criteria Form for each Lot.

**Comparison of Tenders**

The Procuring Entity shall compare the evaluated costs of all substantially responsive Tenders established in accordance with ITT 35.2 to determine the Tender that has the lowest evaluated cost.

**Abnormally Low Tenders and Abnormally High Tenders**

36.1 An Abnormally Low Tender is one where the Tender price, in combination with other elements of theTender, appears so low that it raises material concerns as to the capability of the Tenderer in regards to the Tenderer's ability to perform the Contract for the offered Tender Price or that genuine competition between Tenderers is compromised.

36.2 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the Tender document.

36.3 After evaluation of the price analyses, in the event that the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

**Abnormally High Tenders**

37.1 An abnormally high tender price is one where the tender price, in combination with other constituent elements of the Tender, appears unreasonably too high to the extent that the Procuring Entity is concerned that it (the Procuring Entity) may not be getting value for money or it may be paying too high a price for the contract compared with market prices or that genuine competition between Tenderers is compromised.

37.2 Incase of an abnormally high price, the Procuring Entity shall make a survey of the market prices, check if the estimated cost of the contract is correct and review the Tender Documents to check if the specifications, scope of work and conditions of contract are contributory to the abnormally high tenders. The Procuring Entity may also seek written clarification from the tenderer on the reason for the high tender price. The Procuring Entity shall proceed as follows:

i) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring Entity may accept or not accept the tender depending on the Procuring Entity's budget considerations.

ii) If specifications, scope of work and/or conditions of contract are contributory to the abnormally high tender prices, the Procuring Entity shall reject all tenders and may retender for the contract based on revised estimates, specifications, scope of work and conditions of contract, as the case may be.

37.3 If the Procuring Entity determines that the Tender Price is abnormally too high because genuine competition between tenderers is compromised (*often due to collusion, corruption or other*

*manipulations*), the Procuring Entity shall reject all Tenders and shall institute or cause competent Government Agencies to institute an investigation on the cause of the compromise, before retendering.

**Unbalanced and/or Front-Loaded Tenders**

38.1 If in the Procuring Entity's opinion, the Tender that is evaluated as the lowest evaluated price is seriously unbalanced and/or front loaded, the Procuring Entity may require the Tenderer to provide written clarifications. Clarifications may include detailed price analyses to demonstrate the consistency of the tender prices with the scope of works, proposed methodology, schedule and any other requirements of the Tender document.

38.2 After the evaluation of the information and detailed price analyses presented by the Tenderer, the Procuring Entity may as appropriate:

i) accept the Tender; or

ii) require that the total amount of the Performance Security be increased at the expense of the Tenderer to a level not exceeding a 10% of the Contract Price; or

iii) agree on a payment mode that eliminates the inherent risk of the Procuring Entity paying too much for undelivered works; or

iv) reject the Tender,

**Qualifications of the Tenderer**

39.1 The Procuring Entity shall determine to its satisfaction whether the eligible Tenderer that is selected as having submitted the lowest evaluated cost and substantially responsive Tender, meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

39.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 17. The determination shall not take into consideration the qualifications of other firms such as the Tenderer's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Subcontractors if permitted in the Tender document), or any other firm(s) different from the Tenderer.

39.3 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in disqualification of the Tender, in which event the Procuring Entity shall proceed to the Tenderer who offers a substantially responsive Tender with the next lowest evaluated price to make a similar determination of that Tenderer's qualifications to perform satisfactorily.

**Lowest Evaluated Tender**

Having compared the evaluated prices of Tenders, the Procuring Entity shall determine the Lowest Evaluated Tender. The Lowest Evaluated Tender is the Tender of the Tenderer that meets the Qualification Criteria and whose Tender has been determined to be:

a) Most responsive to the Tender document; and

b) The lowest evaluated price.

**Procuring Entity's Right to Accept Any Tender, and to Reject Any or All Tenders.**

The Procuring Entity reserves the right to accept or reject any Tender and to annul the Tender process and reject all Tenders at any time prior to Contract Award, without there by incurring any liability to Tenderers. Incase of annulment, all Tenders submitted and specifically, Tender securities, shall be promptly returned to the Tenderers.

## F. AWARD OF CONTRACT

**Award Criteria**

The Procuring Entity shall award the Contract to the successful tenderer whose tender has been determined to be the Lowest Evaluated Tender.

**Notice of Intention to enter into a Contract**

Upon award of the contract and Prior to the expiry of the Tender Validity Period the Procuring Entity shall issue a Notification of Intention to Enter into a Contract/Notification of award to all tenderers which shall contain, at a minimum, the following information:

a) the name and address of the Tenderer submitting the successful tender;
b) the Contract price of the successful tender;
c) a statement of the reason(s) the tender of the unsuccessful tenderer to whom the letter is addressed was unsuccessful, unless the price information in (c) above already reveals the reason;
d) the expiry date of the Standstill Period; and
e) instructions on how to request a debriefing and/or submit a complaint during the stand still period;

**Stand still Period**

44.1 The Contract shall not be signed earlier than the expiry of a Standstill Period of 14 days to allow any dissatisfied tender to launch a complaint. Where only one Tender is submitted, the Standstill Period shall not apply.

44.2 Where a Standstill Period applies, it shall commence when the Procuring Entity has transmitted to each Tenderer the Notification of Intention to Enter into a Contract with the successful Tenderer.

**Debriefing by the Procuring Entity**

45.1 On receipt of the Procuring Entity's Notification of Intention to Enter into a Contract referred to in ITT 43, an unsuccessful tenderer may make a concern regarding their tender. The Procuring Entity shall provide the debriefing within five days of receipt of the request.

45.2 Debriefings of unsuccessful Tenderers may be done in writing or verbally. The Tenderer shall bear its own costs of attending such a debriefing meeting.

**Letter of Award**

Prior to the expiry of the Tender Validity Period and upon expiry of the Standstill Period specified in ITT 42.1, upon addressing a complaint that has been filed within the Standstill Period, the Procuring Entity shall transmit the Letter of Award to the successful Tenderer. The letter of award shall request the successful tenderer to furnish the Performance Security within 21 days of the date of the letter.

**Signing of Contract**

47.1 Upon the expiry of the fourteen days of the Notification of Intention to enter into contract and upon the parties meeting their respective statutory requirements, the Procuring Entity shall send the successful Tenderer the Contract Agreement.

47.2 Within fourteen (14) days of receipt of the Contract Agreement, the successful Tenderer shall sign, date, and return it to the Procuring Entity.

47.3 The written contract shall be entered into within the period specified in the notification of award and before expiry of the tender validity period.

**Performance Security**

48.1 Within twenty-one (21) days of the receipt of the Letter of Award from the Procuring Entity, the successful Tenderer shall furnish the Performance Security and, any other documents required in the **TDS**, in accordance with the General Conditions of Contract, subject to ITT 38.2 (b), using the Performance Security and other Forms included in Section X, Contract Forms, or another form acceptable to the Procuring Entity. A foreign institution providing a bank guarantee shall have a correspondent financial institution located in Kenya, unless the Procuring Entity has agreed in writing that a correspondent bank is not required.

48.2 Failure of the successful Tenderer to submit the above-mentioned Performance Security and other documents required in the **TDS** or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security. In that event the Procuring Entity may award the Contract to the Tenderer offering the next Best Evaluated Tender.

48.3 Performance security shall not be required for contracts estimated to cost less than the amount specified in the Regulations.

**Publication of Procurement Contract**

Within fourteen days after signing the contract, the Procuring Entity shall publish the awarded contract at its notice boards and websites; and on the Website of the Authority. At the minimum, the notice shall contain the following information:

a) name and address of the Procuring Entity;

b) name and reference number of the contract being awarded, a summary of its scope and the selection method used;

c) the name of the successful Tenderer, the final total contract price, the contract duration.

d) dates of signature, commencement and completion of contract;

e) names of all Tenderers that submitted Tenders, and their Tender prices as read out at Tender opening.

**Procurement Related Complaint**

The procedures for making Procurement-related Complaints shall be specified in the **TDS.**

## SECTION II - TENDER DATA SHEET (TDS)

The following specific data shall complement, supplement, or amend the provisions in the Instructions to Tenderers (ITT). Whenever there is a conflict, the provisions herein shall prevail over those in ITT.

| ITT Reference | A. General |
|---|---|
| **ITT 1.1** | The name of the contract is: **PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP**<br><br>The reference number of the contract is: **KAA/OT/UKUNDA/0169/2024-2025**<br>The number and identification of lots (contracts) comprising this Tender are **N/A** |
| **ITT 2.3** | The Information made available on competing firms is as follows<br><br>_N/A_____ |
| **ITT 2.4** | The firms that provided consulting services for the contract being tendered for are:<br><br>_____N/A_____ |
| **ITT 3.1** | This invitation to tender is through **OPEN TENDER** in accordance **PUBLIC PROCUREMENT AND ASSET DISPOSAL ACT 2015**.<br><br>Maximum number of members in the Joint Venture (JV) shall be: **TWO (2)** |
| | **B. Contents of Tendering Document.** |
| **ITT 7.1** | (i) **The Tenderer will submit any request for clarifications in writing at the address**<br><br>Attention: ***General Manager, Procurement & Logistics***<br><br>Postal Address: ***P.O. Box 19001-00501 Nairobi, Kenya***<br><br>Physical Address: ***Kenya Airports Authority Headquarters Complex Building, Jomo Kenyatta International Airport, Airport North Road, 2nd Floor, Procurement & Logistics Department***<br><br>Electronic mail address***: tenders@kaa.go.ke***<br><br>Request for clarification should be received by the Procuring Entity no later than: two (2) days. The Procuring Entity will publish its response at the website _at https://kaa.go.ke/corporate/procurement/_____ |
| **ITT 7.2** | (A) A pre-arranged pretender site visit *"shall..."* take place at the following data, time and place:<br><br>There shall be a Pre-Tender Site Visit **on 24th April, 2025 at 10:00 am at Ukunda Airstrip.** However, tenderers are requested to make arrangements to attend and acquaint themselves with the site conditions before submission of their tenders.<br><br>A representative of the Employer will be available to meet the tenderers on the specified time for the site visit and sign the completed Certificate of Tenderer's Visit to the Site. Tenderers must provide their own transport.<br><br>The bidder's representative must bring the following for the site visit.<br>1. Original introductory letter on the company letterhead detailing the names and ID number of the bidder's representative.<br>2. Certificate of Tenderer's visit to site,<br>3. Original and copy of ID, |

| | |
|---|---|
| | 4. Copy of Degree Certificate<br>5. Appropriate Personal Protective Equipment (PPE), Helmet, High visibility reflective vests and Safety boots.<br><br>Site visit attendance is **MANDATORY** by the proposed **Project Manager/Site Agent** who meets the minimum qualifications in the personnel categories. The attendance sheet shall be signed by the by the proposed personnel and submitted as proof of attendance. |
| **ITT 7.3** | The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than **two (2) days** before the tender closing date. |
| | **C. Preparation of Tenders** |
| **ITT 11.1 (h)** | ***The Tenderer shall submit the following additional documents in its Tender: [list any additional document not already listed in ITT 11.1 that must be submitted with the Tender. The list of additional documents is as per the evaluation criteria IN SECTION III*** |
| **ITT 13.1** | Alternative Tenders ***"shall not be"*** considered.<br>***[If alternatives are to be considered, the methodology shall be defined in Section III, Evaluation and Qualification Criteria. See Section III for further details]*** |
| **ITT 13.2** | Alternative times for completion "***shall not be"*** permitted. *[If alternative times are permitted, the evaluation method will be as specified in Section III Evaluation and Qualification Criteria]* |
| **ITT 13.4** | Alternative technical solutions **shall NOT be** permitted for the following parts of the Works: _____ [insert parts of the Works]:<br>***[If alternative technical solutions are permitted, the evaluation method will be as specified in Section III, Evaluation and Qualification Criteria]*** |
| **ITT 14.5** | The prices quoted by the Tenderer shall be ***fixed.*** |
| **ITT 15.2** | Foreign currency requirements are **not allowed** |
| **ITT 18.1** | The Tender Validity period shall be **one hundred and Eighty-Six (186) days** from the date of tender opening**.** |
| **ITT 18.3** | (a) The number of days beyond the expiry of the initial tender validity period will be thirty (30) days<br>(b) The tender price shall be adjusted by the following percentages of the tender price:<br><br>(i) *By _____N/A_____ % of the local currency portion of the contract price adjusted to reflect local inflation during the period of extension* and<br><br>*(ii) By _____N/A_____ % the foreign currency portion of the contract price adjusted to reflect the international inflation during the period of extension.*<br><br>***Not applicable for this tender.*** |
| **ITT 19.1** | Tender Security amounting to **KES 5,000,000.00** in the prescribed format valid for **216 days** from the tender opening date.<br><br>The tender security shall be in any of the following forms:<br><br>a) cash or banker's cheque, or<br>b) a bank guarantee, or<br>c) guarantee issued by a reputable insurance company approved by Public Procurement Regulatory Authority (PPRA) or |

| | |
|---|---|
| | d) Letter of credit.<br>***The Tender Security shall be valid for 216 days from the date of tender opening.***<br>***Bidder should note the following:***<br><br>***(i) Those who have obtained a digital tender security must provide it online with their tender document in the KAA portal. The digital tender security must have a mechanism to verify such as use of quick response (QR) code or an online portal. They do not need to provide a hard copy of the tender security physically.***<br><br>***Those who do not provide a digital tender security as per (i) above will be required to submit an original Tender Security physically to the office of the General Manager, Procurement and Logistics department, KAA Headquarters, 2nd Floor on or before the closing/opening date and time.*** |
| **ITT 20.1** | In addition to the original of the Tender, the number of copies is: **N/A_** |
| **ITT 20.3** | The written confirmation of authorization to sign on behalf of the Tenderer shall consist of:<br>___ **Power of Attorney certified by a Commissioner of Oaths.** |
| | **D. Submission and Opening of Tenders** |
| **ITT 21.3** | A tender package or container that cannot fit in the tender box shall be received as follows:--N/A- |
| **ITT 22.1** | For **Tender submission purposes** only the following the Procuring Entity's address is approved:<br><br>Name of Procuring Entity: **Kenya Airports Authority**<br><br>Postal Address and name of Officer to be intentioned:<br>**General Manager (Procurement & Logistics)**<br>**P.O. BOX 19001-00501 Nairobi**<br>**Physical Address for hand courier delivery of the tender security only to our office:**<br>**Kenya Airports Authority Headquarters Complex Building,**<br>**Jomo Kenyatta International Airport, Airport North Road,**<br>**2nd Floor, Procurement & Logistics Department**<br><br>Date and time for submission of Tenders **6th May, 2025 at 11:00am**.<br>Please note that all our tenders shall be **submitted** electronically except the original tender security. |
| **ITT 25.1** | If Tenderers are allowed to submit Tenders electronically, they shall follow the electronic tender submission procedures **specified below**:<br><br>1. Upon accessing the tender documents, you will be required to respond to the tender **online** using the following link https://suppliers.kaa.go.ke/irj/portal.<br><br>2. Interested bidders who are not in KAA system and therefore do not have login credentials should contact KAA procurement through email: tenders@kaa.go.ke for login credentials early enough and **not later than three (3) days** before tender closing date.<br><br>3. All relevant submission documents must be attached on the login screen (Technical Proposal on C folder under technical Rfx Response system will lead you to the second screen (C folder) where the system creates a folder specific to you for uploading your response documents, do not click and attach your documents on the collaboration folder. click on "Tech Bid" the system will allow you to create a document, click "create" button and attach the documents. and Financial Proposal on Price Submission Screen). |

| | |
|---|---|
| | 4. A step by step manual/guide is available for downloading using the link https://www.kaa.go.ke/corporate/procurement/manuals/<br><br>5. Completed Tender documents and its attachments shall be submitted **online before the closing date 6th May, 2025 at 11:00am** |
| | **E. Evaluation and Comparison of Tenders** |
| **ITT 31.3** | The currency that shall be used for Tender Evaluation and comparison purposes to convert at the selling exchange rate all Tender prices expressed in various currencies into a single currency is Kenya Shillings<br><br>The source of exchange rate shall be: **The Central Bank of Kenya**<br><br>The date for the exchange rate shall be: **the deadline date for Submission of the Tenders**<br><br>*For comparison of Tenders, the Tender price, corrected pursuant to ITT 31, shall first be broken down into the respective amounts payable in various currencies by using the selling exchange rates specified by the Tenderer in accordance with ITT 15.1*<br><br>*In The second step, the Procuring Entity will convert the amounts in various currencies in which the Tender Price is payable (excluding Provisional Sums but including Day work where priced competitively) to the single currency identified above at the selling rates established for similar transactions by the authority specified and, on the date, stipulated above.* |
| **ITT 33.2** | A Margin of preference ***"shall not"*** apply.<br>*[If a margin of preference applies, the application methodology shall be defined in Section III – Evaluation and Qualification Criteria]* |
| **ITT 33.4** | The invitation to tender is extended to the following groups that qualify for Reservations<br>_____**N/A**_____<br>*(These groups are small and medium enterprises, women enterprises, youth enterprises and enterprises of persons living with disability, as the case may be; describe precisely which group qualifies).* |
| **ITT 33.0** | At this time, the Procuring Entity ***"does not intend"*** to execute certain specific parts of the Works by subcontractors selected in advance. |
| **ITT 33.0** | Contractor's may propose subcontracting: Maximum percentage of subcontracting permitted is 10 % *of the total contract amount.* Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity (ies) or parts of the works to be subcontracted along with complete details of the subcontractors and their qualification and experience. |
| **ITT 34.3** | This clause is not applicable. |
| **ITT 48.2** | Additional requirements apply.<br>These are as detailed in the evaluation criteria in Section III, Evaluation and Qualification Criteria |
| **ITT 50** | The procedures for making a Procurement-related Complaints are available from the **PPRA website** info@ppra.go.ke or complaints@ppra.go.ke.<br>If a Tenderer wishes to make a Procurement –related Complaint, the Tenderer should submit its complaint following these procedures, in writing (by the quickest means available, that is either by hand delivery or email to:<br><br>General Manager, Procurement & Logistics<br>Kenya Airports Authority<br>Email address: tenders@kaa.go.ke<br>In summary, a Procurement-related Complaint may challenge any of the following:<br><br>I. The terms of the Tender Documents; and<br>II. The Procuring Entity's decision to award the contract |

# SECTION III - EVALUATION AND QUALIFICATION CRITERIA

## 10 GENERAL PROVISIONS

**11** This section contains the criteria that the Employer shall use to evaluate tender and qualify tenderers. No other factors, methods or criteria shall be used other than specified in this tender document. The Tenderer shall provide all the information requested in the forms included in Section IV, Tendering Forms. The Procuring Entity shall use **the Standard Tender Evaluation Document for Goods and Works** for evaluating Tenders.

**12** Wherever a Tenderer is required to state a monetary amount, Tenderers should indicate the Kenya Shilling equivalent using the rate of exchange determined as follows:

a) For construction turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year is to be converted) was originally established.

b) Value of single contract - Exchange rate prevailing on the date of the contract signature.

(a) Exchange rates shall be taken from the publicly available source identified in the ITT 32.1. Any error in determining the exchange rates in the Tender may be corrected by the Procuring Entity.

**13** The procedures for making a Procurement-related Complaints are available from the PPRA website info@ppra.go.ke or complaints@ppra.go.ke.

If a Tenderer wishes to make a Procurement –related Complaint, the Tenderer should submit its complaint following these procedures, in writing (by the quickest means available, that is either by hand delivery or email to:

General Manager, Procurement & Logistics

Kenya Airports Authority

Email address: tenders@kaa.go.ke

In summary, a Procurement-related Complaint may challenge any of the following:

*i. The terms of the Tender Documents; and*

*ii. The Procuring Entity's decision to award the contract.*

The Procuring Entity shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender. The tender that(i) meets the qualification criteria, (ii) has been determined to be substantially responsive to the Tender Documents, and (iii) is determined to have the Lowest Evaluated Tender price shall be selected for award of contract.

## 14 PRELIMINARY EXAMINATION FOR DETERMINATION RESPONSIVENESS

**Preliminary examination for Determination of Responsiveness**

The Procuring Entity will start by examining all tenders to ensure they meet in all respects the eligibility criteria and other mandatory requirements in the ITT, and that the tender is complete in all aspects in meeting the requirements provided for in the preliminary evaluation criteria outlined below. The Standard Tender Evaluation Report Document for Goods and Works for evaluating Tenders provides very clear guide on how to deal with review of these requirements. Tenders that do not pass the Preliminary Examination will be considered non- responsive and will not be considered further

1. **Tender Evaluation (ITT 35)**

**FINANCIAL EVALUATION**

Only the bids which will be responsive to the technical requirement shall undergo financial evaluation which shall include evaluation of:

i. Duly completed and signed Form of Tender and the bill of quantity in the format contained in this bid document

The financial evaluation will be based on the **lowest evaluated price**.

Note: Bidders are hereby notified that due diligence shall be carried out on information provided by the bidder. Any false information provided will lead to automatic disqualification irrespective at any stage of the procurement process or contract execution.

**Price evaluation**: In addition to the criteria listed in ITT 35.2 (a) – (d) the following criteria shall apply:

i) **Alternative Completion Times N/A**
**ii) Multiple Contracts – N/A**
iii) **Alternative Tenders (ITT 13.1) – N/A**
**iv) MARGIN OF PREFERENCE – N/A**

**ii. Post qualification and Contract award (ITT 39), more specifically, - to use the technical evaluation criteria provided above in no. 2 and 3 above.**

a) In case the tender was subject to post-qualification, the contract shall be awarded to the lowest evaluated tenderer, subject to confirmation of pre-qualification data, if so required.

b) In case the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.

i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow of Kenya Shillings ten million (Kshs. 10,000,000/-) liquid assets.

**ii)** Contractor's Representative and Key Personnel, which are specified as **Project Manager (Principal site representative of the contractor).**

iii) Other conditions as set out in the Preliminary and technical criteria.

a) **History of non-performing contracts**:
Tenderer and each member of JV incase the Tenderer is a JV, shall demonstrate that Non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last
three (3) *years*. The required information shall be furnished in the appropriate form.

**b) Pending Litigation**
Financial position and prospective long-term profitability of the Single Tenderer, and in the case the Tenderer is a JV, of each member of the JV, shall remain sound according to criteria established with respect to Financial Capability under Paragraph (i) above if all pending litigation will be resolved against the Tenderer. Tenderer shall provide information on pending litigations in the appropriate form.

**c) Litigation History**
There shall be no consistent history of court/arbitral award decisions against the Tenderer, in the last
Three (3) years. All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the years specified. A consistent history of awards against the Tenderer or any member of a JV may result in rejection of the tender.

| No | Requirement | Compliance |
|---|---|---|
| 1. | Duly filled, signed and stamped Form of Tender | **Must meet** |
| 2. | Attach copy of Registration of Business/Certificate of Incorporation | **Must meet** |
| 3. | A Copy of valid KRA tax compliance certificate. | **Must meet** |
| 4. | Copy of valid Business Permit | **Must meet** |
| 5. | Provide copy of CR12 or equivalent from country of origin (in case of joint venture with a foreign company), providing a list of directors and shareholding status. Where one or more of the shareholders is a company (Beneficial Ownership), the CR12 or equivalent from country of origin of such a company shall be provided. However, where the CR12 of the beneficial shareholders is not available, as at the time of the tender submission, the successful bidder shall be required to submit it before execution of the contract. This requirement is not applicable to sole proprietorships and partnerships registered under Business Names. | **Must meet** |
| 6. | A written power of Attorney authorizing the signatory of the tender to commit the Tenderer certified by a commissioner for oaths. This requirement is not applicable to sole proprietorships | **Must meet** |
| 7. | Duly filled, signed and stamped Certificate of Independent Tender Determination | **Must Meet** |
| 8. | Duly filled, signed and stamped Self Declaration that the Person/Tenderer will not engage in any corrupt or fraudulent practice | **Must meet** |
| 9. | Duly filled Declaration and commitment to the Code of Ethics | **Must meet** |
| 10. | Self-Declaration that the Person/Tenderer is not Debarred in the Matter of the Public Procurement and Asset Disposal Act 2015 | **Must meet** |
| 11. | Duly filled Confidential Business Questionnaire Form | **Must meet** |
| 12. | The Tender Security shall be required of **Kshs. 5,000,000.00** valid for **216 days** from the date of tender opening/closing.<br>The tender security shall be in any of the following forms:<br>a) cash or banker's cheque, or<br>b) a bank guarantee, or<br>c) guarantee issued by a reputable insurance company approved by Public Procurement Regulatory Authority (PPRA) or<br>d) Letter of credit<br><br>Bidders are required to note the following:<br><br>(i) Those who have obtained a digital tender security must provide it online with their tender document in the KAA portal. The digital tender security must have a mechanism to verify such as use of quick response (QR) code or an online portal. They do not need to provide a hard copy of the tender security physically.<br><br>(ii) Those who do not provide a digital tender security as per (i) above will be **required to submit an original Tender Security physically to the office of the General Manager, Procurement and Logistics department, KAA Headquarters, 2nd Floor on or before the closing/opening date and time.** | **Must Meet** |
| 13. | Bidders to serialize their bidding documents from the first to the last page including all the attachments. All blank pages to be marked "BLANK" | **Must Meet** |
| 14. | Proof of registration with the National Construction Authority in **NCA 1 as a Building Works Contractor** or Similar from the Country of Origin. A Copy of Current | **Must Meet** |

| | | |
|---|---|---|
| | NCA 1 Practicing License and Registration Certificate | |
| 15. | Duly signed and stamped site visit/attendance certificate | **Must Meet** |
| 16. | Duly filled, signed and stamped Confidential business questionnaire | **Must Meet** |

NB: **Tenderers who will not meet ANY of the above preliminary mandatory will not be evaluated further**

## Technical Evaluation Criteria

| **B. TECHNICAL EVALUATION** | | | | |
|---|---|---|---|---|
| 1 | History of Non-Performing Contracts | Non-performance of a contract did not occur as a result of contractor default for the last (5) five years from the date of this tender<br><br>*(failure to complete the projects for the last three (3) Financial Years, notice of termination or termination of contracts in the last three (3) Financial Years will be disqualified)* | Form CON-2 | **Must Meet** |
| 2 | Financial Capabilities | Copies of the following documents as proof of access to liquid assets of not less than **Kshs. 100 Million** or capacity to have a minimum cash flow of **Kshs. 100 million**. This shall be evidenced by any of the following: | Form FIN – 3.1, with attachments<br>• Letter of line of credit from approved financial institution specific to this project and indicating the amount available.<br>OR<br>• Overdraft facility from a commercial bank specifically for this project and indicating the amount to be availed.<br>OR<br>• Current bank statement for the last three months<br>• Or a combination of the above | **Must Meet** |
| | | iii) The audited balance sheets or, if not required by the laws of the Tenderer's country, other financial statements acceptable | • *Audited financial statements incorporating balance sheets (statements of financial position), profit* | |

| | | | | |
|---|---|---|---|---|
| | | to the Procuring Entity, for the last *[5] five* years shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its prospective long-term profitability. **(Bidder should have an average turnover of KES. 300,000,000.00 Per year)** | *and loss statements (statements of comprehensive income) and cash flow statements for any of the last 5 years (2019-2024) prepared in accordance with International Financial Reporting Standards and incorporating audit opinions issued in accordance with ICPAK By-Law No. 38. Form 3.1 and 3.2 must be filled* ) | |
| 3 | Contractor's Representative and Key Personnel | **Qualifications and technical experience of site personnel to manage and execute the works on the site.**<br><br>**Project Manager (Principal representative of the contractor) (1No):**<br>1. B. Architecture / BSc (Building Economics/ Quantity Surveying) / Bsc Civil Engineering or Bachelor in Construction Management<br>2. Registered Professional Architect or Quantity Surveyor with BORAQS or Registered Engineer with EBK or IEK and must have a valid practicing license - **Mandatory**<br>3. Experience – Ten (10) years<br><br>**Site Agent (1No.)**<br>1. BA Architecture/BSc (Building Economics/ Quantity Surveying)/ BSc Civil Engineering/ Construction Management or Higher National Diploma in a related field<br>2. Registered Professional Architect or Quantity Surveyor with BORAQs and must have a valid practicing license - Mandatory<br>3. Experience – Ten (10) years | <u>Form PER- 1 and PER-2</u><br><br>• Certified Copies of academic certificates by Commissioner of Oaths<br><br>• Certified copies of professional certificates by Commissioner of Oaths<br><br>• Certifies copies of current practicing license by Commissioner of Oaths<br><br>• Curriculum vitae signed by the nominee<br><br>• A written undertaking signed by the nominee confirming his/her availability to carry out the assignment upon winning the bid. The written undertaking shall be addressed to MD/CEO Kenya Airports Authority and must be specific to this tender | **Must Meet** |

| | | | | |
|---|---|---|---|---|
| 4. | | **Environmental Health & Safety Officer (1No.)**<br><br>1. Degree in Environmental Sciences or Engineering;<br><br>2. At least 6 years' relevant industry experience in a supervisory capacity;<br><br>3. Knowledge of OSHA, local environmental, health and safety laws;<br><br>4. Knowledge skills in First Aid;<br>and<br><br>5. Experience in EHS Auditing | Certified Copies of academic certificates by Commissioner of Oaths<br><br>Certified copies of professional certificates by Commissioner of Oaths<br><br>Certifies copies of current practicing license by Commissioner of Oaths<br><br>Curriculum vitae signed by the nominee<br><br>A written undertaking signed by the nominee confirming his/her availability to carry out the assignment upon winning the bid. The written undertaking shall be addressed to MD/CEO Kenya Airports Authority and must be specific to this tender | **Must Meet** |
| 5 | Proposed Methodology | Adequacy and quality of the proposed methodology | **Technical approach and methodology**<br><br>Provide a detailed work methodology including:<br><br>i. Procedure execution of activities as outlined in BoQs<br>ii. Allocation machinery/labour execution activities<br>iii. Procedures in quality control of the activities described in BoQ<br><br>**Provided a Methodology on safety during the construction period**:<br>1. Personal protective equipment<br>2. Signage<br><br>**Work plan/Program of Works (PoW)**<br><br>1. PoW Resourced with Equipment-Min. | **Must Meet**<br><br>**Must Meet**<br><br>**Must Meet** |

| | | | | |
|---|---|---|---|---|
| | | | allocation pursuant to the ***Schedule E of***<br><br>2. ***Technical Proposal -*** – To be submitted in A3 Size Paper well legible Fonts<br>1. PoW captures Monthly outputs for each activity.<br><br>**(Site Organization and staffing (**Schedule B of Technical proposal**))** | |
| 6 | | Company past works experience in the last **5** years<br><br>Proof of at least **two (2)** similar works in an operational environment (general building works), costing not less than **Kshs. 300 million** on average previously undertaken in the last five years (2019 to date) Bidder shall attach copies of the following:<br><br>1. Letters of Award or,<br>2. Signed Contract and Completion Certificate for the respective projects. or<br>3. If project is ongoing it must be at least 70% complete. Bidder to attach copies of interim payment certificates. | | **Must Meet** |
| 7 | Priced Bill of Quantities | Fill all rates and amounts,<br><br>**NO** Alterations of the Quantities accepted,<br><br>All bidders own Corrections must be Countersigned<br><br>**NO** Errors noted in the Bills of Quantities<br><br>**NO** Alterations of the units of measurements accepted | Bills of Quantities in the Prescribed Format | **Must Meet** |

NOTE: **Tenderers who will not meet ANY of the above technical requirements shall not be evaluated further**

# SECTION IV - TENDERING FORMS

## QUALIFICATION FORMS

### 1. FOREIGN TENDERERS 40% RULE

Pursuant to ITT 3.9, a foreign tenderer must complete this form to demonstrate that the tender fulfils this condition.

| ITEM | Description of Work Item | Describe location of Source | COST in K. shillings | Comments, if any |
|---|---|---|---|---|
| A | Local Labor | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| B | Sub contracts from Local sources | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| C | Local materials | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| D | Use of Local Plant and Equipment | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| E | Add any other items | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| | TOTAL COST LOCAL CONTENT | | XXXXX | |
| | PERCENTAGE OF CONTRACT PRICE | | | |

## 2. FORM: EQUIPMENT

The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Tenderer.

| | | |
|---|---|---|
| Item of equipment | | |
| Equipment information | Name of manufacturer | Model and power rating |
| | Capacity | Year of manufacture |
| Current status | Current location | |
| | Details of current commitments | |
| Source | Indicate source of the equipment<br>☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured | |

Omit the following information for equipment owned by the Tenderer.

| | | |
|---|---|---|
| Owner | Name of owner | |
| | Address of owner | |
| | Telephone | Contact name and title |
| | Fax | Telex |
| Agreements | Details of rental / lease / manufacture agreements specific to the project | |
| | | |
| | | |

## 3. FORM PER -1

Contractor's Representative and Key Personnel Schedule

Tenderers should provide the names and details of the suitably qualified Contractor's Re presentative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Contractor' Representative and Key Personnel

| | | |
|---|---|---|
| **1.** | **Title of position:** Contractor's Representative | |
| | **Name of candidate:** | |
| | **Duration of appointment:** | [*insert the whole period (start and end dates) for which this position will be engaged*] |
| | **Time commitment: for this position:** | [*insert the number of days/week/months/ that has been scheduled for this position*] |
| | **Expected time schedule for this position:** | [*insert the expected time schedule for this position (e.g. attach high level Gantt chart*] |
| **2.** | **Title of position:** *[_____]* | |
| | **Name of candidate:** | |
| | **Duration of appointment:** | [*insert the whole period (start and end dates) for which this position will be engaged*] |
| | **Time commitment: for this position:** | [*insert the number of days/week/months/ that has been scheduled for this position*] |
| | **Expected time schedule for this position:** | [*insert the expected time schedule for this position (e.g. attach high level Gantt chart*] |
| **3.** | **Title of position:** *[_____]* | |
| | **Name of candidate:** | |
| | **Duration of appointment:** | [*insert the whole period (start and end dates) for which this position will be engaged*] |
| | **Time commitment: for this position:** | [*insert the number of days/week/months/ that has been scheduled for this position*] |
| | **Expected time schedule for this position:** | [*insert the expected time schedule for this position (e.g. attach high level Gantt chart*] |
| **4.** | **Title of position:** *[_____]* | |
| | **Name of candidate:** | |
| | **Duration of appointment:** | [*insert the whole period (start and end dates) for which this position will be engaged*] |
| | **Time commitment: for this position:** | [*insert the number of days/week/months/ that has been scheduled for this position*] |
| | **Expected time schedule for this position:** | [*insert the expected time schedule for this position (e.g. attach high level Gantt chart*] |
| **5.** | **Title of position:** *[insert title]* | |
| | **Name of candidate** | |
| | **Duration of appointment:** | [*insert the whole period (start and end dates) for which this position will be engaged*] |
| | **Time commitment: for this position:** | [*insert the number of days/week/months/ that has been scheduled for this position*] |
| | **Expected time schedule for this position:** | [*insert the expected time schedule for this position (e.g. attach high level Gantt chart*] |

## 4. FORM PER - 2:

Resume and Declaration - Contractor's Representative and Key Personnel.

| Name of Tenderer |
|---|
| |

| Position [*#1*]: [*title of position from Form PER-1*] | | |
|---|---|---|
| Personnel information | Name: | Date of birth: |
| | Address: | E-mail: |
| | | |
| | Professional qualifications: | |
| | Academic qualifications: | |
| | Language proficiency: *[language and levels of speaking, reading and writing skills]* | |
| Details | | |
| | Address of Procuring Entity: | |
| | Telephone: | Contact (manager / personnel officer): |
| | Fax: | |
| | Job title: | Years with present Procuring Entity: |

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

| Project | Role | Duration of involvement | Relevant experience |
|---|---|---|---|
| *[main project details]* | *[role and responsibilities on the project]* | *[time in role]* | *[describe the experience relevant to this position]* |
| | | | |
| | | | |
| | | | |

Declaration

I, the undersigned *[insert either "Contractor's Representative" or "Key Personnel" as applicable]*, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Tender:

| **Commitment** | **Details** |
|---|---|
| Commitment to duration of contract: | *[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]* |
| Time commitment: | *[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]* |

I understand that any misrepresentation or omission in this Form may:

(a) be taken into consideration during Tender evaluation;
(b) result in my disqualification from participating in the Tender;
(c) result in my dismissal from the contract.

Name of Contractor's Representative or Key Personnel: [*insert name*]

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Tenderer:

Signature: _____

Date: (day month year): _____

# 5. TENDERERS QUALIFICATION WITHOUT PREQUALIFICATION

To establish its qualifications to perform the contract in accordance with Section III, Evaluation and Qualification Criteria the Tenderer shall provide the information requested in the corresponding Information Sheets included hereunder.

## 51 FORM ELI

**-1.1 Tenderer**

**Information**

**Form**

Date:_____ ITT No. and title:_____

| |
|---|
| Tenderer's name |
| In case of Joint Venture (JV), name of each member: |
| Tenderer's actual or intended country of registration:<br>*[indicate country of Constitution]* |
| Tenderer's actual or intended year of incorporation: |
| Tenderer's legal address [in country of registration]: |
| Tenderer's authorized representative information<br>Name: _____<br>Address: _____<br>Telephone/Fax numbers: _____<br>E-mail address: _____ |
| 1. Attached are copies of original documents of<br>☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITT 3.6<br>☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITT 3.5<br>☐In case of state-owned enterprise or institution, in accordance with ITT 3.8, documents establishing:<br>• Legal and financial autonomy<br>• Operation under commercial law<br>1. Establishing that the Tenderer is not under the supervision of the Procuring Entity<br>2. Included are the organizational chart and a list of Board of Directors |

## 5.2 FORM ELI

**-1.2**

**Tenderer's JV Information Form**
**(to be completed for each member of Tenderer's JV)**

Date:_____ ITT No. and title:_____

| |
|---|
| Tenderer's JV name: |
| JV member's name: |
| JV member's country of registration: |
| JV member's year of constitution: |
| JV member's legal address in country of constitution: |
| JV member's authorized representative information<br>Name: _____<br>Address: _____<br>Telephone/Fax numbers: _____<br>E-mail address: _____ |
| 1. Attached are copies of original documents of<br>☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITT 3.6.<br>☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Procuring Entity, in accordance with ITT 3.5.<br><br>2. Included are the organizational chart and a list of Board of Directors. |

53 **FORM**

**CON –2**

## Historical Contract Non-Performance, Pending Litigation and Litigation History

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

| Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria | | | |
|---|---|---|---|
| ☐ Contract non-performance did not occur since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1.<br><br>☐ Contract(s) not performed since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, requirement 2.1<br><br>☐ Contract(s) withdrawn since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, requirement 2.1 | | | |
| **Year** | **Non- performed portion of contract** | **Contract Identification** | **Total Contract Amount (current value, currency, exchange rate and Kenya Shilling equivalent)** |
| *[insert year]* | *[insert amount and percentage]* | Contract Identification: *[indicate complete contract name/ number, and any other identification]*<br>Name of Procuring Entity: *[insert full name]*<br>Address of Procuring Entity: *[insert street/city/country]*<br>Reason(s) for nonperformance: *[indicate main reason(s)]* | *[insert amount]* |
| Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria | | | |
| ☐ No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3.<br>☐ Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3 as indicated below. | | | |

| **Year of dispute** | **Amount in dispute (currency)** | **Contract Identification** | **Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)** |
|---|---|---|---|
| | | Contract Identification: _____<br>Name of Procuring Entity:<br>_____<br>Address of Procuring Entity:<br>_____<br>Matter in dispute: _____<br>Party who initiated the dispute: ____<br>Status of dispute: _____ | |
| | | Contract Identification:<br>Name of Procuring Entity:<br>Address of Procuring Entity:<br>Matter in dispute:<br>Party who initiated the dispute:<br>Status of dispute: | |
| Litigation History in accordance with Section III, Evaluation and Qualification Criteria | | | |

| Year of dispute | Amount in dispute (currency) | Contract Identification | Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate) |
|---|---|---|---|
| ☐ No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4.<br>☐ Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below. | | | |
| *[insert year]* | *[insert percentage]* | Contract Identification: [indicate complete contract name, number, and any other identification]<br>Name of Procuring Entity: *[insert full name]*<br>Address of Procuring Entity: *[insert street/city/country]*<br>Matter in dispute: *[indicate main issues in dispute]*<br>Party who initiated the dispute: *[indicate "Procuring Entity" or "Contractor"]*<br>Reason(s) for Litigation and award decision *[indicate main reason(s)]* | *[insert amount]* |

Include details relating to potential bid-rigging practices such as previous occasions where tenders were withdrawn, joint bids with competitors, subcontracting work to unsuccessful tenderers, etc.

## 5.4 FORM FIN – 3.1:

**Financial Situation and Performance**

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

### 5.4.1. Financial Data

| **Type of Financial information in_____ (currency)** | **Historic information for previous _____*years*, _____ (amount in currency, currency, exchange rate*, USD equivalent)** | | | | |
|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| Statement of Financial Position (Information from Balance Sheet) | | | | | |
| Total Assets (TA) | | | | | |
| Total Liabilities (TL) | | | | | |
| Total Equity/Net Worth (NW) | | | | | |
| Current Assets (CA) | | | | | |
| Current Liabilities (CL) | | | | | |
| Working Capital (WC) | | | | | |
| Information from Income Statement | | | | | |
| Total Revenue (TR) | | | | | |
| Profits Before Taxes (PBT) | | | | | |
| Cash Flow Information | | | | | |
| Cash Flow from Operating Activities | | | | | |

*Refer to ITT 15 for the exchange rate

### 5.4.2 Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

| No. | Source of finance | Amount (Kenya Shilling equivalent) |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |

### 5.4.3 Financial documents

The Tenderer and its parties shall provide copies of financial statements for _____years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor 3.1. The financial statements shall:

(a) reflect the financial situation of the Tenderer or in case of JV member, and not an affiliated entity (such as parent company or group member).

(b) be independently audited or certified in accordance with local legislation.

(c) be complete, including all notes to the financial statements.

(d) correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements[1] for the _____ years required above; and complying with the requirements

[1] If the most recent set of financial statements is for a period earlier than 12 months from the date of Tender, the reason for this should be justified.

## 5.5 FORM FIN – 3.2:

**Average Annual Construction Turnover**

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

| | Annual turnover data (construction only) | | |
|---|---|---|---|
| **Year** | **Amount Currency** | **Exchange rate** | **Kenya Shilling equivalent** |
| *[indicate year]* | *[insert amount and indicate currency]* | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Average Annual Construction Turnover * | | | |

* See Section III, Evaluation and Qualification Criteria, Sub-Factor 3.2.

## 5.6 FORM FIN – 3.3:

**Financial Resources**

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as specified in Section III, Evaluation and Qualification Criteria

| Financial Resources | | |
|---|---|---|
| **No.** | **Source of financing** | **Amount (Kenya Shilling equivalent)** |
| 1 | | |
| 2 | | |
| 3 | | |
| | | |

## 5.7 FORM FIN – 3.4:

**Current Contract Commitments / Works in Progress**

Tenderers and each member to a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

| Current Contract Commitments | | | | | |
|---|---|---|---|---|---|
| **No.** | **Name of Contract** | **Procuring Entity's Contact Address, Tel,** | **Value of Outstanding Work [Current Kenya Shilling /month Equivalent]** | **Estimated Completion Date** | **Average Monthly Invoicing Over Last Six Months [Kenya Shilling /month)]** |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| | | | | | |

## 5.8 FORM EXP - 4.1

### General Construction Experience

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

Page _____of _____pages

| Starting Year | Ending Year | Contract Identification | Role of Tenderer |
|---|---|---|---|
| | | Contract name: _____<br>Brief Description of the Works performed by the Tenderer: _____<br>Amount of contract: _____<br>Name of Procuring Entity: _____<br>Address: _____ | |
| | | Contract name: _____<br>Brief Description of the Works performed by the Tenderer: _____<br>Amount of contract: _____<br>Name of Procuring Entity: _____<br>Address: _____ | |
| | | Contract name: _____<br>Brief Description of the Works performed by the Tenderer: _____<br>Amount of contract: _____<br>Name of Procuring Entity: _____<br>Address: _____ | |

## 5.9 FORM EXP - 4.2(a)

**Specific Construction and Contract Management Experience**

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

| **Similar Contract No.** | **Information** | | | |
|---|---|---|---|---|
| Contract Identification | | | | |
| Award date | | | | |
| Completion date | | | | |
| Role in Contract | Prime Contractor ☐ | Member in JV ☐ | Management Contractor ☐ | Sub-contractor ☐ |
| Total Contract Amount | | | **Kenya Shilling** | |
| If member in a JV or sub-contractor, specify participation in total Contract amount | | | | |
| Procuring Entity's Name: | | | | |
| Address:<br>Telephone/fax number<br>E-mail: | | | | |

| **Similar Contract No.** | **Information** |
|---|---|
| Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III: | |
| 1. Amount | |
| 2. Physical size of required works items | |
| 3. Complexity | |
| 4. Methods/Technology | |
| 5. Construction rate for key activities | |
| 6. Other Characteristics | |

## 5.10 FORM EXP - 4.2(b)

**Construction Experience in Key Activities**

Tenderer's Name: _____
Date: _____
Tenderer's JV Member Name: _____
Sub-contractor's Name[2] (as per ITT 34): _____
ITT No. and title: _____

All Sub-contractors for key activities must complete the information in this form as per ITT 34 and Section III, Evaluation and Qualification Criteria, Sub-Factor 4.2.

1. Key Activity No One: _
_____

| | **Information** | | | |
|---|---|---|---|---|
| Contract Identification | | | | |
| Award date | | | | |
| Completion date | | | | |
| Role in Contract | Prime Contractor ☐ | Member in JV ☐ | Management Contractor ☐ | Sub-contractor ☐ |
| Total Contract Amount | | | **Kenya Shilling** | |
| Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year | Total quantity in the contract (i) | Percentage participation (ii) | | Actual Quantity Performed (i) x (ii) |
| Year 1 | | | | |
| Year 2 | | | | |
| Year 3 | | | | |
| Year 4 | | | | |
| Procuring Entity's Name: | | | | |
| Address:<br>Telephone/fax number<br>E-mail: | | | | |

| | **Information** |
|---|---|
| Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III: | |
| | |

2. Activity No. Two

3. .....

[2] If applicable

## 6. FORM OF TENDER

**(Amended and issued pursuant to PPRA CIRCULAR No. 02/2022)**

***INSTRUCTIONS TO TENDERERS***

*i) All italicized text is to help the Tenderer in preparing this form.*

*ii) The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address. Tenderers are reminded that this is a mandatory requirement.*

*iii) Tenderer must complete and sign CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION FORMS OF THE TENDERER as listed under (xxii) below.*

**Date of this Tender submission**: .....*[insert date (as day, month and year) of Tender submission] Tender*

**Name and Identification**: **PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP** .....*[insert identification] Alternative* **No.**:

.....*[insert identification No if this is a Tender for an alternative]*

To: ..... *[Insert complete name of Procuring Entity]*

**Date of this Tender submission**: *[insert date (as day, month and year) of Tender submission]*

**Request for Tender No.: [***insert identification]* **Name and description of Tender** ***PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP***

**Alternative No.:** *[insert identification No if this is a Tender for an alternative]*

**To:** *[insert complete name of Procuring Entity]*

Dear Sirs,

1. In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities for the execution of the above named Works, we, the undersigned offer to construct and complete the Works and remedy any defects therein for the sum[3] of Kenya Shillings [*[Amount in figures]* _____Kenya Shillings *[amount in words]*_____

   The above amount includes foreign currency[4] amount (s) of [*state figure or a percentage and currency*] [figures]_____[words] _____

   _____

2. We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Architect notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Special Conditions of Contract.

3. We agree to adhere by this tender until **186** days *[Insert date],* and it shall remain binding upon us and may be accepted at any time before that date.

[3] *This sum should be carried forward from the Summary of the Bills of Quantities.*

[4] *The percentage quoted above should not include provisional sums, and not more than two foreign currencies are allowed.*

4. We understand that you are not bound to accept the lowest or any tender you may receive.

5. We, the under signed, further declare that:

i) No issued in accordance reservations: We have examined and have no reservations to the tender document, including Addenda with ITT 28;

ii) Eligibility: We meet the eligibility requirements and have no conflict of interest in accordance with ITT 3 and 4;

iii) Tender - Securing Declaration: We have not been suspended nor declared ineligible by the Procuring Entity based on execution of a Tender-Securing or Proposal-Securing Declaration in the Procuring Entity's Country in accordance with ITT 19.8;

*iv)* Conformity: We offer to execute in conformity with the tendering documents and in accordance with the implementation and completion specified in the construction schedule, the following Works: *[insert a brief description of the Works];*

*v)* Tender Price: The total price of our Tender, excluding any discounts offered in item 1 above is: *[Insert one of the options below as appropriate]*

vi Option 1, in case of one lot: Total price is: *[insert the total price of the Tender in words and figures, indicating the various amounts and the respective currencies*]; or

Option2, in case of multiple lots:

(a) Total price of each lot [*insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies*]; and

(b) Total price of all lots (sum of all lots) [*insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies*];

vii) Discounts: The discounts offered and the methodology for their application are:

viii) The discounts offered are: [*Specify in detail each discount offered.*]

ix) The exact method of calculations to determine the net price after application of discounts is shown below: [*Specify in detail the method that shall be used to apply the discounts*];

x) Tender Validity Period: Our Tender shall be valid for the period specified in TDS 18.1 (as amended, if applicable) from the date fixed for the Tender submission deadline specified in TDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

xi) Performance Security: If our Tender is accepted, we commit to obtain a Performance Security in accordance with the Tendering document;

xii) One Tender Per Tender: We are not submitting any other Tender(s) as an individual Tender, and we are not participating in any other Tender(s) as a Joint Venture member or as a sub-contractor, and meet the requirements of ITT 3.4, other than alternative Tenders submitted in accordance with ITT 13.3;

xiii) Suspension and Debarment: We, along with any of our subcontractors, suppliers, Engineer, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Public Procurement Regulatory Authority or any other entity of the Government of Kenya, or any international organization.

xiv) State-owned enterprise or institution: [*select the appropriate option and delete the other*] [*We*

*are not a state- owned enterprise or institution*]/[*We are a state-owned enterprise or institution but meet the requirements of ITT3.8*];

*xv)* Commissions, gratuities, fees: We have paid, or will pay the following commissions, gratuities, or fees with respect to the tender process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity].*

| Name of Recipient | Address | Reason | Amount |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

*(If none has been paid or is to be paid, indicate "none.")*

xvi) Binding Contract: We understand that this Tender, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;

xvii) Not Bound to Accept: We understand that you are not bound to accept the lowest evaluated cost Tender, the Most Advantageous Tender or any other Tender that you may receive;

xviii) Fraud and Corruption: We here by certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption; and

xix) Collusive practices: We hereby certify and confirm that the tender is genuine, non-collusive and made with the intention of accepting the contract if awarded. To this effect we have signed the "Certificate of Independent Tender Determination" attached below.

xx) We undertake to adhere by the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal, copy available from_____(*specify website*) during the procurement process and the execution of any resulting contract.

xxi) **Beneficial Ownership Information:** We commit to provide to the procuring entity the Beneficial Ownership Information in conformity with the Beneficial Ownership Disclosure Form upon receipt of notification of intention to enter into a contract in the event we are the successful tenderer in this subject procurement proceeding.

xxii) We, the Tenderer, have duly completed, signed and stamped the following Forms as part of our Tender:

a) Tenderer's Eligibility; Confidential Business Questionnaire - to establish we are not in any conflict to interest.

(b) Certificate of Independent Tender Determination - to declare that we completed the tender without colluding with other tenderers.

(a) Self-Declaration of the Tenderer - to declare that we will, if awarded a contract, not engage in any form of fraud and corruption.

(d) Declaration and commitment to the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal.

Further, we confirm that we have read and understood the full content and scope of fraud and corruption as informed in **"Appendix 1 - Fraud and Corruption**" attached to the Form of Tender.

**Name of the Tenderer:** *[*insert complete name of person signing the Tender*]

**Name of the person duly authorized to sign the Tender on behalf of the Tenderer:** **[*insert complete name of person duly authorized to sign the Tender*]

**Title of the person signing the Tender**: [*insert complete title of the person signing the Tender*]

**Signature of the person named above**: [*insert signature of person whose name and capacity are shown above*]

**Date signed** [*insert date of signing*] day of [*insert month*], [*insert year*]

Date signed_____day

of_____,_____

Notes

** In the case of the Tender submitted by joint venture specify the name of the Joint Venture as Tenderer.*

***Person signing the Tender shall have the power of attorney given by the Tenderer to be attached with the Tender.*

**TENDERER'S ELIGIBILITY-**

**CONFIDENTIAL BUSINESS QUESTIONNAIRE**

**Instruction to Tenderer**

Tender is instructed to complete the particulars required in this Form, *one form for each entity if Tender is a JV.* Tenderer is further reminded that it is an offence to give false information on this Form.

**Tenderer's details**

| | ITEM | DESCRIPTION |
|---|---|---|
| 1 | Name of the Procuring Entity | Kenya Airports Authority |
| 2 | Reference Number of the Tender | **KAA/OT/UKUNDA/0169/2024-2025** |
| 3 | Date and Time of Tender Opening | |
| 4 | Name of the Tenderer | |
| 5 | Full Address and Contact Details of the Tenderer. | 1. County<br>2. City<br>3. Location<br>4. Building<br>5. Floor<br>6. Postal Address<br>7. Name and email of contact person |
| 6 | Current Trade License Registration Number and Expiring date | |
| 7 | Name, country and full address (*postal and physical addresses, email, and telephone number*) of Registering Body/Agency | |
| 8 | Description of Nature of Business | |
| 9 | Maximum value of business which the Tenderer handles. | |
| 10 | State if Tenders Company is listed in stock exchange, give name and full address (*postal and physical addresses, email, and telephone number*) of state which stock exchange | |

## General and Specific Details

**(a) Sole Proprietor,** provide the following details.

Name in full_____Age_____
Nationality_____Country of Origin_____
Citizenship_____

**(b) Partnership,** provide the following details.

| | Names of Partners | Nationality | Citizenship | % Shares owned |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |

**(c) Registered Company,** provide the following details.

I) Private or public Company _____
ii) State the nominal and issued capital of the Company_____

Nominal Kenya Shillings (Equivalent).....
Issued Kenya Shillings (Equivalent).....

iii) Give details of Directors as follows.

| | Names of Director | Nationality | Citizenship | % Shares owned |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |

**(d) DISCLOSURE OF INTEREST - Interest of the Firm in the Procuring Entity.**

Are there any person/persons in..... (*Name of Procuring Entity)* who has/have an interest or relationship in this firm? Yes/No.....

If yes, provide details as follows.

| | Names of Person | Designation in the Procuring Entity | Interest or Relationship with Tenderer |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |

**Conflict of interest disclosure**

| | Type of Conflict | Disclosure YES OR NO | If YES provide details of the relationship with Tenderer |
|---|---|---|---|
| 1 | Tenderer is directly or indirectly controls, is controlled by or is under common control with another tenderer. | | |
| 2 | Tenderer receives or has received any direct or indirect subsidy from another tenderer. | | |
| 3 | Tenderer has the same legal | | |

| | Type of Conflict | Disclosure YES OR NO | If YES provide details of the relationship with Tenderer |
|---|---|---|---|
| | representative as another tenderer | | |
| 4 | Tender has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process. | | |
| 5 | Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender. | | |
| 6 | Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract specified in this Tender Document. | | |
| 7 | Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract. | | |
| 8 | Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of the such Contract. | | |
| 9 | Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract. | | |

**Certification**

On behalf of the Tenderer, I certify that the information given above is complete, current and accurate as at the date of submission.

Full Name_____

Title or Designation_____

_____ _____

*(Signature)* *(Date)*

**b) CERTIFICATE OF INDEPENDENT TENDER DETERMINATION**

I, the undersigned, in submitting the accompanying Letter of Tender to the_____ *[Name of Procuring Entity]* for: **PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP TENDER NO. KAA/OT/UKUNDA/0169/2024-2025** *[Name and number of tender]* in response to the request for tenders made by:_____ *[Name of Tenderer]* do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of_____ *[Name of Tenderer]* that:

1. I have read and I understand the contents of this Certificate;

2. I understand that the Tender will be disqualified if this Certificate is found not to be true and complete in every respect;

3. I am the authorized representative of the Tenderer with authority to sign this Certificate, and to submit the Tender on behalf of the Tenderer;

4. For the purposes of this Certificate and the Tender, I understand that the word "competitor" shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:

    a) Has been requested to submit a Tender in response to this request for tenders;
    b) could potentially submit a tender in response to this request for tenders, based on their qualifications, abilities or experience;

5. The Tenderer discloses that [check one of the following, as applicable]:

    a) The Tenderer has arrived at the Tender independently from, and without consultation, communication, agreement or arrangement with, any competitor;

    b) the Tenderer has entered into consultations, communications, agreements or arrangements with one or more competitors regarding this request for tenders, and the Tenderer discloses, in the attached document(s), complete details thereof, including the names of the competitors and the nature of, and reasons for, such consultations, communications, agreements or arrangements;

6. In particular, without limiting the generality of paragraphs (5)(a) or(5)(b) above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

    a) prices;
    b) methods, factors or formulas used to calculate prices;
    c) the intention or decision to submit, or not to submit, a tender; or
    d) the submission of a tender which does not meet the specifications of the request for Tenders; except as specifically disclosed pursuant to paragraph (5)(b) above;

7. In addition, there has been no consultation, communication, agreement or arrangement with any competitor regarding the quality, quantity, specifications or delivery particulars of the works or services to which this request for tenders relates, except as specifically authorized by the procuring authority or as specifically disclosed pursuant to paragraph(5)(b) above;

8. The terms of the Tender have not been, and will not be, knowingly disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening, or of the awarding of the Contract, which ever comes first, unless otherwise required by law or as specifically disclosed pursuant to paragraph (5)(b) above.

Name

Title

Date

*[Name, title and signature of authorized agent of Tenderer and Date]*

*(c)* **SELF- DECLARATION FORMS**

## FORM SD1

**SELF DECLARATION THAT THE PERSON/TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENT AND ASSET DISPOSAL ACT 2015.**

I, ....., of Post Office Box ..... being a resident of..... in the Republic of ..... do hereby make a statement as follows: -

1. THAT I am the Company Secretary/ Chief Executive/Managing Director/Principal Officer/Direct or of ..... *(insert name of the Company)* who is a Bidder in respect of **TENDER NO. KAA/OT/UKUNDA/0169/2024-2025**
   **PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP .....** for ..... *(insert tender title/description)* for ..... *(insert name of the Procuring entity)* and duly authorized and competent to make this statement.

2. THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred from participating in procurement proceeding under Part IV of the Act.

3. THAT what is deponed to here in above is true to the best of my knowledge, information and belief.

.....
.....
..... (Title)
(Signature)
(Date)

Bidder Official Stamp

## FORM SD2

**SELF DECLARATION THAT THE PERSON/TENDERER WILL NOT ENGAGE IN ANY CORRUPT OR FRAUDULENT PRACTICE.**

I, .....of P.O. Box ..... being a resident of ..... in the Republic of ..... do hereby make a statement as follows: -

1. THAT I am the Chief Executive/Managing Director/Principal Officer/Director of ..... (insert name of the Company) who is a Bidder in respect of **Tender No.**..... for
   **TENDER NO. KAA/OT/UKUNDA/0169/2024-2025**
   **PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP** ..... *(insert tender title/description)* for ..... *(insert name of the Procuring entity)* and duly authorized and competent to make this statement.

2. THAT the aforesaid Bidder, its servants and/or agents/subcontractors will not engage in any corrupt or fraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/or employees and/or agents of ..... *(insert name of the Procuring entity)* which is the procuring entity.

3. THAT the aforesaid Bidder, its servants and/or agents /subcontractors have not offered any inducement to any member of the Board, Management, Staff and/or employees and/or agents of ..... *(name of the procuring entity).*

4. THAT the aforesaid Bidder will not engage /has not engaged in any corrosive practice with other bidders participating in the subject tender

5. THAT what is deponed to here in above is true to the best of my knowledge information and belief.

..... .....
..... (Title)
(Signature)
(Date)

Bidder's Official Stamp

**DECLARATION AND COMMITMENT TO THE CODE OF ETHICS**

I ..... (person) on behalf of ***(Name of the Business/ Company/Firm***) . ..... declare that I have read and fully understood the contents of the Public Procurement & Asset Disposal Act, 2015, Regulations and the Code of Ethics for persons participating in Public Procurement and Asset Disposal and my responsibilities under the Code.

I do here by commit to abide by the provisions of the Code of Ethics for persons participating in Public Procurement and Asset Disposal.

Name of Authorized signatory.....

Sign.....

Position.....

Office address.....

Telephone.....

Email.....

Name of the Firm/Company.....

Date.....

(Company Seal/ Rubber Stamp where applicable)

Witness

Name.....

Sign.....

Date.....

## APPENDIX 1 - FRAUD AND CORRUPTION

**1. Purpose**

1.1 The Government of Kenya's Anti-Corruption and Economic Crime laws and their sanction's policies and procedures, Public Procurement and Asset Disposal Act *(no. 33 of 2015)* and its Regulation, and any other Kenya's Acts or Regulations related to Fraud and Corruption, and similar offences, shall apply with respect to Public Procurement Processes and Contracts that are governed by the laws of Kenya.

2. Requirements

2.1 The Government of Kenya requires that all parties including Procuring Entities, Tenderers, (applicants/proposers), Consultants, Contractors and Suppliers; any Sub-contractors, Sub-consultants, Service providers or Suppliers; any Agents (whether declared or not); and any of their Personnel, involved and engaged in procurement under Kenya's Laws and Regulation, observe the highest standard of ethics during the procurement process, selection and contract execution of all contracts, and refrain from Fraud and Corruption and fully comply with Kenya's laws and Regulations as per paragraphs 1.1 above.

2.2 Kenya's public procurement and asset disposal act *(no. 33 of 2015)* under Section 66 describes rules to be followed and actions to be taken in dealing with Corrupt, Coercive, Obstructive, Collusive or Fraudulent practices, and Conflicts of Interest in procurement including consequences for offences committed. A few of the provisions noted below highlight Kenya's policy of no tolerance for such practices and behavior:

1) A person to whom this Act applies shall not be involved in any corrupt, coercive, obstructive, collusive or fraudulent practice; or conflicts of interest in any procurement or as set disposal proceeding;

2) A person referred to under subsection (1) who contravenes the provisions of that sub-section commits an offence;

3) Without limiting the generality of the subsection (1) and (2), the person shall be: -

   a) disqualified from entering into a contract for a procurement or asset disposal proceeding; or

   b) if a contract has already been entered into with the person, the contract shall be voidable;

4) The voiding of a contract by the procuring entity under subsection (7) does not limit any legal remedy the procuring entity may have;

5) An employee or agent of the procuring entity or a member of the Board or committee of the procuring entity who has a conflict of interest with respect to a procurement: -

   a) Shall not take part in the procurement proceedings;

   b) shall not, after a procurement contract has been entered in to, take part in any decision relating to the procurement or contract; and

   c) shall not be a subcontract or for the tender to whom was awarded contract, or a member of the group of tenderers to whom the contract was awarded, but the subcontractor appointed shall meet all the requirements of this Act.

6) An employee, agent or member described in subsection (1) who refrains from doing anything prohibited under that subsection, but for that subsection, would have been within his or her duties shall disclose the conflict of interest to the procuring entity;

7) If a person contravenes subsection (1) with respect to a conflict of interest described in subsection (5)(a) and the contract is awarded to the person or his relative or to another person in whom one of them had a direct or indirect pecuniary interest, the contract shall be terminated and all costs incurred by the public entity shall be made good by the awarding officer. Etc.

3. In compliance with Kenya's laws, regulations and policies mentioned above, the Procuring Entity:

a) Defines broadly, for the purposes of the above provisons, the terms set forth below as follows:

i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
ii) "fraudulent practice" is any act or omission, including is representation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
iii) "collusive practice "is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party; "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
iv) "obstructive practice" is:

- Deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede investigation by Public Procurement Regulatory Authority (PPRA) or any other appropriate authority appointed by Government of Kenya into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

- acts intended to materially impede the exercise of the PPRA's or the appointed authority's inspection and audit rights provided for under paragraph 2.3 e. below.

b) Defines more specifically, in accordance with the above procurement Act provisions set forth for fraudulent and collusive practices as follows:

"fraudulent practice" includes a misrepresentation of fact in order to influence a procurement or disposal process or the exercise of a contract to the detriment of the procuring entity or the tenderer or the contractor, and includes collusive practices amongst tenderers prior to or after tender submission designed to establish tender prices at artificial non-competitive levels and to deprive the procuring entity of the benefits of free and open competition.

c) Rejects a proposal for award[1] of a contract if PPRA determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

d) Pursuant to the Kenya's above stated Acts and Regulations, may recommend to appropriate authority(ies) for sanctioning and debarment of a firm or individual, as applicable under the Acts and Regulations;

e) Requires that a clause be included in Tender documents and Request for Proposal documents requiring(i) Tenderers (applicants/proposers), Consultants, Contractors, and Suppliers, and their Sub-contractors, Sub-consultants, Service providers, Suppliers, Agents personnel, permit the PPRA or any other appropriate authority appointed by Government of Kenya to inspect[2] all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors

appointed by the PPRA or any other appropriate authority appointed by Government of Kenya; and

f) Pursuant to Section 62 of the above Act, requires Applicants/Tenderers to submit along with their Applications/Tenders/Proposals a "Self-Declaration Form" as included in the procurement document declaring that they and all parties involved in the procurement process and contract execution have not engaged/will not engage in any corrupt or fraudulent practices.

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[1] *For the avoidance of doubt, a party's in eligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and tendering, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.*

[2] *Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Investigating Authority or persons appointed by the Procuring Entity to address specific matters related to investigations/audits, such has evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies there of as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.*

**FORM OF TENDER SECURITY- [Option 1–Demand Bank Guarantee]**

Beneficiary:_____ Request for Tenders No:_____Date:_____

TENDER GUARANTEE No.:_____

**Guarantor:** _____

1. We have been informed that_____(herein after called "the Applicant") has submitted or will submit to the Beneficiary its Tender (here in after called" the Tender") for the execution of_____ under Request for Tenders No._____("the ITT").

2. Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.

3. At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of_____(___) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

(a) has withdrawn its Tender during the period of Tender validity set forth in the Applicant's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Applicant; or

b) having been notified of the acceptance of its Tender by the Beneficiary during the Tender Validity Period or any extension there to be provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance.

4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) thirty days after the end of the Tender Validity Period.

5. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

_____

*[signature(s)]*

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

**FORMAT OF TENDER SECURITY [Option 2–Insurance Guarantee]**

**TENDER GUARANTEE No.: _____**

1. Whereas ..... [*Name of the tenderer]* (hereinafter called "the tenderer") has submitted its tender dated ..... [*Date of submission of tender]* for the ..... *[Name and/or description of the tender]* (hereinafter called "the Tender") for the execution of___under Request for Tenders No._ _("the ITT").

2. KNOW ALL PEOPLE by these presents that WE ..... of ..... [**Name of Insurance Company**] having our registered office at ..... (hereinafter called "the Guarantor"), are bound unto ..... [*Name of Procuring Entity*] (hereinafter called "the Procuring Entity") in the sum of ..... (Currency and guarantee amount) for which payment well and truly to be made to the said Procuring Entity, the Guarantor binds itself, its successors and assigns, jointly and severally, firmly by these presents.

   Sealed with the Common Seal of the said Guarantor this ___day of _____ 20 __.

3. NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Applicant:
   a) has withdrawn its Tender during the period of Tender validity set forth in the Principal's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Principal; or
   b) having been notified of the acceptance of its Tender by the Procuring Entity during the Tender Validity Period or any extension thereto provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to tenderers ("ITT") of the Procuring Entity's Tendering document.

   then the guarantee undertakes to immediately pay to the Procuring Entity up to the above amount upon receipt of the Procuring Entity's first written demand, without the Procuring Entity having to substantiate its demand, provided that in its demand the Procuring Entity shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii)twenty-eight days after the end of the Tender Validity Period.

5. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

| | |
|---|---|
| _____ | _____ |
| *[Date]* | *[Signature of the Guarantor]* |
| _____ | _____ |
| *[Witness]* | *[Seal]* |

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

## FORM OF TENDER - SECURING DECLARATION

*[The Bidder shall complete this Form in accordance with the instructions indicated]*

Date: ..... *[insert date (as day, month and year) of Tender Submission]*

Tender No.: ..... *[insert number of tendering process]*

To: ..... *[insert complete name of Purchaser]* I/We, the undersigned,

declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.

2. I/We accept that I/we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of our obligation(s) under the bid conditions, because we–(a) have withdrawn our tender during the period of tender validity specified by us in the Tendering Data Sheet; or (b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the instructions to tenders.

3. I/We understand that this Tender Securing Declaration shall expire if we are not the successful Tenderer(s), upon the earlier of:
   a) Our receipt of a copy of your notification of the name of the successful Tenderer; or
   b) thirty days after the expiration of our Tender.

4. I/We understand that if I am /we are/ in a Joint Venture, the Tender Securing Declaration must be in the name of the Joint Venture that submits the bid, and the Joint Venture has not been legally constituted at the time of bidding, the Tender Securing Declaration shall be in the names of all future partners as named in the letter of intent.

Signed:..... Capacity/title (director or partner or sole proprietor,

etc.) ..... Name:.....

Duly authorized to sign the bid for and on behalf of: *[insert complete name of Tenderer]*

Dated on ..... day of ....., ..... *[Insert date of signing]* Seal or stamp

## Appendix to Tender

### Schedule of Currency requirements

Summary of currencies of the Tender for_____*[insert name of Section of the Works]*

| ***Name of currency*** | ***Amounts payable*** |
|---|---|
| Local currency: _____ | |
| Foreign currency #1: _____ | |
| Foreign currency #2: _____ | |
| Foreign currency #3: _____ | |
| Provisional sums expressed in local currency _____ | [*To be entered by the Procuring Entity*] |

## CERTIFICATE OF BIDDER'S SITE VISIT

This is to certify that, .....
(**Name of bidder or his representative**)

Of the firm.....
(**Name of firm bidding**)

In the company of.....
(**Name of KAA representative conducting the visit)**

Visited the site in regard to: **TENDER NO. KAA/OT/UKUNDA/0169/2024-2025**
**PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP**

Having previously studied the contract documents, I have carefully examined the site and that:

1. I have made myself familiar with the local conditions likely to influence the **PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP**
2. Cost thereof and am fully aware that all scope will be done as per the specifications.
3. I further satisfy that am satisfied with the description of the works shown by the client's representative and that I understand perfectly the works to be provided as specified and implied in the execution of the contract.

**On behalf of Bidder**

Signed.....

Date.....

**On behalf of Client**

Signed.....

Date.....

# SECTION V - BILLS OF QUANTITIES

## SCOPE OF WORKS

i. Construction to completion of Passenger terminal building

ii. Associated Electrical, Mechanical and Civil Works

### (a) Preambles

1. The method of measurement of completed work for payment shall be in accordance with current Standard Method of Measurement for building works and civil works.

2. The Site is situated in Ukunda Airstrip, Kwale County.

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 15theOctober 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 sat areas 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 tore move all paint and cement all rubbish hand dirt as it accumulates. The Contractor is to find his own dump and shall pay all charges in connection there with.

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 Contractors hall 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 Contractors 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 1set 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 6theJune 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 VAT 1.19 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

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| | **PRELIMINARIES & GENERAL CONDITIONS** ========== | | | | |
| **01** | **EMPLOYER** | | | | |
| A | The Employer is the Kenya Airports Authority. The terms "Employer" and "KAA" wherever used in any contract Document shall be synonymous | | | | |
| **02** | **DEFINITION OF TERMS** | | | | |
| B | 'Approved' shall mean approved by the Project Manager at his absolute discretion | | | | |
| C | 'Directed' shall mean directed by the Project Manager at his absolute discretion | | | | |
| D | 'Selected' shall mean directed by the Project Manager at his absolute discretion | | | | |
| E | 'B.S.' - shall mean the current British Standard Specification published by the British Standards Institution, 2 Park Street, London, WIA 2BS, England | | | | |
| F | 'K.S.' - shall mean the current Kenya Standard Specification published by the Kenya Bureau of Standards Institution. | | | | |
| G | CM - shall mean cubic metre<br>SM - shall mean square metre<br>LM - shall mean linear metre<br>MM - shall mean millimeter<br>KG - shall mean Kilogramme<br>NO - shall mean Number | | | | |
| H | Ditto - shall mean the whole of the preceding description except as qualifies in the description in which it occurs Where it occurs in descriptions of succeeding items it shall mean the same as in the first descriptions of the series in which it occurs except as qualified in the description concerned. | | | | |
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| A | KShs - shall mean Kenya Shillings | | | | |
| B | 'As described' shall mean as described in the 'Descriptions of Materials and Workmanship' contained in the Appendices to these Bills of Quantities | | | | |
| **03** | **GROUPED SIZES** | | | | |
| C | Girths, depths, or sizes grouped together in the Bills of Quantities item descriptions by means of hyphenated upper and lower limits shall be interpreted as 'exceeding' the lower limitand 'not exceeding' the upper limit. | | | | |
| **04** | **DESCRIPTION OF SITE** | | | | |
| D | The site of the proposed works is within Ukunda Airstrip in Kwale County. The Contractor is recommended to visit the site and will be deemed to have satisfied himself with regard to the conditions of the site. | | | | |
| **05** | **DESCRIPTION OF THE WORKS** | | | | |
| E | The works in this contract comprise :-<br>i) Construction to completion of Passenger Terminal Building<br>ii) Associated Civil, Electrical and Mechanical Works. | | | | |
| **06** | **AREA TO BE OCCUPIED BY CONTRACTOR** | | | | |
| F | The area of the site which may be occupied by the Contractor for use as storage or for the erection of workshops etc. shall be defined on the site by the Project Manager and the Contractor must confine his activities to the areas so marked and must ensure that his own and his sub-contractors workmen do not trespass on the adjoining property or cause inconvenience to its occupiers. | | | | |
| **07** | **EXISTING PROPERTY** | | | | |
| G | The Contractor shall take every precaution to avoid damage to all existing property on and adjacent to the site, roads, cables, drains and other services and he will be held responsible for all damage arising from the execution of this Contract to the aforementioned and he shall make good all such damage where directed at his own expense to the satisfaction of the Architect. | | | | |
| **08** | **APPENDICES** | | | | |
| H | The Appendices to the Bills of Quantities shall be regarded for Contract purposes as part of the Bills and shall be read and construed with the appropriate sections of the Bills as if contained therein. | | | | |
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| **09** | **SITE VISIT & EXAMINATION OF DRAWINGS** | | | | |
| A | The Contractor is recommended to examine the original drawings and to satisfy himself regarding their details and regarding the extent and the nature of the works and the method of construction involved, and visit the site to familiarize himself with all local conditions before tendering. He shall be deemed to have acquainted himself with the nature of the existing conditions or any other matter which may affect his tender. No claim arising from his failure to comply with this recommendation will be considered. Drawings may be seen by appointment at the office of the General Manager (P & ES), KAA, during normal working hours. | ITEM | | | |
| **10** | **VALUATION OF LUMP SUM COSTS.** | | | | |
| B | Lump sums entered in these Bills of Quantities against any item of Preliminaries and General Conditions will be included in appropriate valuations according to reasonable assessment of actual costs involved in the item. Any balance between this assessment and the actual sum entered in the Bills of Quantities will be included in subsequent valuations as monthly installments over the balance of the Contract Period. | ITEM | | | |
| **11** | **PAYMENT FOR MATERIALS ON SITE** | | | | |
| C | All materials for incorporation in the works must be stored on or adjacent to the site before payment is effected, unless specifically exempted by the Project Manager. This is to include materials of the Contractor, Nominated Sub-Contractors, and Nominated Suppliers. | ITEM | | | |
| **12** | **CONTRACT AGREEMENT AND CONDITIONS** | | | | |
| D | The Instructions to Tenderers and Conditions of Contract shall be the 'Standard Tender Document for Procurement of Works' printed in November 2001, published by the Public Procurement Directorate, Ministry of Finance and Planning. For the purposes of this Contract the said Schedule of Conditions and any such note or amendments shall be read and construed together. | ITEM | | | |
| **13** | **TOOLS, PLANT, ETC.** | | | | |
| E | The Contractor shall allow for providing all ladders, tools, plant and transport required for the works, except in so far as may be specifically stated otherwise herein. | ITEM | | | |
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| **14** | **SAFETY, HEALTH AND WELFARE OF WORKPEOPLE** | | | | |
| A | The Contractor shall allow for providing for the safety, health and welfare of workpeople and for complying with any relevant Ordinances, Regulations or Union Agreement. | ITEM | | | |
| **15** | **NATIONAL INSURANCE AND PENSIONS** | | | | |
| B | The Contractor shall allow for making any National Hospital Insurance and National Social Security Fund payments due in respect of workpeople. | ITEM | | | |
| **16** | **HOLIDAYS AND TRANSPORT FOR WORKPEOPLE** | | | | |
| C | The Contractor shall allow for providing holidays and transport for workpeople and for complying with any relevant Ordinances, Regulations or Union Agreement. | ITEM | | | |
| **17** | **TRAINING LEVY** | | | | |
| D | The Contractor's attention is drawn to Legal Notice No. 237 of October, 1971, which requires payment by the Contractor of a Training Levy on all contracts of more than Shs. 50,000/ in value and his tender must include for all costs arising or resulting therefrom. Proof of payment of this Training Levy will be required. | ITEM | | | |
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| **18** | **PROTECTION OF WORKS AND PERSONS** | | | | |
| A | The Contractor shall allow for the protection of his own and his Sub Contractor's work liable to damage, including provision of temporary roofs, gutters, drains, etc., if necessary and shall case up, cover, or in other suitable ways protect all finished work liable to injury, to the satisfaction of the Project Manag, and shall at all times keep all paths and roads affected by the works in a safe and clear state, and shall use proper precautions to ensure the safety of all wheeled traffic and pedestrians. The Contractor shall allow for providing all watching, lighting, barriers, covering open trenches and protection of the works, including Sub Contract works, as may be necessary for the safety of the works and for the protection of the public and his own and Sub Contractors' employees. In the event of any damage or loss occurring to the works, or to materials or to any sewers, gullies, drains, paths, or other works on the site in temporary possession of the Contractor for the purpose of this Contract, either from the weather, want of proper protection, defects, theft, insufficiency of the works, or any other cause whatsoever during the progress of the works, or for any accident or damage to property or persons by reason of the said works, the Contractor alone shall be responsible and shall without extra charge, make good all damage and pay all costs incurred. | ITEM | | | |
| **19** | **STANDARDS LEVY AND STANDARDS ACTS** | | | | |
| B | The Contractor's attention is drawn to legal notice No. 267 of 1990 which requires payment by Contractors of an annual Standards Levy and his tender must include for all costs arising or resulting therefrom. | ITEM | | | |
| **20** | **NATIONAL CONSTRUCTION AUTHORITY LEVY** | | | | |
| C | The Contractor shall allow 0.5% of the Cost of costruction as a levy payable to the National Construction Authority, where applicable, in accordance with Section 31 of National Construction Act No. 41 of 2011. Note that this must be paid before Commencement of the Works. | ITEM | | | |
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| **21** | **POLICE REGULATIONS** | | | | |
| A | The Contractor shall allow for complying with any relevant police regulations. | ITEM | | | |
| **22** | **PROCEDURE AND TIME FOR COMPLETION** | | | | |
| B | The Contractor shall proceed with the works in such manner and such order as the Project Manager may direct. | ITEM | | | |
| **23** | **PROGRAMME AND PROGRESS** | | | | |
| C | The Contractor shall furnish to the Project Manager, within 7 days, for approval and display in the site offices, a programme and progress chart devised in such a way that the lined programme is shown and progress can be marked up as the work proceeds. The Contractor shall keep this chart up to date at all times. | ITEM | | | |
| **24** | **WORKING HOURS** | | | | |
| D | Generally there will be no restrictions on working hours. In the interest of the usage of the new property the employer may require that overtime be worked so as to complete the works as quickly as possible.<br><br>The Contractor must allow for all costs in complying with the Project Managers instructions of working outside normal hours. No claims for extras in connection with this compliance will be entertained. | ITEM | | | |
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| **25** | **DAYWORKS** | | | | |
| A | The Project Manager, if in his opinion it is necessary or desirable, order in writing that any additional or substituted work shall be executed on a Daywork basis. The Contractor shall then be paid for such work in accordance with Daywork rates and percentage additions as inserted hereafter in these Bills of Quantities.<br><br>The Contractor shall furnish to the Project Manager all receipts or vouchers as may be necessary to prove the amounts paid and before ordering materials shall submit to the Project Manager quotations for the same for his approval.<br><br>In respect of all work executed on a Daywork basis the Contractor shall, during the continuance of such work, deliver each day to the Project Manager a list in duplicate of the names, occupation and time of all workmen employed on such work and a statement also in duplicate showing the description and quantity of all materials and plant used thereon or therefore (other than plant which is included in the percentage addition on net amount of wages). One copy of each list and statement will, if correct or when agreed, be signed by the Project Manager and returned to the Contractor.<br>At the end of each month the Contractor shall deliver to the Project Manager a priced statement of the labour, material and plant (except as aforesaid) used and the Contractor shall not be entitled to any Payment unless such lists and statements have been fully and punctually rendered. Provided always that, if the Project Manager shall consider that for any reason the sending of such list or statement by the Contractor in impracticable, he shall nevertheless be entitled to authorise payment for such work either as Daywork (on being satisfied as to the time employed and plant and materials used on such work) or at such value thereof as he shall consider fair and reasonable accordance with the foregoing provision was authorise payment for such work either as Daywork (on being satisfied as to the time employed and plant and materials used on such work) or at such value thereof as he shall consider fair and reasonable. | ITEM | | | |
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| **26** | **WATER FOR THE WORKS** | | | | |
| A | The Contractor shall allow for providing all temporary water supplies required for the works, including Sub Contract works, together with all necessary storage tanks, meters and distribution systems for the same and must allow for bearing all expenses incurred and paying for all water consumed without charge to any Sub Contractor. Expenses in connection with Nominated Sub Contractors should be allowed for in the attendance items under the relevant P.C. Sums.<br><br>Existing water supplies may be utilized by agreement with the Employer who however gives no undertaking as to the sufficiency or suitability of existing supplies. | ITEM | | | |
| **27** | **LIGHTING AND POWER FOR THE WORKS** | | | | |
| B | The Contractor shall allow for providing all temporary lighting and power supplies required for the works, including Sub Contract works, together with all necessary meters and distribution systems for the same and must allow for bearing all expenses incurred and paying for all current consumed without charge to any Sub Contractor. Expenses in connection with Nominated Sub Contractors should be allowed for in the attendance items under the relevant P.C. Sums.<br><br>Existing mains power supplies may be utilized by agreement with the Employer who however gives no undertaking as to the sufficiency or suitability of existing supplies. | ITEM | | | |
| **28** | **SIGNPOST** | | | | |
| C | The Contractor shall erect and mainain a signpost describing the nature of the project, names of the consultants, names of the contractor and his sub-contractor's and any other details as specified by the Project Manager | ITEM | | | |
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| **29** | **SITE OFFICES** | | | | |
| A | The Contractor must allow for providing, fabricating and maintaining on the site in such positions as may be directed, adequate site offices for the use of client's site staff and handing over the same (including all attached facilities and furniture) to the client at completion and making good all surfaces disturbed. Please refer to Site office equipmen and consumable appendix attached to the tender. The site office shall have sufficient furniture (in accordance to specifications schedule) to permit the Project Manager to hold site meetings in it. The site office shall conform to requirements set out in the drawings provided and shall be approved by the Project Manager.<br><br>The Contractor shall also allow for providing, erecting and maintaining where directed a lock up hut containing a pedestal type water closet and wash basin for the sole use of the Project Manager and other consultants, including making temporary connections to drains and water supplies and paying all charges for connections, conservancy and water consumed.<br><br>The Contractor shall also allow for providing the services of a sweeper, for keeping both office and closet in a clean and sanitary condition from the commencement to completion of the works; and for dismantling at completion and making good all disturbed surfaces. The office and closet shall be completed before the Contractor will be permitted to commence the works. | ITEM | | | |
| **30** | **SHEDS FOR STORAGE OF MATERIALS** | | | | |
| B | The Contractor shall provide, erect and maintain on the site, in such positions as may be directed, ample temporary watertight, lock up sheds for the proper storage and protection of cement and other materials liable to damage and shall remove same at completion and make good all surfaces disturbed. He shall also provide space for storage accommodation which Sub Contractors may wish to erect for themselves. | ITEM | | | |
| **31** | **SPACE FOR STORAGE SHEDS AND SITE OFFICES** | | | | |
| C | The site is developed, so space for site offices and storage accommodation, as described above, will be extremely limited.<br><br>The Contractor shall allow for all necessary temporary erection, dismantling and re-erection of site offices and storage sheds made necessary by the restricted nature of the site. | ITEM | | | |
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| **32** | **SANITATION OF THE WORKS** | | | | |
| A | The Contractor shall allow for providing the necessary latrines for the labour employed on the works, including labour employed by Sub Contractors, to the satisfaction of the Health and Medical Authorities and for maintaining the same in a thoroughly clean and sanitary condition and paying all conservancy fees.<br><br>The Contractor shall allow for removing the said latrines and leaving the ground clean and free from pollution upon completion to the satisfaction of the Health and Medical Authorities. | ITEM | | | |
| **33** | **NO WORKMEN TO BE HOUSED ON SITE** | | | | |
| B | No labour with the exception of a watchman may be housed on the site. The cost of transporting labour to and from the site or elsewhere will be deemed to be included in the tender. | ITEM | | | |
| **34** | **HOARDING** | | | | |
| C | The Contractor shall allow for providing and clearing away on completion such hoarding, fencing, gates etc. as may be required for the security of the site, and as instructed by the Project Manager to prevent access to the site by the public. The exact location and type of these items are to be agreed with the Project Manager and negotiated with the local Authority by the Contractor who will also be responsible for paying any fees or taxes to the Local Authority in respect of the hoarding, fencing or gates and providing any drawings necessary for approval.<br><br>The Contractor shall allow for thoroughly maintaining the hoarding and gates throughout the Contract and clearing away and making good disturbed ground on completion. All materials arising will remain the property of the Contractor and he should allow credit against this accordingly. | ITEM | | | |
| **35** | **TRADE NAMES** | | | | |
| D | Where trade names or manufacturers' catalogue numbers are mentioned in these Bills of Quantities, the reference is intended as a guide to the type of article or quality of materials required. The Contractor may use any article or material equal in type or quality to those herein described subject to the prior approval of the Project Manager and at his absolute discretion. The onus of proof as to equivalent quality will rest with the Contractor, whose tender will be deemed to include for the makes described herein. | ITEM | | | |
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| **36** | **REMOVAL OF PLANT, RUBBISH ETC** | | | | |
| A | The Contractor must allow for removing and clearing away all plant, rubbish and unused materials, and leaving the whole of the site of the works in a clean and tidy state at completion to the satisfaction of the Project Manager. He must also allow for removing all rubbish and dirt from the site as it accumulates during the performance of the Contract. | ITEM | | | |
| **37** | **DEDUCTION FROM MONEY DUE TO THE CONTRACTOR** | | | | |
| B | The Project Manager shall be entitled to deduct any monies which the Contractor shall be liable to pay under the Contract to the Employer from any sum which may become payable to the Contractor hereunder and the Project Manager in issuing his Certificates as provided in Clause 34 of the Schedule of Conditions shall have regard to any sum so chargeable to the Contractor. Provided always that this provision shall not affect any other remedy by action at law or otherwise to which the Employer may be entitled for the recovery of such monies. | ITEM | | | |
| **38** | **WORKS TO BE DELIVERED UP CLEAN** | | | | |
| C | On completion of the Contract, the site and the works shall be cleared of all plant, scaffolding, rubbish and unused materials and shall be delivered up clean and in perfect condition in every respect to the satisfaction of the Project Manager. Particular attention is to be paid to leaving all windows and floors clean and removing all paint and cement stains. | ITEM | | | |
| **39** | **APPROVAL OF PROJECT MANAGER FOR EMPLOYMENT OF SUB CONTRACTORS** | | | | |
| D | The Contractor will be required to obtain the approval of the Project Manager in writing before Employing any of his own Sub Contractors for any portion of the work. | ITEM | | | |
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| **40** | **DISPOSAL OF WATER** | | | | |
| A | Allow for keeping the excavations and works free from all water, including spring and running water, by pumping or other means as required. | ITEM | | | |
| **41** | **WHITE ANTS** | | | | |
| B | Allow for destroying any white ants' nests found in the vicinity of the buildings, destroying Queen Ants, depositing cyanide lumps in holes and tunnels and filling with hardcore and murram well rammed and sealed. | ITEM | | | |
| **42** | **SECURITIES** | | | | |
| C | Allow for the provision of Securities | ITEM | | | |
| **43** | **INSURANCE** | | | | |
| D | Allow for the provision of Insurance for the works, plant and material | ITEM | | | |
| E | Ditto for Equipment | ITEM | | | |
| F | Ditto for other property | ITEM | | | |
| G | Ditto but against accidents or personal injury or death to workmen and third party. | ITEM | | | |
| **44** | **OPERATION EXPENSES** | | | | |
| H | Allow a Two million Shillings (Kshs. 2,000,000) for miscellenious expenses comprising stationery, electronics, equipment, office consumables including photograph processing and other charges where directed by the Project Manager and according to the appendix as provided in the tender. | ITEM | | | |
| I | Allow for Contractor's Profit | % | | | |
| J | Allow for Contractor's Overheads | SUM | | | |
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| **45** | **SAMPLES** | | | | |
| A | Note: - The Contractor shall allow for furnishing at his own cost any samples of materials or workmanship that may be called for by the Architect for his approval and any further samples in the case of rejection until such samples are approved by the Architect and the Architect may reject any materials or workmanship not in his opinion in accordance with the approved samples. The Architect shall make such tests of the samples or any materials as he may at his discretion deem desirable, but such tests shall be made at the expense of the Employer and not of the Contractor, unless the result causes the Architect to reject any samples or materials as not being in his opinion in accordance with the specified requirements, in which case the Contractor shall pay for such tests and the cost thereof shall be recovered from the Contractor by the Architect by deduction from the Contract Sum. | | | | |
| **46** | **NECESSARY TESTS** | | | | |
| B | Allow for all expenses in connection with the testing of materials as specified hereunder including the supply and preparation of materials to be tested, the cost of materials and their packing and conveyance to the nearest approved Testing Laboratory, laboratory charges, etc. | ITEM | | | |
| | The following items of tests will be measured according to the number of tests actually called for by the Architect but unsuccessful tests will not be included in the remeasurement. | | | | |
| | Allow for executing the following tests as detailed in the Appendices to these Bills of Quantities (PROVISIONAL QUANTITIES) | **QTY (NO.)** | **RATE** | | |
| | Water Test (4.5 litres) | 20 | | | |
| | Sand Test (0.028m3) | 20 | | | |
| | Aggregate Test (0.028m3) | 20 | | | |
| | Reinforcement test (1m of mild steel rod or high tensile steel bar of various sizes) | 30 | | | |
| | Concrete Test (One test comprising three cubes as described hereinafter) to specification | 30 | | | |
| | Testing of concrete or stone blocks various strengths in accordance with British Standard Specification (one test comprising six blocks) | 30 | | | |
| | The Contractor shall allow for all other testing of materials, apart from the above, required by the Appendices of the Bills of Quantities and he shall be responsible for all expenses incurred in completing such tests including costs of materials and labour, equipment, transport and charges of testing authority, etc. | ITEM | | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 1 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| **47** | **SITE PHOTOGRAPHS** | | | | |
| A | The Contractor shall take and hand over to the Architect at approved intervals site progress photographs in a format to be directed by the Architect. | ITEM | | | |
| **48** | **HOISTING** | | | | |
| B | The Contractor shall allow for all costs related to hoisting his and his Sub Contractor's materials for fixing at any level within the limits shown on the drawings or included in the general description of the works. | ITEM | | | |
| **49** | **SCAFFOLDING** | | | | |
| C | The Contractor shall allow for providing, erecting and dismantling all general scaffolding required for the works. The Contractor must allow here or in his rates for providing all special scaffolding required by his Sub Contractors, other than Nominated Sub Contractors carrying out works for which P.C. Sums are included in these Bills. Where the Contractor is required to provide special scaffolding for these latter Sub Contractors, an item is included for pricing under the relevant P.C. Sum. | ITEM | 1 | | |
| **50** | **CROSSINGS AND TEMPORARY ROADS** | | | | |
| D | The Contractor must allow for providing, forming and maintaining necessary crossings on to the site and temporary roads as may be required by the Architect and removing same at completion and making good damaged or disturbed surfaces as directed by and to the approval of the Architect. | ITEM | | | |
| E | Allow a Prime Cost Sum of Kshs. 250,000/= for materials testing. | ITEM | 1 | | |
| F | Include percentage of P.C Sum in item 1.03 for contractor's overheads and profit. | % | | | |
| G | Provide with approved driver, fuel, service and maintain, insure 1No. 11 seater van (odometer reading 0 - 60,000km) vehicle, minimum engine capacity 2500 cc for exclusive use of the PM and site staff inclusive of the first 5,000 km per vehicle month to PM approval. Vehicle to revert back to the contractor at the end of contract Defects liability period. | Veh. Month | 24 | | |
| H | Extra over mileage over an average of 5,000km per vehicle month inclusive of of all fuels, lubricants, servicing and maintenance insurances and driver. | KM | 15,000 | | |
| I | Provide automatic level machine complete with levelling staff and levelling bubble for exclusive use by the Engineer's representative for the entire duration of the contract as per special specifications. | Months | 24 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 1 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| **51** | **WORK TO BE OPENED UP AT THE REQUEST OF THE ARCHITECT** | | | | |
| A | The Contractor shall, at the request of the Architect within such time as the Architect shall name, open for inspection any work covered up, and, should the Contractor refuse or neglect to comply with such request, the Architect may employ workmen other than those employed by the Contractor to open up the same.<br><br>If the said work has been covered up in contravention of the Architect's instructions, or if, on being opened up, it be found not in accordance with the drawings or Bills of Quantities or the instructions of the Architect, the expenses of opening and covering it up again whether done by the Contractor or by the Architect, shall be borne by and be recoverable from the Contractor or may be deducted from any monies due to the Contractor. If the work has not been covered up in contravention of such instructions and be found in accordance with the said drawings and Bills of Quantities, then the expenses aforesaid shall be borne by the Employer, and be added to the Contract Sum; provided always that, in the case of foundations or of any other urgent work so opened up and requiring immediate attention, the Architect shall, within a reasonable time after the work has been opened, make or cause to be made the inspection thereof, and at the expiration of such time, if such inspection shall not have been made the Contractor may cover up the same and shall not be required to open it up again for inspection except at the expense of the Employer. | ITEM | | | |
| **52** | **MAINTENANCE MANUALS** | | | | |
| B | At the start of the defects liability period, the Contractor shall hand over to the Engineer three full sets of maintenance and operations manuals for the plant and equipment as installed. These manuals shall be fully illustrated and written in English. | ITEM | | | |
| **53** | **ENGINEERING STAFF** | | | | |
| C | Provide provisional sum of Two million (Kshs. 2,000,000/-) site staff to the approval of the Project Manager in accordance to the specification schedule (Appendix No. 1) including overtime. Items to include costs associated with employment including compliance with all written laws and associated benefit whose employment shall be determined by the Employer. | ITEM | | | |
| **55** | **LAPTOPS** | | | | |
| D | Purchse and deliver 6 No. laptops to the approval of the Project Manager in accordance specification and approval. | ITEM | | | |
| **56** | **CAPACITY BUILDING** | | | | |
| E | Allow a Sum of Ksh. 2.5 million for capacity building of skills for the Project team to specification with and including per diem, transport and training expenses. | ITEM | | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 1 |
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| ITEM No. | D E S C R I P T I O N | UNIT | QUANTITY | RATE | AMOUNT KShs cts |

## COLLECTION

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| TOTAL CARRIED TO GRAND SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| | **PASSENGER TERMINAL** | | | | |
| | **BASEMENT** | | | | |
| | **SUBSTRUCTURES** | | | | |
| | **(ALL PROVISIONAL)** | | | | |
| **01** | **SITE CLEARANCE** | | | | |
| A | Clear site of all shrubs, thicket & undergrowth including grubbing up of roots and dispose off as directed by the Engineer | SM | 760 | | |
| **02** | **EXCAVATION** | | | | |
| | **Foundation excavation** | | | | |
| B | Excavate over site to remove top vegetable soil and dispose off site as directed by the Architect | SM | 760 | | |
| C | Bulk excavation in coral and soil and cart away resulting debris n.e. 1.5m deep. | CM | 2,220 | | |
| D | Excavate in coral and soil for strip foundation n.e 1.5 m deep starting from stripped level | CM | 250 | | |
| E | Ditto but 1.5 - 3.0 m deep. | CM | 250 | | |
| F | Excavate for column bases in coral and soil n.e 1.5 m deep starting from stripped level | CM | 155 | | |
| G | Ditto but 1.5 - 3.0 m deep. | CM | 155 | | |
| | **Rock** | | | | |
| H | Allow for excavation in coral rock of any class | CM | 300 | | |
| | **Filling and carting away** | | | | |
| I | Return, fill and ram selected excavated material around excavations and restore tarmac with and including sub-base and base. | CM | 440 | | |
| J | Load and cart away surplus excavated material as directed by the Engineer | CM | 370 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| **03** | **CONCRETE IN SUBSTRUCTURE** | | | | |
| A | Concrete 1:4:8 blinding under column bases | SM | 105 | | |
| B | Concrete 1:4:8 blinding under strip foundation | SM | 165 | | |
| | **Concrete mix 1:2:4** | | | | |
| C | In strip foundation incl thicknesing | CM | 70 | | |
| D | In concrete base | CM | 65 | | |
| E | In concrete column | CM | 21 | | |
| F | In 150 mm thick floor slab | SM | 720 | | |
| G | In 150 mm thick ramps | SM | 50 | | |
| | Cement:Sand (1:4) | | | | |
| H | 19 mm thick render on sides of slab | LM | 160 | | |
| **04** | **SAWN FORMWORK** | | | | |
| I | To vertical edges of floor slab 75 - 150 mm high | LM | 160 | | |
| J | To vertical edges of ramp 75 - 150 mm high | LM | 26 | | |
| K | To vertical sides of strip footing | SM | 195 | | |
| L | To vertical sides of column bases | SM | 110 | | |
| M | To vertical sides of column | SM | 125 | | |
| N | Ditto but curved column sides | SM | 40 | | |
| **05** | **HARDCORE** | | | | |
| O | 300 mm thick approved hardcore bed, handpacked, well watered & well compacted | SM | 720 | | |
| P | 50 mm thick murrame dust blinding on hardcore bed | SM | 720 | | |
| Q | Apply 'Termidor' or any other equal and approved anti-termite chemical treatment on hardcore applied as per manufacturer's printed instructions. | SM | 720 | | |
| **06** | **DPM AND DPC** | | | | |
| R | 500 gauge diothene polythene damp proof membrane laid with 200 end laps under floor slab, on hardcore to the satisfaction of the consultant. | SM | 720 | | |
| S | 200 mm wide approved quality 3-ply bituminous felt damp proof course under walls | LM | 260 | | |
| T | Ditto but 150mm wide | LM | 30 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| **07** | **REINFORCEMENT** | | | | |
| A | Mesh fabric Ref. BRC. A142 laid to structural details. | SM | 770 | | |
| | Supply and fix the following high tensile square twisted reinforcement bars to B.S. 4461 including all the necessary cutting, bending and binding wire | | | | |
| B | Assorted sizes | Kg | 9,780 | | |
| **08** | **SUBSTRUCTURE WALLING** | | | | |
| C | 200 mm thick natural stone walling rough chisel dressed in cement/sand (1:3) mortar. | SM | 730 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| ITEM No. | D E S C R I P T I O N | UNIT | QUANTITY | RATE | AMOUNT KShs cts |

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| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| | **SUPERSTRUCTURE** | | | | |
| **09** | **GROUND FLOOR WALLING** | | | | |
| A | 200 mm thick fine chisel dressed stone walling cement/sand (1:3) mortar including hoop iron at alternate courses with rounded keyed-in joints as directed by the Architect. | SM | 520 | | |
| B | Ditto but 150mm thick walling | SM | 30 | | |
| **TOTAL WALLING CARRIED TO BILL SUMMARY** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| **09** | **CONCRETE WORK** | | | | |
| | **Vibrated Reinforced Concrete class 25** | | | | |
| A | In 175 mm thick waist to staircase | SM | 18 | | |
| B | Ditto but in 175 mm thick landing | SM | 8 | | |
| C | In beams | CM | 50 | | |
| D | In Columns | CM | 30 | | |
| E | In steps | CM | 2 | | |
| F | 175 mm thick suspended slab | SM | 760 | | |
| **10** | **SAWN FORMWORK** | | | | |
| G | To sloping soffites of staircases | SM | 18 | | |
| H | Sides and Soffittes of beams | SM | 470 | | |
| I | Sides of columns | SM | 175 | | |
| J | Ditto but curved | SM | 50 | | |
| K | Soffittes of suspended slab & landing | SM | 760 | | |
| L | Vertical edges of slab 75 - 150 mm high | LM | 160 | | |
| M | Ditto but risers 150 - 225 mm high | LM | 60 | | |
| **11** | **REINFORCEMENT** | | | | |
| | Supply and fix the following high tensile ribbed bars reinforcement bars to BS 4449:2005 including all the necessary cutting, hooking, bending, cutting spacers, binding wire and supporting all in position | | | | |
| N | Assorted sizes | Kg | 19,550 | | |
| **TOTAL CONCRETE WORKS CARRIED FORWARD TO BILL SUMMARY** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| **12** | **EXTERNAL WALL FINISHES** | | | | |
| A | 50 mm thick machine/hand-cut coral stone facing : on walls and corners as directed by the Project Architect/Manager : in cement/sand (1:4) mortar : pointed in tinted cement mortar to match, with and including all necessary anchoring support and finish to approval. | SM | 917 | | |
| | Cement and Sand (1:5) Screed | | | | |
| B | 18 mm thick steel-floated render to new masonry walling to receive paint (m/s). | SM | 415 | | |
| | PAINT | | | | |
| C | Prepare and apply "Wall master" or equal approved cement and polymer based wall coating with and including anti-algae coating according to Manufacturer's instructions and Project Architect's specifications and approval. | SM | 415 | | |
| **TOTAL WALL FINISHES CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| | **EXTERNAL RAMPS AND STEPS** | | | | |
| | **(ALL PROVISIONAL)** | | | | |
| **26** | **RAMPS (1 No.)** | | | | |
| | EXCAVATION | | | | |
| A | Allow for mass excavation to remove coral rock and soil not exceeding 1.50 metres from ground level and cart away from site from site excavated material Disposal as directed by the Project Manager | CM | 15 | | |
| B | Return, fill and ram selected imported murram/approved material around excavations | CM | 6 | | |
| C | Load and cart away surplus excavated material as directed by the Consultant | CM | 9 | | |
| | CONCRETE WORK | | | | |
| D | 50 mm thick mass concrete blinding mix 1:4:8 under strip footing | SM | 9 | | |
| E | Vibrated Reinforced Concrete in strip footing Mix 1:2:4 | CM | 2 | | |
| F | Vibrated Reinforced concrete mix 1:2:4 in 200 mm thick slab | SM | 15 | | |
| | SAWN FORMWORK | | | | |
| G | To vertical sides of strip footing | SM | 8 | | |
| H | To vertical edges of floor slab 150 - 225 mm high | LM | 28 | | |
| | WALLING | | | | |
| I | 200 mm thick natural stone walling rough chisel dressed in cement/sand (1:3) mortar | SM | 16 | | |
| | HARDCORE | | | | |
| J | Approved hardcore bed, handpacked well watered and well compacted in layers 250 mm thick | CM | 6 | | |
| K | 200 mm thick crushes run base on hardcore bed (m/s), well compacted to 95% mdd | SM | 15 | | |
| L | 50 mm thick stone dust blinding on hardcore bed | SM | 15 | | |
| M | Apply 'Termidor' or any other equal and approved anti-termite chemical treatment on hardcore | SM | 15 | | |
| N | 1000g polythene damp proof membrane laid with 300 end and side laps under floor slab, on hardcore to the satisfaction of the Engineer | SM | 15 | | |
| | REINFORCEMENT | | | | |
| O | Mesh fabric Ref. BRC. A142 (weighing 2.2 kg/m2) laid (measured net - no allowance made for laps) | SM | 15 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| | Supply and fix the following high tensile square twisted reinforcement bars to B.S. 4461 including all the necessary cutting, hooking, bending, cutting spacers, binding wire and supporting all in position | | | | |
| A | Assorted sizes | Kg | 60 | | |
| | FINISHES | | | | |
| B | 12 mm thick, 200 mm wide anti-slip granite slabs laid on screed backing (m/s) | SM | 15 | | |
| C | Extra over granite for anti-slip inserts or grooving to granite slabs | LM | 50 | | |
| D | 18 mm thick cement and sand (1:5) screed backing floated to receive granite | SM | 15 | | |
| E | 10 mm thick, 200 x 400 mm granite tiles laid on screed backing (m/s) on masonry walling (m/s) | SM | 6 | | |
| F | 10 mm thick cement and sand (1:5) screed backing floated to receive granite | SM | 6 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| ITEM No. | D E S C R I P T I O N | UNIT | QUANTITY | RATE | AMOUNT KShs cts |

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| TOTAL EXTERNAL RAMPS AND STEPS CARRIED TO BILL SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| | **EXTERNAL WORKS** | | | | |
| | **(ALL PROVISIONAL)** | | | | |
| **21** | **PAVING SLABS** | | | | |
| A | Grade surface of fillion to falls and crossfalls including rolling and compacting to B.S. 95%MDD. | SM | 2,500 | | |
| B | Approved imported murram laid in 150mm thick layers blinded with quarry dust on each layer and compacted to 100% BS compaction to Civil Engineer's details. | CM | 2,500 | | |
| C | 300mm bed of approved handpacked stone and compacted stone base well-rammed and compacted to Civil Engineer's details and specification. | SM | 2,500 | | |
| D | Approved weedkiller under paving | SM | 2,500 | | |
| E | 50mm sand bed blinding spread and well compacted to falls and crossfals and cambers and finished to receive precast concrete block paving (measured separately). | SM | 2,500 | | |
| F | 60mm thick trihex coloured cabro on 50 mm thick sand bed (m/s). | SM | 2,500 | | |
| G | 250 x 125 mm precast concrete kerb and channel to paving slabs laid on 20mm thick mortar bed, 500 x 100mm class 15/20 concrete base, 100 x 210mm class 15/20 concrete haunch including excavation and disposal to Civil Engineer's details. | LM | 500 | | |
| | Landscaping | | | | |
| H | Supply, plant and maintain assorted hibiscus flowers on defined flowerbeds with and including approriate membrane, soil, fertelizers, treatment and watering as necessary to approval (Approx. 1000SM) | SM | 250 | | |
| I | Ditto but seedlings of 'Adonidia Merrilli - royal palm tree to be planted on both sides of driveway. | NO | 150 | | |
| **TOTAL PAVING SLABS CARRIED TO BILL SUMMARY SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| | **COVERED WALKWAY CANOPY** | | | | |
| | **Footings Excavation** | | | | |
| A | Excavate for column footing not exceeding 1.50 metres starting from existing ground level ,Return, fill and ram selected excavated material around excavations and cart away surplus material from site | CM | 130 | | |
| | **Concrete Works** | | | | |
| B | 50 mm thick 1:4: 8 blinding under column footing | SM | 87 | | |
| C | Concrete mix 1:1 1/2:3 in column footing | CM | 26 | | |
| D | Vibrated Reinforced Concrete 1:1 1/2:3 in column stubs | CM | 28 | | |
| | **Formwork** | | | | |
| E | Sawn formwork to sides of column footing | SM | 175 | | |
| F | To vertical sides of columns | SM | 270 | | |
| | **REINFORCEMENT** | | | | |
| | Supply and fix the following high tensile RIBBED (deformed) reinforcement bars to K.S. ISO 6935 - 2:2007 including all the necessary cutting, hooking, bending, cutting spacers, binding wire and supporting all in position | | | | |
| G | Assorted Sizes 16 ,12,8mm | Kg | 5400 | | |
| | **Paving slabs** | | | | |
| H | Carefully remove existing PC slabs and bed; ac concrete, channels, excavate 150 mm average depth as directed dispose off arising debris as directed | SM | 290 | | |
| I | 100 mm thick murram sub-base well compacted and watered | SM | 290 | | |
| J | 600 x 600 x 50 mm precast concrete paving slabs on and including 50mm sand bed blinding spread and well compacted to falls and cross falls and cambers | SM | 290 | | |
| K | 125 x 125 mm precast concrete Channel to paving slabs including all the necessary excavations and concrete haunching | LM | 720 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| | **STEEL WORKS AND COVERING** | | | | |
| | STRUCTURAL STEELWORK TO BS 449 | | | | |
| | The following in framed structural steel framework, including all necessary welds, site welds, cleats, plates and sundry fixings, priming with red graphite primer painting of exposed steelwork with 2 coats gloss oil paint delivered to site and fixing in position approximately 2.5 metres | | | | |
| A | 100 x 100 x 4mm RHS steel column welded to base plate (measured separately ) | KG | 6200 | | |
| B | 250 x 250 x 10mm Thick base plate four times drilled for 16mm thick diameter bolts (measured separately). | NO | 245 | | |
| C | 16mm grade 4.6 anchor bolts 450mm long | NO | 965 | | |
| D | 100x100x4mm RHS steel rafter connected to column (measured separately ) | KG | 8200 | | |
| E | 200 x 100 x 10mm Thick end plate ten times drilled for 16mm thick connection bolts (MS) | NO | 970 | | |
| F | 50x25 x3mm RHS guardrail welded to columns | KG | 4200 | | |
| G | 50 x 25 x 3mm RHS purlin/tie beam welded and bolted to columns/rafters | KG | 6830 | | |
| H | Allow 5% for rafter cleats, fish plates & connetion bolts generally | KG | 1270 | | |
| | **ROOF SHEETING** | | | | |
| | Gauge 24 IT5 Profile Aluzinc Prepainted sheets manufactured by Mabati Rolling Mills or equal and approved | | | | |
| I | Roofing sheets including self driling screws fixed to metal purlins (MS) with and including self drilling screws washers and nuts | SM | 2200 | | |
| J | 3mm thick Galvanized MS gutter 610mm girth, including fixing, welding, brackets and downpipe openings as required | LM | 700 | | |
| K | UPVC downpipe including fixing and extension of existing storm drainage points where applicable | LM | 252 | | |
| L | 570mm girth 26 gauge Fascia & berge board fascia including necessary framework support | LM | 715 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| | **ELECTRICAL WORKS** | | | | |
| A | Supply and install four feet twin ip65 flourescent fittings as luminarc or approved equivalent | NO | 125 | | |
| B | Supply and install 25mm diameter electrical metal conduits complete with couplers, saddles and 320pieces junction boxes with cover | LM | 750 | | |
| C | Supply and install 32A PVC strip connectors | NO | 500 | | |
| D | Supply and install 3core 4mmsq flexible pvc cable | LM | 100 | | |
| E | Supply and install 3core 1.5mmsq flexible pvc cable | LM | 350 | | |
| F | Excavate trench measuring 300x600mm, lay cable, backfill and make good affected areas | LM | 25 | | |
| G | Carefully remove pavement slabs, excavate trench measuring 300x600mm lay cable, backfill, reinstate slab and make good the affected area | LM | 15 | | |
| H | Supply and install 32AMCBs | NO | 10 | | |
| I | Supply and install 2.5mmsq single core cable, red, black and green each 1700meters | LM | 2550 | | |
| J | Allow for removal and relocation of existing street light complete with all necessary wiring,accessories and civil works | No | 1 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| ITEM No. | D E S C R I P T I O N | UNIT | QUANTITY | RATE | AMOUNT KShs cts |

# COLLECTION SHEET

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| TOTAL COVERED WALKWAY CARRIED TO BILL SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| **22** | **DRIVEWAY AND PARKING** | | | | |
| A | Clear site of all shrubs, thicket and debris and any other dirt including grubbing up of roots and cart away from site as directed by Project Manager. | SM | 9,750 | | |
| B | Excavate oversite to remove vegetable soil and dispose off site as directed by the Project Manager. | SM | 9,750 | | |
| C | Bulk excavation in coral and soil to spoil and shaping sides of excavations n.e. 1.5m deep | SM | 9,750 | | |
| D | 500mm thick Rockfill compacted in layers of 300mm bottom boulders and 200mm top regulating layer to Approval of Civil Engineer | CM | 4,875 | | |
| E | Provide and place approved subgrade material compacted to 100%MDD layers of 150mm to Satisfaction of Civil Engineer. | SM | 9,750 | | |
| F | 50mm sand bed blinding spread and well compacted to falls and crossfals and cambers and finished to receive precast concrete block paving (measured separately). | SM | 9,750 | | |
| G | Approved 150mm thick well-compacted hand-packed stone base. | SM | 9,750 | | |
| H | 80mm thick heavy duty concrete paving blocks (minimum strength 49N/mm2) roller compacted on and including 50mm thick sand bed. | SM | 8,700 | | |
| I | Ditto but coloured cabro | SM | 1,950 | | |
| J | 250 x 125 mm precast concrete kerb and channel to paving slabs laid on 20mm thick mortar bed, 500 x 100mm class 15/20 concrete base, 100 x 210mm class 15/20 concrete haunch including excavation and disposal to Civil Engineer's details. | LM | 2,000 | | |
| **TOTAL DRIVEWAY AND PARKING CARRIED TO BILL SUMMARY SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| **23** | **STORMWATER DRAINAGE** | | | | |
| | **Open Drain** | | | | |
| A | Excavate for 'v' shaped in section open drain in coral and soil n.e. 1.5m deep and average 1500mm wide inclusive of trimming embarkments to slope and cart away. | LM | 1,000 | | |
| | **Precast concrete (Class 20)** | | | | |
| B | Stormwater channel comprising of 600mm long invert blocks size 450 x 225mm high with two splayed and hollowed top edges and half round sinking on top of 300mm wide x 100mm deep laid on and including 100mm thick concrete haunching finished fair and reinforced as necessary for handling, jointed and pointed in cement and sand (1:3). | SM | 2,500 | | |
| C | 75mm thick side slabs size 600 x 225mm bedded, jointed and pointed in cement mortar (1:3) laid sloping on and including 100mm thick compacted murram. | SM | 2,500 | | |
| D | Provide and place stone-pitching including jointing with mortar and preparation of base material including all necessary compaction and grading as directed by Civil Engineer. | CM | 1,000 | | |
| E | Supply, plant and maintain grass cover as 'Bermuda Grass (Cynodon dactylon)' or equal approved including fertiliser and red soil to detail and approval of Project Manager. | SM | 450 | | |
| **TOTAL STORMWATER DRAINAGE CARRIED TO BILL SUMMARY SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QUANTITY** | **RATE** | **AMOUNT KShs cts** |
| **23** | **FENCING** | | | | |
| | **Straining Wire** | | | | |
| A | High tensile galvanised straining wire 12 1/2 G through concrete (m/s) including hook bolts and boring through timber in 5 no. lines. | LM | 2,000 | | |
| | **Barbed Wire** | | | | |
| B | High tensile galvanised barbed wire 12 1/2 G through concrete (m/s) including hook bolts and boring through timber in 4 no. lines | LM | 1,200 | | |
| | **Chainlink Fence** | | | | |
| C | Supply and fix (overall height 3600mm) heavy duty PVC coated chainlink; guage 12; onto and including 150 x 150mm precast concrete posts including all necessary concrete bracings; embedding in 1000mm deep x 500mm wide class 10 concrete below ground level; fastening with 5 no. galvanised line wire (m/s); threaded through and including mesh and hook bolts; secured by binding wire; all as per detailed drawings including all necessary excavation, return, fill and ram, surplus cart away | LM | 350 | | |
| | **GATE** | | | | |
| | Mild steel bars section and plates finished with one case of red oxide primer welded and ground joints (steel section in heavy guage/ duty) | | | | |
| D | 6000 x 3000mm high gate covered with laser cut CNC G14 Ms plate. Side anchored to 2No. 450 x 450mm RC columns of 3m height; comprising 75 x 50 x 6mm RHS framing all round and 50 x 50 x 6mm RHS infill bars and Guage 12 Wire mesh welded on top of gate surface with 4 lines of barbed wire to the top to detail | NO | 1 | | |
| E | Ditto but pedestrian gate size 1200 x 3000mm high | NO | 1 | | |
| F | Prepare and apply touch-up primer and 3 coats of gloss of gloss oil paint on metal surfaces of grille gates externally. | SM | 30 | | |
| **TOTAL FENCING CARRIED TO BILL SUMMARY SHEET** | | | | | |

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| ITEM No. | D E S C R I P T I O N | UNIT | QUANTITY | RATE | AMOUNT KShs cts |
| | **SUMMARY SHEET** | | | | |
| | PAVING SLABS | | | | |
| | COVERED WALKWAY | | | | |
| | DRIVEWAY AND PARKING | | | | |
| | STORMWATER DRAINAGE | | | | |
| | FENCING | | | | |
| TOTAL EXTERNAL WORKS CARRIED TO BILL SUMMARY | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
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| ITEM No. | D E S C R I P T I O N | UNIT | QUANTITY | RATE | AMOUNT KShs cts |
| | **SUMMARY SHEET** | | | | |
| | SUBSTRUCTURES | | | | |
| | WALLING | | | | |
| | CONCRETE WORK | | | | |
| | WALL FINISHES | | | | |
| | EXTERNAL RAMPS & STEPS | | | | |
| | EXTERNAL WORKS | | | | |
| TOTAL CARRIED TO GRAND SUMMARY | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **PASSENGER TERMINAL** | | | | |
| | **GROUND FLOOR** | | | | |
| | **SUBSTRUCTURES** | | | | |
| | **(ALL PROVISIONAL)** | | | | |
| **01** | **SITE CLEARANCE** | | | | |
| A | Clear site of all shrubs, thicket & undergrowth including grubbing up of roots and dispose off as directed by the Engineer | SM | 1,560 | | |
| **02** | **EXCAVATION** | | | | |
| | **Foundation excavation** | | | | |
| B | Excavate over site to remove top vegetable soil and dispose off site as directed by the Architect | SM | 1,560 | | |
| C | Excavate in coral and soil for strip foundation n.e 1.5 m deep starting from stripped level | CM | 680 | | |
| D | Ditto but 1.5 - 3.0 m deep. | CM | 680 | | |
| E | Excavate in coral and soil for column bases n.e 1.5 m deep starting from stripped level | CM | 80 | | |
| F | Ditto but 1.5 - 3.0 m deep. | CM | 80 | | |
| | **Rock** | | | | |
| G | Allow for excavation in rock of any class | CM | 150 | | |
| | **Filling and carting away** | | | | |
| H | Return, fill and ram selected excavated material around excavations and restore tarmac with and including sub-base and base. | CM | 520 | | |
| I | Load and cart away surplus excavated material as directed by the Engineer | CM | 1,000 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **03** | **CONCRETE IN SUBSTRUCTURE** | | | | |
| A | Concrete 1:4:8 blinding under column bases | SM | 85 | | |
| B | Concrete 1:4:8 blinding under strip foundation | SM | 451 | | |
| | **Concrete mix 1:2:4** | | | | |
| C | In strip foundation incl thicknesing | CM | 140 | | |
| D | In concrete base | CM | 40 | | |
| E | In concrete column | CM | 30 | | |
| F | In 150 mm thick floor slab | SM | 1,560 | | |
| G | In 150 mm thick ramps | SM | 100 | | |
| | Cement:Sand (1:4) | | | | |
| H | 19 mm thick render on sides of slab | LM | 190 | | |
| **04** | **SAWN FORMWORK** | | | | |
| I | To vertical edges of floor slab 75 - 150 mm high | LM | 190 | | |
| J | To vertical edges of ramp 75 - 150 mm high | LM | 80 | | |
| K | To vertical sides of strip footing | SM | 195 | | |
| L | To vertical sides of column bases | SM | 100 | | |
| M | To vertical sides of column | SM | 180 | | |
| N | Ditto but curved column sides | SM | 65 | | |
| **05** | **HARDCORE** | | | | |
| O | 300 mm thick approved hardcore bed, handpacked, well watered & well compacted | SM | 1,560 | | |
| P | 50 mm thick murrame dust blinding on hardcore bed | SM | 1,560 | | |
| Q | Apply 'Termidor' or any other equal and approved anti-termite chemical treatment on hardcore applied as per manufacturer's printed instructions. | SM | 1,560 | | |
| **06** | **DPM AND DPC** | | | | |
| R | 500 gauge diothene polythene damp proof membrane laid with 200 end laps under floor slab, on hardcore to the satisfaction of the consultant. | SM | 1,560 | | |
| S | 200 mm wide approved quality 3-ply bituminous felt damp proof course under walls | LM | 620 | | |
| T | Ditto but 150mm wide | LM | 155 | | |
| U | Ditto but 100mm wide | LM | 80 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **07** | **REINFORCEMENT** | | | | |
| A | Mesh fabric Ref. BRC. A142 laid to structural details. | SM | 1,660 | | |
| | Supply and fix the following high tensile square twisted reinforcement bars to B.S. 4461 including all the necessary cutting, bending and binding wire | | | | |
| B | Assorted sizes | Kg | 13,700 | | |
| **08** | **SUBSTRUCTURE WALLING** | | | | |
| C | 200 mm thick natural stone walling rough chisel dressed in cement/sand (1:3) mortar. | SM | 730 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
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| TOTAL SUB-STRUCTURES CARRIED TO BILL SUMMARY | |

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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **SUPERSTRUCTURE** | | | | |
| **09** | **GROUND FLOOR WALLING** | | | | |
| A | 200 mm thick fine chisel dressed stone walling cement/sand (1:3) mortar including hoop iron at alternate courses with rounded keyed-in joints as directed by the Architect. | SM | 1,255 | | |
| B | Ditto but 150mm thick walling | SM | 155 | | |
| C | Ditto but 100mm thick walling | SM | 80 | | |
| **TOTAL WALLING CARRIED TO BILL SUMMARY** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **09** | **CONCRETE WORK** | | | | |
| | **Vibrated Reinforced Concrete class 25** | | | | |
| A | In 175mm thick waist to staircase | SM | 36 | | |
| B | Ditto but in 175 mm thick landing | SM | 16 | | |
| C | In beams | CM | 145 | | |
| D | In Columns | CM | 45 | | |
| E | In steps | CM | 4 | | |
| F | 175 mm thick suspended slab | SM | 920 | | |
| **10** | **SAWN FORMWORK** | | | | |
| G | To sloping soffites of staircases | SM | 36 | | |
| H | Sides and Soffittes of beams | SM | 1,580 | | |
| I | Sides of columns | SM | 320 | | |
| J | Ditto but curved | SM | 70 | | |
| K | Soffittes of suspended slab & landing | SM | 920 | | |
| L | Vertical edges of slab 75 - 150 mm high | LM | 160 | | |
| M | Ditto but risers 150 - 225 mm high | LM | 120 | | |
| **11** | **REINFORCEMENT** | | | | |
| | Supply and fix the following high tensile ribbed bars reinforcement bars to BS 4449:2005 including all the necessary cutting, hooking, bending, cutting spacers, binding wire and supporting all in position | | | | |
| N | Assorted sizes | Kg | 37,500 | | |
| **TOTAL CONCRETE WORKS CARRIED FORWARD TO BILL SUMMARY** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **FINISHES** | | | | |
| 11 | **FLOOR FINISHES;** | | | | |
| | GRANITO TILES | | | | |
| | Approved coloured non-slip floor tiles; matt laid to regular pattern; including bedding and jointing in "PEGACOL" tile adhesive or other equal and approved; grouting joints with "BENFER" or other equal and approved epoxy resin-based grout | | | | |
| A | Approved coloured high quality non-slip granito tiles size 600 x 300 x 10 mm fixed in cement on screed backing (m/s) | SM | 1,710 | | |
| B | 10 x 100 mm high skirting to match tiles | LM | 655 | | |
| | Epoxy floor finish | | | | |
| C | Approved 40mm thick cementitious self-levelling mortar based on hydraulic binder for abraision-resistant flooring as "ultratop system-terrazzo effect" or equal approved with an including - stain protection layer, Aggregate layer (Mapefloor 1910 + Natural Aggregates+ Ultratop + Ultratop stucco), Mapefloor 1910 layer and Primer layer (Primer SN + Quartz) to Manufacturer's instruction and approval. | SM | 50 | | |
| | NON-SLIP PORCELAIN/ GRANITO TILES | | | | |
| | Approved coloured non-slip porcelain/granito floor tiles; matt laid to regular pattern; including bedding and jointing in "PEGACOL" tile adhesive or other equal and approved; grouting joints with "BENFER" or other equal and approved epoxy resin-based grout | | | | |
| D | Approved coloured high quality non-slip tiles size 300 x 300 x 10 mm fixed in cement on screed backing (m/s) | SM | 172 | | |
| | Polished terrazzo paving | | | | |
| E | 45mm Thick two coat bed laid to falls on concrete (measured separately) with and including plastic dividing strips set flash with flooring; grind and polish to approval of Project Manager. | SM | 120 | | |
| F | 20 x 150mm Coved and rounded skirting. | LM | 130 | | |
| | Cement and Sand (1:5) Screed | | | | |
| G | 30 mm thick floated to receive granito floor finish (m/s) | SM | 1,710 | | |
| H | 30 mm thick floated to receive non-slip granito/porcelain tiles (m/s) | SM | 172 | | |
| I | 15 mm thick floated to receive terrazzo floor finish (m/s) | SM | 120 | | |
| J | 15 mm thick floated to carpet floor finish (m/s) | SM | 100 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | CARPET | | | | |
| A | Approved as "Wiltod" coloured 12 mm thick wool jute backed executive heavy-duty carpet fixed to steel trowelled screed backing (m/s) including blanket underlay, fixing clips and all other necessary fixing accessories. | SM | 90 | | |
| B | Ditto but high traffic carpet at path ways. | SM | 10 | | |
| C | Allow for metal strip at doors at doors. | SM | 20 | | |
| D | Allow for trimming and making good based of doors. | SM | 20 | | |
| E | 10 x 100 mm high wrot hardwood timber skirting fixed to wall including 15 x15 mm fixing grounds | SM | 50 | | |
| F | Sand prepare and apply three coats of polyuretahne lacquer on timber surfaces 75 - 150 mm high | SM | 50 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
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| TOTAL FLOOR FINISHES CARRIED FORWARD TO BILL COLLECTION SHEET | | |

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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **12** | **EXTERNAL WALL FINISHES** | | | | |
| | Cement and Sand (1:5) Screed | | | | |
| A | 18 mm thick steel-floated render to new masonry walling to receive paint (m/s). | SM | 270 | | |
| | PAINT | | | | |
| B | Prepare and apply "Wall master" or equal approved cement and polymer based wall coating with and including anti-algae coating according to Manufacturer's instructions and Project Architect's specifications and approval. | SM | 270 | | |
| **13** | **INTERNAL WALL FINISHES** | | | | |
| | Cement and Sand (1:5) Screed | | | | |
| C | 18 mm thick steel-floated plaster to new masonry walling to receive paint (m/s). | SM | 2,800 | | |
| | PAINT | | | | |
| D | Prepare and skim or smoothen uneven plaster in 'Crown Wallcare' or other equal and approved; prepare and apply external quality paint as "Permaplast" or equal approved weatherproof coating cream-finish super quality acrylic copolymer external paint according to Manufacturer's instructions and Project Architect's specifications and approval. | SM | 2,800 | | |
| | Wall tiles | | | | |
| | Approved coloured granito wall tiles matt; laid to regular pattern; including bedding and jointing in "PEGACOL" tile adhesive or other equal and approved; grouting joints with "BENFER" or other equal and approved epoxy resin-based grout | | | | |
| E | 600 x 300mm thick glazed granito wall tiles bedded in cement & sand (1:4) mortar on backing screed (m/s). | SM | 715 | | |
| F | Size 600 x 300 mm Border Tile as per Architectural Drawing | LM | 400 | | |
| G | Ditto Size 120 x 290 mm Stone Border Tile | LM | 400 | | |
| H | 12 mm thick cement & sand (1:4) backing screed to stonework to receive tiles | SM | 715 | | |
| **TOTAL WALL FINISHES CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **14** | **CEILING FINISHES** | | | | |
| | Cement and Sand (1:5) Screed | | | | |
| A | 18 mm thick steel-floated plaster to concrete ceiling surfaces to receive paint (m/s). | SM | 985 | | |
| B | 18 mm thick gypsum ceiling approved in colour fixed on and including approved Aluminium support to Manufacturer's instructions cypress brandering at 600 mm centres. | SM | 50 | | |
| | PAINT | | | | |
| C | Prepare and apply one coat of undercoat and two finishing coats of first quality grade Silk Vinyl plastic emulsion paint to ceiling surfaces. | SM | 1,035 | | |
| | Cornice | | | | |
| D | Approved 100 x 100mm gypsum/plaster of paris cornice | LM | 900 | | |
| E | Prepare and apply 3 coats of paint on general timber/ plaster of paris surfaces 100 - 200 mm girth. | LM | 900 | | |
| F | Prepare and apply primer to back of cornice only n.e. 100 mm girth | LM | 900 | | |
| **TOTAL CEILING FINISHES CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **OPENINGS** | | | | |
| **15** | **DOORS** | | | | |
| | Supply, assemble and fix the following purpose made solid panelled Mvule/Mahogany doors to detail and approval of Project Manager/ Architect. | | | | |
| A | 50mm thick Door size 1000 x 2450mm high to detail with and including approved glazing and top transome light (D3 & D7) | No. | 13 | | |
| B | 50 mm thick size 1500 x 2450 mm high overall timber mahogany/mvule TNG door with top transome light. | No. | 19 | | |
| C | Ditto but 900 x 2450mm high. | No. | 4 | | |
| D | Ditto but 800 x 2450mm high. | No. | 2 | | |
| | ALUMINIUM DOORS | | | | |
| | Supply and fix the following powder coated heavy duty Aluminium doors including 8mm thick tinted toughened/laminated branded glass, all necessary glazing beads, ironmongery including approved locks, fixing and hanging accessories as per schedule of doors | | | | |
| E | Size 900 x 2450mm high Aluminium framed door with top transome light. | No. | 34 | | |
| F | Size 1500 x 2400mm high double-sliding Aluminium door with top transome light with and including all sliding accessories and equipment. | No. | 1 | | |
| G | Size 1500 x 2400mm high double-swing Aluminium door with top transome light. | No. | 1 | | |
| | Rubber Blinds | | | | |
| H | Baggage carousel & Gravity rollers fixed rubber blinds to approval by Project Manager. | No. | 3 | | |
| | Timber frames | | | | |
| I | 150 x 50 mm wrot rebated hardwood door frame | LM | 280 | | |
| J | 25 x 25 mm quadrant beading plugged | LM | 280 | | |
| K | 38 x 25 architrave | LM | 280 | | |
| | Painting | | | | |
| L | Prepare and apply 3 coats of gloss oil paint on general timber surfaces | SM | 230 | | |
| M | Prepare and apply 3 coats of gloss oil paint on timber surfaces 100 - 200 mm girth | LM | 280 | | |
| N | Prime back of frame n.e 100mm girth | LM | 560 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **Iron mongery** | | | | |
| | Supply and fix the following ironmongery as per `Union' or other similar and approved catalogue to hardwood with screws to match to approval | | | | |
| A | 150 mm long pressed heavy duty stainless steel butt hinges. | Pairs | 114.0 | | |
| B | 5-lever mortice locks complete with handles and furniture; stainless steel finish. | No. | 55 | | |
| C | Bathroom locks with and including indicator bolt and thumb turn' | No. | 19 | | |
| D | Heavy duty stainless steel Magnetic-catch Door stops mounted on walling. | No. | 74 | | |
| E | Stainless steel D-handles 200mm long. | No. | 35 | | |
| F | Stainless steel Push/Pull plates | No. | 35 | | |
| G | Stainless steel signages with recessed print. | No. | 35 | | |
| H | Door signages to Architect's detail. | No. | 35 | | |
| I | Stainless steel Coat Hooks. | No. | 35 | | |
| J | Heavy duty door Union Door closer as 'N8825' comprising of Aluminium body, steel armrest, independent door speed and latch controls, adjustable back check, adjustable flatform arm finished in Satin stainless steel. | No. | 68 | | |
| | Dowels | | | | |
| K | 10 mm diameter, 200 mm long mild steel dowel one end morticed to wood the other grouted in concrete | No. | 76 | | |
| | Door cramps | | | | |
| L | 225 x 25 x 3 mm mild steel door cramps, once bent and twice holed, one end screwed to frame the other built in masonry wall | No. | 228 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## COLLECTION SHEET

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| | |
|---|---|
| TOTAL DOORS CARRIED TO BILL SUMMARY SHEET | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **20** | **WINDOWS** | | | | |
| | Supply and fix approved heavy duty powder-coated aluminium windows to approval, with and including 8mm thick laminated glass with 'solarvue' or equivalent sun-treatment to Arch, detail and approval. | | | | |
| A | Size 1200 x 900 mm high window - 2-sash sliding aluminium frame | No. | 2 | | |
| B | Size 1200 x 1950 mm high window - 2-sash sliding aluminium frame | No. | 15 | | |
| C | Ditto but 2100 x 900mm high - 4-sash top-hung aluminium frame | No. | 1 | | |
| D | Ditto but 4000 x 900mm high - 5-sash sliding aluminium frame | No. | 3 | | |
| E | Ditto but 5000 x 900mm high - 6 sash sliding aluminium frame | No. | 2 | | |
| F | Ditto but 900 x 4050mm high - 4-sash top hung aluminium frame | No. | 1 | | |
| G | Ditto but 900 x 5100mm high - 5 sash top hung aluminium frame | No. | 8 | | |
| H | Ditto but 600 x 5100mm high - 5 - sash top hung aluminium frame | No. | 6 | | |
| I | Ditto but 600 x 4050mm high - 4-sash top hung aluminium frame | No. | 2 | | |
| J | Ditto but 2100 x 1950mm high - 4-sash sliding aluminium frame | No. | 7 | | |
| K | Ditto but 2100 x 5100mm high - 5-sash top hung aluminium frame | No. | 2 | | |
| L | Ditto but 1200 x 5100mm high - 5-sash top hung aluminium frame | No. | 6 | | |
| | Window Cill | | | | |
| M | 250 x 75mm Precast concrete (class 20/12) sunk, weathered and throated cill cart in convenient lengths, reinforced as necessary for handling, bedded, jointed and pointed in gauged mortar and finished fair on all exposed surfaces. | LM | 90 | | |
| | Timber frames | | | | |
| | Wrot hardwood | | | | |
| N | Window boards 225 - 300 mm wide | LM | 90 | | |
| | Window Blinds | | | | |
| O | Supply and fix vertical venetian window blinds slate blinds each size 125 mm wide x 0.21 mm thick, to approved colour scheme and height including all fixing accessories as per approved samples to existing windows Project Architect's approval. | SM | 70 | | |
| **TOTAL WINDOWS CARRIED TO BILL SUMMARY SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| 21 | **JOINERY FITTINGS & FIXTURES**<br>**(ALL PROVISIONAL)**<br><br>Note:<br>Refer to Architects drawings for extra notes and specifications.<br><br>**IMMIGRATION/PASSPORT CONTROL COUNTERS**<br><br>The following counters to be as 'INTOS' OR other equal and approved immigration counters/desks. Pricing should include supply and installation of the lower part of a two tier counter; complete counter to specification and detail with and including any polished stainless steel framework and should include all necessary fixing accessories, and making good disturbed works; Drawing No. D010 | | | | |
| A | Size 1800 x 1800 x 1150 mm high Immigration counters comprising polished stainless steel framing, moulded corian cobalt front panel in an approved colour,the sides and desk top to be finished in MDF with high pressure metal laminate (HPL) finish; foot rail, shelf and protective strips to be in stainless steel; internal panels finished in high pressure metal laminate light grey; 300 mm high internal platform, 2 no. 600 x 300 mm step and 1 no. size 800 x 350 mm at front and and back of counter fixed on metal framing with corner brackets; finished in marmoleum sheet; All supplied, fixed and finished as per Architectural detail. | No. | 2 | | |
| B | Supply approved immigration counter seats; mesh back, swivel, adjustable seats | No. | 2 | | |
| | Supply and install the upper glass part to the two tier immigration counter; complete counter to specification and detail | | | | |
| C | Supply and fix 10 mm thick toughened laminated glass using spider brackets with a size 300 x 150 mm rectangular and size 200 mm diameter voids, including patterned film fixed to existing stainless steel framework; all fixed to already installed size 1800 x 1800 x 1150 mm high Immigration counters erected by others, all fixed as per detail drawing no. D10. | SM | 15 | | |
| | **CHECK-IN COUNTERS**<br><br>The following counters to be as 'INTOS' OR other equal and approved Check-In counters. Pricing should include supply and installation of the complete counter to specification and detail with and including any aluminium framework and should include all necessary fixing accessories, fixing of baggage weighing scales (measured separately) and making good disturbed works | | | | |
| D | Size 1000 x 1000 x 1150 mm high Check-In counters comprising powder coated steel framing, molded corian front panel in an approved colour,the sides and desktop to be finished in MDF with high pressure laminate (HPL) finish; foot rail, shelf and protective strips to be in stainaless steel; All as per Architectural detail and approval. | No. | 6 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| A | Supply approved check-in counter seats; net meshed upholstered, swivel, adjustable seats. | No. | 6 | | |
| B | 75 mm diameter stainless steel tubes anchored on floor and finished in 4 mm thick perspex fixed to enable installation of signages (m/s). | LM | 25 | | |
| | KITCHEN CABINETS | | | | |
| | The following in Kitchen Cabinets overall size 1600mm long x 600mm deep x 2500mm high to the entire satisfaction of the Architect in accordance with detail drawing. | | | | |
| C | 100mm thick plinth size 4200mm x 500mm deep constructed of mass concrete class 20 with approved BRC, finished with 25mm thick screed finished with 100mm high granito skirting. | No | 2 | | |
| D | Ditto but size 1000mm long x 500mm deep | No | 2 | | |
| E | Low-level cabinet measuring 1000mm long x 600mm deep x 850mm high comprising of Veneered Blockboard doors each measuring 500mm wide x 540mm high and 1No. shelf measuring 500mm long x 600mm deep with 1No. drawers at the top each measuring 500mm wide x 185mm high including 1No. 25mm thick granite worktop finish with curved edge laid on top of 75mm thick concrete bench including BRC mesh as reinforcement including 75mm splash back. | No. | 2 | | |
| F | Ditto but 4200mm long x 600mm deep x 850mm high with doors size 500mm long x 540mm high including drawers. | No. | 2 | | |
| H | High level cabinet overall size 3300mm long x 400mm deep x 900mm high including Veneered blockboard shelving size 600mm long x 400mm deep and 500mm long x 400mm deep; Veneered blockboard doors size 600 long x 900mm high and 500mm long x 900mm high. | No. | 2 | | |
| I | Ditto but size 1000mm long x 400mm deep x 900mm high | No. | 2 | | |
| | KITCHEN COUNTERS | | | | |
| | The following in kitchen counters overall size 1800mm long x 600mm deep x 900mm high to the entire satisfaction of the Architect in accordance with detail drawing. | | | | |
| J | Kitchen counters measuring 2000mm x 600mm wide x 1200mm high comprising 25mm thick granite worktop finish with curved edge laid on top of 75mm thick concrete bench including BRC mesh as reinforcement | No | 2 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **VANITY TOPS** | | | | |
| | The following in Vanity Tops overall size 1800mm long x 600mm deep x 900mm high to the entire satisfaction of the Architect in accordance with detail drawing. | | | | |
| A | 100mm thick plinth size 1800mm x 500mm deep constructed of mass concrete class 20 with BRC as necessary finished with 25mm thick screed finished with 100mm high granito skirting. | No | 3 | | |
| B | Ditto but size 900mm long x 600mm deep | No | 4 | | |
| C | Ditto but size 1500mm long x 600mm deep (cl) | No | 3 | | |
| D | Low-level cabinet measuring 1800mm long x 600mm deep x 900mm high comprising of 4No. Veneered Blockboard doors each measuring 450mm wide x 900mm high and 4No. shelf measuring 900mm long x 600mm deep including 1No. 25mm thick granite worktop finish with curved edge including cutting for 2 No. WHBs laid on top of 75mm thick concrete bench including BRC mesh as reinforcement including 75mm splash back. | No. | 3 | | |
| E | Ditto but 900mm long x 600mm deep x 900mm high with 2 No. doors size 450mm long x 900mm high including cutting for 1 No. WHB. | No. | 4 | | |
| F | Ditto but 1500mm long x 600mm deep x 900mm high with 2 No. doors size 450mm long x 900mm high including cutting for 1 No. Dhobi sink. | No. | 3 | | |
| | SHELVING TO CLEANER'S STORES | | | | |
| | The following in shelving overall size 1400mm long x 500mm deep x 900mm high to the entire satisfaction of the Architect in accordance with detail drawing. | | | | |
| G | Veneered blockboard shelving measuring 1400mm long x 500mm deep x 900mm high overall comprising of 2No. Veneered Blockboard doors each measuring 700mm wide x 900mm high 2No. shelves measuring 1400mm long x 500mm deep with veneered blockboard dividers; including top and bottom skirting and lipping to shelving as necessary. | No. | 4 | | |
| | ASSORTED SHELVING | | | | |
| | The following in shelving overall size 1400mm long x 500mm deep x 900mm high to the entire satisfaction of the Architect in accordance with detail drawing. | | | | |
| H | Veneered blockboard shelving measuring 3000mm long x 500mm deep x 900mm high overall comprising of 2No. Veneered Blockboard doors each measuring 700mm wide x 900mm high 2No. shelves measuring 1400mm long x 500mm deep with veneered blockboard dividers; including top and bottom skirting and lipping to shelving as necessary. | No. | 1 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## COLLECTION SHEET

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| TOTAL JOINERY FITTINGS CARRIED TO MAIN SUMMARY | |
|---|---|

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **EXTERNAL RAMPS AND STEPS** | | | | |
| | **(ALL PROVISIONAL)** | | | | |
| **26** | **RAMPS (3 No.)** | | | | |
| | EXCAVATION | | | | |
| A | Allow for mass excavation to remove black cotton soil not exceeding 1.50 metres from ground level and cart away from site from site excavated material Disposal as directed by the Project Manager | CM | 45 | | |
| B | Return, fill and ram selected imported murram soil around excavations | CM | 18 | | |
| C | Load and cart away surplus excavated material as directed by the Consultant | CM | 27 | | |
| | CONCRETE WORK | | | | |
| D | 50 mm thick mass concrete blinding mix 1:4:8 under strip footing | SM | 27 | | |
| E | Vibrated Reinforced Concrete in strip footing Mix 1:2:4 | CM | 7 | | |
| F | Vibrated Reinforced concrete mix 1:2:4 in 200 mm thick slab | SM | 45 | | |
| | SAWN FORMWORK | | | | |
| G | To vertical sides of strip footing | SM | 24 | | |
| H | To vertical edges of floor slab 150 - 225 mm high | LM | 84 | | |
| | WALLING | | | | |
| I | 200 mm thick natural stone walling rough chisel dressed in cement/sand (1:3) mortar | SM | 48 | | |
| | HARDCORE | | | | |
| J | Approved hardcore bed, handpacked well watered and well compacted in layers 250 mm thick | CM | 18 | | |
| K | 200 mm thick crushes run base on hardcore bed (m/s), well compacted to 95% mdd | SM | 45 | | |
| L | 50 mm thick stone dust blinding on hardcore bed | SM | 45 | | |
| M | Apply 'Termidor' or any other equal and approved anti-termite chemical treatment on hardcore | SM | 45 | | |
| N | 1000g polythene damp proof membrane laid with 300 end and side laps under floor slab, on hardcore to the satisfaction of the Engineer | SM | 45 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | REINFORCEMENT | | | | |
| A | Mesh fabric Ref. BRC. A142 (weighing 2.2 kg/m2) laid (measured net - no allowance made for laps) | SM | 45 | | |
| | Supply and fix the following high tensile square twisted reinforcement bars to B.S. 4461 including all the necessary cutting, hooking, bending, cutting spacers, binding wire and supporting all in position | | | | |
| B | Assorted sizes | Kg | 180 | | |
| | FINISHES | | | | |
| C | 12 mm thick, 200 mm wide anti-slip granite slabs laid on screed backing (m/s) | SM | 45 | | |
| D | Extra over granite for anti-slip inserts or groving to granite slabs | LM | 150 | | |
| E | 18 mm thick cement and sand (1:5) screed backing floated to receive granite | SM | 45 | | |
| F | 10 mm thick, 200 x 400 mm granite tiles laid on screed backing (m/s) on masonry walling (m/s) | SM | 18 | | |
| G | 10 mm thick cement and sand (1:5) screed backing floated to receive granite | SM | 18 | | |
| **27** | **STEPS (2 No.)** | | | | |
| | EXCAVATION | | | | |
| H | Allow for mass excavation to remove black cotton soil not exceeding 1.50 metres from ground level and cart away from site from site excavated material Disposal as directed by the Project Manager | CM | 16 | | |
| I | Return, fill and ram selected imported murram soil around excavations | CM | 160 | | |
| J | Load and cart away surplus excavated material as directed by the Consultant | CM | 425 | | |
| | CONCRETE WORK | | | | |
| K | 50 mm thick mass concrete blinding mix 1:4:8 under strip footing | SM | 10 | | |
| L | Vibrated Reinforced Concrete in strip footing Mix 1:2:4 | CM | 3 | | |
| M | Vibrated Reinforced concrete mix 1:1 1/2:3 in 200 mm thick landing | SM | 3 | | |
| N | Ditto in waist | SM | 4 | | |
| O | Ditto in steps | CM | 1 | | |
| | REINFORCEMENT | | | | |
| P | Mesh fabric Ref. BRC. A142 (weighing 2.2 kg/m2) laid (measured net - no allowance made for laps) | SM | 7 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | Supply and fix the following high tensile square twisted reinforcement bars to B.S. 4461 including all the necessary cutting, hooking, bending, cutting spacers, binding wire and supporting all in position | | | | |
| A | Assorted sizes | Kg | 80 | | |
| B | Y8 mm diameter | Kg | 32 | | |
| | SAWN FORMWORK | | | | |
| C | To vertical sides of strip footing | SM | 8 | | |
| D | To vertical edges of floor slab 150 - 225 mm high | LM | 6 | | |
| E | To sloping soffites of staircases | SM | 4 | | |
| F | Ditto but risers 150 - 225 mm high | LM | 12 | | |
| G | Soffittes of landing | SM | 3 | | |
| | WALLING | | | | |
| H | 200 mm thick natural stone walling rough chisel dressed in cement/sand (1:3) mortar | SM | 18 | | |
| | HARDCORE | | | | |
| I | Approved hardcore bed, handpacked well watered and well compacted in layers 250 mm thick | CM | 4 | | |
| J | 200 mm thick crushes run base on hardcore bed (m/s), well compacted to 95% mdd | SM | 7 | | |
| K | 50 mm thick stone dust blinding on hardcore bed | SM | 7 | | |
| L | Apply 'Termidor' or any other equal and approved anti-termite chemical treatment on hardcore | SM | 7 | | |
| M | 1000g polythene damp proof membrane laid with 300 end and side laps under floor slab, on hardcore to the satisfaction of the Engineer | SM | 7 | | |
| | FINISHES | | | | |
| N | 12 mm thick, 200 mm wide anti-slip granite slabs laid landing on screed backing (m/s) | SM | 3 | | |
| O | 20 mm thick, 300 mm wide granite treads with anti-slip grooving | LM | 10 | | |
| P | 20 mm thick risers 150 mm high | LM | 12 | | |
| Q | 20 mm thick granite tiles in wall string maximum width 230 mm to follow profile of treads and risers with coved internal angle at junction with risers & treads with rounded top | LM | 8 | | |
| R | Labour & material for making good screed paving around end of balusters (m/s) | ITEM | | | |
| S | 18 mm thick cement and sand (1:5) screed backing floated to receive granite | SM | 3 | | |
| T | 10 mm thick, 200 x 400 mm granite tiles laid on screed backing (m/s) on masonry walling (m/s) | SM | 8 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| A | 10 mm thick cement and sand (1:5) screed backing floated to receive granite | SM | 8 | | |
| | STAINLESS STEEL BALUSTRADING | | | | |
| B | Allow for balustrading of the entire walkway at front of the terminal and side walks including Ramps and staircases comprising 50 mm diameter x 3 mm thick handrail with and including balusters one end fixed to handrail and other end grounted in concrete including infills as per Architectural drawing detail | SM | 90 | | |
| C | Ditto but around Columns | SM | 30 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## COLLECTION SHEET

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| | |
|---|---|
| **TOTAL EXTERNAL RAMPS AND STEPS CARRIED TO BILL SUMMARY** | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 3 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |
| | **SUMMARY SHEET** | | | | |
| | SUBSTRUCTURES | | | | |
| | WALLING | | | | |
| | FLOOR FINISHES | | | | |
| | WALL FINISHES | | | | |
| | CEILING FINISHES | | | | |
| | DOORS | | | | |
| | WINDOWS | | | | |
| | JOINERY FITTINGS & FIXTURES | | | | |
| | EXTERNAL RAMPS & STEPS | | | | |
| TOTAL CARRIED TO GRAND SUMMARY | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **PASSENGER TERMINAL** | | | | |
| | **MEZZANINE FLOOR** | | | | |
| | **SUPERSTRUCTURE** | | | | |
| **01** | **GROUND FLOOR WALLING** | | | | |
| A | 200 mm thick fine chisel dressed stone walling cement/sand (1:3) mortar including hoop iron at alternate courses with rounded keyed-in joints as directed by the Architect. | SM | 810 | | |
| B | Ditto but 150mm thick walling | SM | 20 | | |
| C | Ditto but 150mm thick walling (900mm high walling) including mahogany/mvule 150-180mm lipping on top to approval of Project Manager. | SM | 55 | | |
| | ALUMINIUM FRAMED WALLING. | | | | |
| D | 2450 mm high heavy gauge Aluminium framed glass partition fixed to floor & wall comprising 80 x 40 mm powder coated aluminium frames at 1200 mm centres; infilled with 8 mm thick toughened/laminated branded glass complete with necessary glazing beads to Project Architect's detail and approval. | SM | 210 | | |
| E | 2 mm thick branded window film fixed to glazing (m/s) approved as per sample | SM | 20 | | |
| **TOTAL WALLING CARRIED TO BILL SUMMARY** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **02** | **CONCRETE WORK** | | | | |
| | **Vibrated Reinforced Concrete class 25** | | | | |
| A | In 150 mm thick waist to staircase | SM | 36 | | |
| B | Ditto but in 150 mm thick landing | SM | 16 | | |
| C | In beams | CM | 95 | | |
| D | In Columns | CM | 25 | | |
| E | In steps | CM | 4 | | |
| F | 150 mm thick suspended roof slab | SM | 1,632 | | |
| **03** | **SAWN FORMWORK** | | | | |
| G | To sloping soffites of staircases | SM | 36 | | |
| H | Sides and Soffittes of beams | SM | 1,050 | | |
| I | Sides of columns | SM | 320 | | |
| J | Ditto but curved | SM | 70 | | |
| K | Soffittes of suspended slab & landing | SM | 1,648 | | |
| L | Vertical edges of slab 75 - 150 mm high | LM | 160 | | |
| M | Ditto but risers 150 - 225 mm high | LM | 120 | | |
| **04** | **REINFORCEMENT** | | | | |
| | Supply and fix the following high tensile ribbed bars reinforcement bars to BS 4449:2005 including all the necessary cutting, hooking, bending, cutting spacers, binding wire and supporting all in position | | | | |
| N | Assorted sizes | Kg | 35,895 | | |
| **TOTAL CONCRETE WORKS CARRIED FORWARD TO BILL SUMMARY** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **05** | **STRUCTURAL STEELWORK & ROOF CONSTRUCTION (CANOPIES)** | | | | |
| | Factory primed structural steelwork grade 50C to be executed by an approved Sub-Contractor | | | | |
| | Unframed mild steel including fixing into position. | | | | |
| A | 219.1mm diameter x 6.0mm thick Circular Hollow Section (31.53kg/m) | Kgs | 12,800 | | |
| B | 114.3mm diameter x 3.66mm thick Circular Hollow Section roof ties (9.83 kg/m) | Kgs | 1,580 | | |
| C | 114.3mm diameter x 3.66mm thick Circular Hollow Section bracings (9.83 kg/m) | Kgs | 6,300 | | |
| D | 152 x 50.8 x 20 x 2mm thick (Approx. 5.70kg/m) z-purlins | Kgs | 2,900 | | |
| E | 5mm thick steel fascia n.e. 300mm width with and including steel brackets support. | LM | 100 | | |
| F | 300 x 300 x 10mm thick plate six times drilled to receive 16mm rawl bolts (measured separately). | NO. | 28 | | |
| G | Extra over for welded connections | NO. | 450 | | |
| H | 16mm diameter grade 8.8 bolt approx. 1500mm long with head nut and washers and 6mm plate tie. | NO. | 168 | | |
| I | Approved 4mm thick fillet welded to truss members (various sizes) to SE detail. | NO. | 100 | | |
| J | Prepare, touch up primer and spray paint one undercoat and two gloss finishing coats of 'Crown Paints Solo' or other equal and approved oil paint on general surfaces of metal | SM | 1,000 | | |
| K | Roof steel feature in 6-9m spans comprising 76mm diameter x 3.00mm CHS (Approx. 5.41kg/m) in external and internal members with and including Alucobond facing, all plates, cleats, holes and welding and hoisting 10000m high above lower ground level to approval. | Kgs | 4,000 | | |
| | The pricing to include the whole of the following Framed structural steelwork comprising of rafters, struts, ties, kingposts and plates all welded and bolted connection and all other necessary fixing accessories. Steel to be factory primed in Zinc Chromate and painted with 3 coats first grade gloss oil paint (m/s), with allowance for site touch- up paint after erection to suit all as per Structural Engineer's drawings | | | | |
| | ROOF COVERING | | | | |
| L | Gauge 24 corrugated 'Saflok' or equal approved pre-painted 'purpose made' composite roofing sheets Comprising 60 mm thick 'Rock wool' (m/s) in between two metal sheets including self drilling screws as per Stuctural Engineer's drawing or manufacturer's printed instructions | SM | 875 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| A | Ditto over Roof Vent structure | SM | 100 | | |
| B | 60 mm thick "Rock Wool" thermal insulation panels compatible with steel support system and water proofing membrane; to act as vapour barrier or complemented by an efficient vapour barrier; rot proof; non-combustible fixed with and including all accessories as per detail drawing or as recommended by insulation manufacturer or equal and approved | SM | 875 | | |
| | GLAZING TO SKYLIGHT | | | | |
| C | 16mm approved solar-treated laminated glass mounted on powder-coated Aluminium frame supports attached to and including 50 x 50 x 3.0mm steel RHS frame including heavy duty glazing beads, accessories and supports to detail and approval. | SM | 200 | | |
| **06** | **RAINWATER DRAINAGE** | | | | |
| | Gutter | | | | |
| D | 1220mm x 2.0mm thick galvanised gutter to approval of SE in approved quality fixed (and including) to fascia board with and including approved matching brackets at 1.0 m c/c and all necessary accessories. | LM | 120 | | |
| E | Approved 150mm Aluminium heavy duty fulboras | NO | 30 | | |
| F | Extra over gutter for stopped ends. | NO. | 12 | | |
| G | Ditto but for 150 mm diameter outlet. | NO. | 12 | | |
| H | 150mm Diameter uPVC pipes fixed to columns (m/s) with and including approved brackets. | LM | 200 | | |
| I | Extra for 600mm swanneck projection. | NO. | 30 | | |
| J | Extra for shoe. | NO. | 30 | | |
| K | Extra for bend. | NO. | 30 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |
| | **COLLECTION** | | | | |
| | BROUGHT FORWARD FROM PAGE 139 | | | | |
| | BROUGHT FORWARD FROM PAGE 140 | | | | |
| | **TOTAL STRUCTURAL STEEL & ROOF WORKS CARRIED TO BILL SUMMARY SHEET** | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **FINISHES** | | | | |
| 07 | **FLOOR FINISHES:** | | | | |
| | GRANITO TILES | | | | |
| | Approved coloured non-slip floor tiles; matt laid to regular pattern; including bedding and jointing in "PEGACOL" tile adhesive or other equal and approved; grouting joints with "BENFER" or other equal and approved epoxy resin-based grout | | | | |
| A | Approved coloured high quality non-slip granito tiles size 600 x 300 x 10 mm fixed in cement on screed backing (m/s) | SM | 700 | | |
| B | 10 x 100 mm high skirting to match tiles | LM | 360 | | |
| | NON-SLIP PORCELAIN/ GRANITO TILES | | | | |
| | Approved coloured non-slip porcelain/granito floor tiles; matt laid to regular pattern; including bedding and jointing in "PEGACOL" tile adhesive or other equal and approved; grouting joints with "BENFER" or other equal and approved epoxy resin-based grout | | | | |
| C | Approved coloured high quality non-slip tiles size 300 x 300 x 10 mm fixed in cement on screed backing (m/s) | SM | 75 | | |
| | Polished terrazzo paving | | | | |
| D | 45mm Thick two coat bed laid to falls on concrete (measured separately) with and including plastic dividing strips set flash with flooring; grind and polish to approval of Project Manager. | SM | 35 | | |
| E | 20 x 150mm Coved and rounded skirting. | LM | 60 | | |
| | Cement and Sand (1:5) Screed | | | | |
| F | 30 mm thick floated to receive granito floor finish (m/s) | SM | 700 | | |
| G | 30 mm thick floated to receive non-slip granito/porcelain tiles (m/s) | SM | 75 | | |
| H | 15 mm thick floated to receive terrazzo floor finish (m/s) | SM | 35 | | |
| I | 15 mm thick floated to carpet floor finish (m/s) | SM | 30 | | |
| | CARPET | | | | |
| J | Approved heavy-duty GRASS carpet fixed to steel trowelled screed backing (m/s) including blanket underlay, fixing clips and all other necessary fixing accessories. | SM | 30 | | |
| K | Allow for metal strip at doors at doors. | SM | 10 | | |
| L | Allow for trimming and making good based of doors. | SM | 10 | | |
| M | 10 x 100 mm high wrot hardwood timber skirting fixed to wall including 15 x15 mm fixing grounds | SM | 30 | | |
| N | Sand prepare and apply three coats of polyuretahne lacquer on timber surfaces 75 - 150 mm high | SM | 30 | | |
| **TOTAL FLOOR FINISHES CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **08** | **EXTERNAL WALL FINISHES** | | | | |
| | Cement and Sand (1:5) Screed | | | | |
| A | 18 mm thick steel-floated render to new masonry walling to receive paint (m/s). | SM | 760 | | |
| | PAINT | | | | |
| B | Prepare and apply "Wall master" or equal approved cement and polymer based wall coating with and including anti-algae coating according to Manufacturer's instructions and Project Architect's specifications and approval. | SM | 760 | | |
| **09** | **INTERNAL WALL FINISHES** | | | | |
| | Cement and Sand (1:5) Screed | | | | |
| C | 18 mm thick steel-floated plaster to new masonry walling to receive paint (m/s). | SM | 1,490 | | |
| | PAINT | | | | |
| D | Prepare and skim or smoothen uneven plaster in 'Crown Wallcare' or other equal and approved; prepare and apply external quality paint as "Permaplast" or equal approved weatherproof coating cream-finish super quality acrylic copolymer external paint according to Manufacturer's instructions and Project Architect's specifications and approval. | SM | 1,490 | | |
| | Wall tiles | | | | |
| | Approved coloured granito wall tiles matt; laid to regular pattern; including bedding and jointing in "PEGACOL" tile adhesive or other equal and approved; grouting joints with "BENFER" or other equal and approved epoxy resin-based grout | | | | |
| E | 600 x 300mm thick glazed granito wall tiles bedded in cement & sand (1:4) mortar on backing screed (m/s). | SM | 230 | | |
| F | Size 600 x 300 mm Border Tile as per Architectural Drawing | LM | 120 | | |
| G | Ditto Size 120 x 290 mm Stone Border Tile | LM | 120 | | |
| H | 12 mm thick cement & sand (1:4) backing screed to stonework to receive tiles | SM | 230 | | |
| **TOTAL WALL FINISHES CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **10** | **CEILING FINISHES** | | | | |
| | Cement and Sand (1:5) Screed | | | | |
| A | 18 mm thick steel-floated plaster to concrete ceiling surfaces to receive paint (m/s). | SM | 985 | | |
| B | 18 mm thick gypsum ceiling approved in colour fixed on and including approved Aluminium support to Manufacturer's instructions cypress brandering at 600 mm centres. | SM | 50 | | |
| | PAINT | | | | |
| C | Prepare and apply one coat of undercoat and two finishing coats of first quality grade Silk Vinyl plastic emulsion paint to ceiling surfaces. | SM | 1,035 | | |
| | Cornice | | | | |
| D | Approved 100 x 100mm gypsum/plaster of paris cornice | LM | 900 | | |
| E | Prepare and apply 3 coats of paint on general timber/ plaster of paris surfaces 100 - 200 mm girth. | LM | 900 | | |
| F | Prepare and apply primer to back of cornice only n.e. 100 mm girth | LM | 900 | | |
| **TOTAL CEILING FINISHES CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **OPENINGS** | | | | |
| **11** | **DOORS** | | | | |
| | Supply, assemble and fix the following purpose made solid panelled Mvule/Mahogany doors to detail and approval of Project Manager/ Architect. | | | | |
| A | 50mm thick Door size 1000 x 2450mm high to detail with and including approved glazing and top transome light. | No. | 6 | | |
| B | 50 mm thick size 1500 x 2450 mm high overall timber mahogany/mvule TNG door with top transome light. | No. | 7 | | |
| C | Ditto but 800 x 2450mm high horizontal mahogany/mvule TNG door with top transom light. | No. | 2 | | |
| | ALUMINIUM DOORS | | | | |
| | Supply and fix the following powder coated heavy duty Aluminium doors including 8mm thick toughened/laminated branded glass, all necessary glazing beads, ironmongery including approved locks, fixing and hanging accessories as per schedule of doors | | | | |
| D | Size 900 x 2450mm high Aluminium framed door with and including all sliding accessories and equipment | No. | 15 | | |
| E | Size 1500 x 2450mm high Aluminium framed door with top transom light | No. | 3 | | |
| | Timber frames | | | | |
| F | 150 x 50 mm wrot rebated hardwood door frame | LM | 110 | | |
| G | 25 x 25 mm quadrant beading plugged | LM | 110 | | |
| H | 38 x 25 architrave | LM | 110 | | |
| | Painting | | | | |
| I | Prepare and apply 3 coats of gloss oil paint on general timber surfaces | SM | 90 | | |
| J | Prepare and apply 3 coats of gloss oil paint on timber surfaces 100 - 200 mm girth | LM | 110 | | |
| K | Prime back of frame n.e 100mm girth | LM | 220 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **Iron mongery** | | | | |
| | Supply and fix the following ironmongery as per `Union' or other similar and approved catalogue to hardwood with screws to match to approval | | | | |
| A | 150 mm long pressed heavy duty stainless steel butt hinges. | Pairs | 62.0 | | |
| B | 5-lever mortice locks complete with handles and furniture; stainless steel finish. | No. | 25 | | |
| C | Bathroom locks with and including indicator bolt and thumb turn' | No. | 8 | | |
| D | Heavy duty stainless steel Magnetic-catch Door stops mounted on walling. | No. | 33 | | |
| E | Stainless steel D-handles 200mm long. | No. | 25 | | |
| F | Stainless steel Push/Pull plates | No. | 8 | | |
| G | Stainless steel signages with recessed print. | No. | 20 | | |
| H | Door signages to Architect's detail. | No. | 20 | | |
| I | Stainless steel Coat Hooks. | No. | 20 | | |
| J | Heavy duty door Union Door closer as 'N8825' comprising of Aluminium body, steel armrest, independent door speed and latch controls, adjustable back check, adjustable flatform arm finished in Satin stainless steel. | No. | 25 | | |
| | Dowels | | | | |
| K | 10 mm diameter, 200 mm long mild steel dowel one end morticed to wood the other grouted in concrete | No. | 30 | | |
| | Door cramps | | | | |
| L | 225 x 25 x 3 mm mild steel door cramps, once bent and twice holed, one end screwed to frame the other built in masonry wall | No. | 90 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
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| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## COLLECTION SHEET

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| | |
|---|---|
| TOTAL DOORS CARRIED TO BILL SUMMARY SHEET | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **12** | **WINDOWS** | | | | |
| | Supply and fix approved heavy duty powder-coated aluminium windows to approval, with and including 8mm thick laminated glass with 'solarvue' or equivalent sun-treatment to Arch, detail and approval. | | | | |
| A | Size 1200 x 1950 mm high window - 2-sash sliding aluminium frame | No. | 18 | | |
| B | Ditto but 4000 x 900mm high - 5-sash sliding aluminium frame | No. | 2 | | |
| C | Ditto but 2100 x 1950mm high - 4-sash sliding aluminium frame | No. | 9 | | |
| | Window Cill | | | | |
| D | 250 x 75mm Precast concrete (class 20/12) sunk, weathered and throated cill cart in convenient lengths, reinforced as necessary for handling, bedded, jointed and pointed in gauged mortar and finished fair on all exposed surfaces. | LM | 60 | | |
| | Timber frames | | | | |
| | Wrot hardwood | | | | |
| E | Window boards 225 - 300 mm wide | LM | 60 | | |
| | Window Blinds | | | | |
| F | Supply and fix vertical venetian window blinds slate blinds each size 125 mm wide x 0.21 mm thick, to approved colour scheme and height including all fixing accessories as per approved samples to existing windows Project Architect's approval. | SM | 70 | | |
| **TOTAL WINDOWS CARRIED TO BILL SUMMARY SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 4 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |
| | **SUMMARY SHEET** | | | | |
| | WALLING | | | | |
| | CONCRETE WORK | | | | |
| | STRUCTURAL STEEL & ROOF CONSTRUCTION | | | | |
| | FLOOR FINISHES | | | | |
| | WALL FINISHES | | | | |
| | CEILING FINISHES | | | | |
| | DOORS | | | | |
| | WINDOWS | | | | |
| TOTAL CARRIED TO GRAND SUMMARY | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **A: LIGHTING AND SMALL POWER** | | | | |
| A1 | Lighting points wired in 3 x 2.5mmsq PVC single core copper cable drawn in 25mm dia PVC HG conduits on concealed in slab, surface walls/ and ceiling, one way switched with all fixing accessories like saddles, couplers, boxes, connectors etc but excluding switch and fitting | No | 220 | | |
| A2 | Ditto but two way | No | 35 | | |
| A3 | Lighting points wired in 3 x 1.5mmsq PVC insulated single core (SC) copper cable drawn in 25mm dia HG PVC conduits on the surface walls/ and false ceiling, one way switched with all fixing accessories like saddles, couplers, boxes, connectors etc but excluding switch and fitting | No | 290 | | |
| A4 | Ditto but two way | No | 35 | | |
| A5 | Supply and install switching accessories complete with boxes as MK | | | | |
| | i. 10A plate switch 1-gang 1-way | No | 140 | | |
| | ii. 10A plate switch 1-gang 2-way | No | 16 | | |
| | iii. 10A plate switch 2-gang 2-way | No | 8 | | |
| | iv. 20A 8-gang grid switch | No | 12 | | |
| A6 | Supply and install lighting fittings complete with lamps and fixing accessories as per the specifications and drawings | | | | |
| A7 | Recessed down lights for suspended ceiling, IP 54 240V, 50HZ LED THORN CHALICE PRO CAT NO. CHR2000XM3K (attachment ring) for washroom areas. | No | 73 | | |
| A8 | Wall Mounted UPLIGHT/DOWNLIGHT, IP 65 240V, 50HZ THORN PIAZZA II LED CAT NO. PZLL2700HFP | No | 56 | | |
| A9 | Wall Mounted UPLIGHT/DOWNLIGHT, IP 65 240V, 50HZ THORN PIAZZA II LED CAT NO. PZLL2700HFP connected to emergency circuit | No | 56 | | |
| A10 | High bay, IP 65 240V, 50HZ PHILIPS LEDINAIRE HIGH-BAY CAT NO. BY020P LED100S/840 PSU WB complete with reflector | No | 55 | | |
| A11 | High bay, IP 65 240V, 50HZ PHILIPS LEDINAIRE HIGH-BAY CAT NO. BY020P LED100S/840 PSU WB complete with reflector connected to emergency circuit | No | 55 | | |
| A12 | Recessed 600X600 lights for suspended ceiling, IP 54 240V, 50HZ LED 600x600 THORN BETA OFFICE CAT NO. BETO4000Z4K (attachment ring) | No | 130 | | |
| **TOTAL CARRIED TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| A13 | Decorative wall mounted LED luminare-The fixture is fitted with 10.7 watts lamps, 240V, 50HZ LED lamps as BEGA 12282.1 | No | 12 | | |
| A14 | Surface mounted LED battern fitting 240V, 50HZ POPPACK LED3000-830 HF L1200 as Thorn Poppack LED Cat No. PP3000Z4F3K | No | 16 | | |
| A15 | Surface mounted bulkhead with diecast black/silver grey/anthracite/ white aluminium body and opal polycarbonate diffuser Cat No. EYS7ZB4K. As Thorn Eyekon LED | No | 6 | | |
| A16 | High performance LED IP65, dust and moisture resistant luminaire with polycarbonate canopy, polycarbonate diffusers and steel toggles. Cat NoQ6400D. As Thorn Aquaforce II LED | No | 35 | | |
| A17 | Circular 300mm LED fiiting for stair case as type C | No | 20 | | |
| A18 | LED Ramp fitting as typed H | No | 26 | | |
| A19 | VIP decorative down lighter | No | 6 | | |
| A20 | 4ft LED mirror light | No | 35 | | |
| | **POWER POINTS AND OUTLETS** | | | | |
| | Supply, install, test and commission the following to work complete with MK accessories: - | | | | |
| A21 | 13 Amp ring single socket outlet points wired in 3 x 2.5mmsq PVC SC copper cable drawn in 25mm HG PVC conduits concealed in the walls/trunking and floors, with all accessories but excluding the socket outlet plate | No | 2 | | |
| A22 | Ditto, but for Twin socket outlet | No | 150 | | |
| A23 | Ditto, but for Twin socket outlet connected to clean/ups power | No | 150 | | |
| A24 | Hand drier circuit wired in 3 x 2.5 mmsq PVC SC copper cables drawn in 25mm HG PVC conduits concealed in the walls and floors complete with all accessories and three meters of 4sqmm three core flex, but excluding the D.P. switch | No | 20 | | |
| A25 | 13 Amps single switched sockets with dual USB charging ports as MK logic plus K2744WHI | No | 2 | | |
| A26 | Supply and install 1.5KW automatic Hand dryer | No | 20 | | |
| A27 | 13 Amps twin switched sockets with dual USB charging ports as MK logic plus K2744WHI connected to clean power | No | 150 | | |
| A28 | 13 Amps twin switched sockets with dual USB charging ports as MK logic plus K2744WHI- red in color for clean power | No | 150 | | |
| A29 | 20 Amps D.P. switch as MK K5423WHI | No | 20 | | |
| A30 | Allow for 38mm dia HG PVC conduits complete with bends for interconnection | No | 50 | | |
| **TOTAL CARRIED TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| A31 | Allow for 50mm dia HG PVC conduits complete with bends for interconnection | No | 50 | | |
| A32 | Allow for 100mm dia HG PVC conduit complete with bends for interconnection | No | 100 | | |
| A33 | 32A TP Isolator wired in 4CX10mm$^2$ PVC SWA PVC cables complete with cable glands and lugs laid on cable tray/ducts to Air Supply Fan | LM | 300 | | |
| A34 | 2Cx6 mm2 PVC SWA PVC cables laid on cable tray/ducts to Air Extract Fan. | LM | 200 | | |
| A35 | 20A TP Isolator complete with metallic enclosure | No | 16 | | |
| A36 | 45A DP switch | No | 6 | | |
| A37 | Supply and install 5.5KW electric instant water shower wired in 3x4mm sq. copper SC cables | No | 6 | | |
| A38 | Supply and install water proof floor socket box as MK | No | 15 | | |
| A39 | Allow for connection units, adaptable boxes, supports, fixing, protective painting, decorative painting, indentification, inspection, testing, commissioning, instructions of owners staff, samples and tests, proposed layout drawings and record drawings. | LOT | 1 | | |
| | Sundries | | | | |
| A40 | Allow for connection units, adaptable boxes, supports, fixing, protective painting, decorative painting, indentification, inspection, testing, commissioning, instructions of owners staff, samples and tests, proposed layout drawings and record drawings. | LOT | 1 | | |
| **TOTAL CARRIED TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
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| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## COLLECTION SHEET

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| | |
|---|---|
| TOTAL LIGHTING & POWER CARRIED TO BILL SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **B. TRUNKING SYSTEM** | | | | |
| | Supply, Installation, testing & commissioning of the following complete with associated accessories as specified and shown on the drawings. | | | | |
| B1 | Supply & Install 300mm X 50mm 18SWG galvanised surface mounted cable tray for services cabling complete with fixing brackets and other fixing accessories for both existing and new services | LM | 150 | | |
| B2 | Supply & Install 200mm X 50mm 18SWG galvanised surface mounted cable tray for services cabling complete with fixing brackets and other fixing accessories for both existing and new services | LM | 100 | | |
| B3 | Supply and Install 300mm x 50mm 18SWG bends for above the Cable tray | No. | 25 | | |
| B4 | Supply and Install 200mm x 50mm 18SWG bends for above the Cable tray | No. | 25 | | |
| B5 | Supply & Install 250mm X 50mm 3 Compartments 16 SWG oyster metal trunking complete with fixing brackets and other fixing accessories for socket power outlet and data outlets | LM | 250 | | |
| B6 | Supply & Install 90 degree outside/inside metal bends for the above trunking | No. | 150 | | |
| B7 | Supply & Install End Caps for the above trunking | No. | 60 | | |
| B8 | Supply & Install twin face plate for socket outlet | No. | 300 | | |
| B9 | Supply & Install twin face plate for data and telephone outlet | No | 60 | | |
| B10 | Allow for 50mm HG PVC conduits for interconnections between power points | No. | 50 | | |
| B11 | Allow for 38mm HG PVC conduits for interconnections between power points | No. | 50 | | |
| **TOTAL TRUNKING SYSTEM CARRIED TO BILL SUMMARY** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **C** | **MAIN POWER DISTRIBUTION** | | | | |
| C1 | Main low voltage switchboard free standing fully front access with CTs chamber sealable by KPLC fabricated from 16 SWG steel sheets and frames complete with the following instruments to be as ABB or schneider:-<br><br>1No .400A TPN MCCB as schneider withdrawable with thermomagnetic release<br><br>Space for KP & LC 3 phase cut-outs, current transfomers and three phase digital multi-meter<br><br>1No.s power factor correction unit comprising of 8No. Steps controller ,300Kvar self healing capacitor banks, current transformers and control cabling<br><br>1No.automatic transfer units comprising of 2No.400A 4P motorised mechanical and electrically interlocked, withdraw able ACB's 35kA SC breaking capacity, complete with microprocessor, electronic trip, manual/by pass, communicating module<br><br>400A TPN copper busbars<br><br>2Nos. 200A TP MCCB Adjustable (0.6-1 ) with electronic trip unit and communicating module -modbus protocol.<br><br>2 No.125A TP MCCB as schneider<br><br>2 No. 63A TP adjustable MCCB as schneider<br><br>3 No. 3 phase digital energy Multi -Meter<br><br>5 No.spare ways for up 63A TPN MCCBs<br><br>0-1000A Current,0-500V Voltage, and Power factor meters,selector switch including all associated accessories Set of phase presence indicator lamps including wiring<br><br>All necessary wiring, auxilliaries and indelible labeling The switchboard<br>to be finished in auto lacquer, IP65 Degree of Protection | Item | 1 | | |
| C2 | Supply, Installation, testing & commissioning of the following complete with associated accessories as specified and shown on the drawings.<br><br>Supply and install surface mounted 200 Amps 8 Way TP&N Distribution Board Ref: DB 'UG1' as Schieder or equal and approaved.<br>i) 3No. 100Amps TP. MCCB'S<br>ii)10No. 63Amps S.P. MCB'S<br>iii) 5No. Blanking plates. | Item | 2 | | |
| **TOTAL CARRIED TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| C3 | Supply and install surface mounted 100 Amps 8 Way TP&N Distribution Board Ref: DB 'UG2' as Schieder or equal and approaved.<br>i) 3No. 63Amps TP. MCCB'S<br>ii) 5No. 63Amps S.P. MCB'S<br>iii) 2No. Blanking plates. | Item | 3 | | |
| C4 | Supply and install surface mounted 63 Amps 12 Way SP Consumer unit Ref: CU 'UG1-10'. as Schieder or equal and approaved.<br><br>i) 2Nos. 10Amps S.P. MCB'S<br>i) 8Nos. 20Amps S.P. MCB'S<br>ii) 2Nos. Blanking plates. | Item | 25 | | |
| C5 | Supply & Install 4C x 120mm sq. PVC-SWA-PVC cable from the substation to distribution board "DB-'UG1', UG2" complete with cable lugs and glands. | Lm | 100 | | |
| C6 | Supply & Install 4C x70mm sq. PVC-SWA-PVC cable from the Main distribution board to distribution board "DB-'UG2'" complete with cable lugs and glands. | Lm | 150 | | |
| C7 | Supply and install cable glands complete with PVC shrouding for the above cables. | No. | 12 | | |
| C8 | Supply & Install 2C x 16mm sq. PVC-SWA-PVC cable complete with cable lugs and glands from the distribution boards to all consumer units. | Lm | 700 | | |
| C9 | Supply and install cable glands complete with PVC shrouding for the above cables. | No. | 20 | | |
| | **Grounding system** | | | | |
| C10 | Equipotential bars, cables, taps, bonding, pits, boxes, clamps, rods, covers, cadwelds, exothermic connections, ets and all necessary earthing accessories as per drawings and specs. | Sum | | | |
| **TOTAL CARRIED TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## COLLECTION SHEET

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| | |
|---|---|
| TOTAL MAIN POWER DISTRIBUTION CARRIED TO BILL SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **D: LIGHTNING PROTECTION** | | | | |
| | Supply, Installation, testing & commissioning of the following complete with associated accessories as specified and shown on the drawings. | | | | |
| D1 | Air termination Type Furse RA225 + RA600 fixed to ridge saddle Furse SD155 bolted to roof with water tight rubber washers | No | 4 | | |
| D2 | 25mm x 3mm copper tape TC030 on tape clip Furse CP210 fixed at 750mm intervals to approved detail | LM | 200 | | |
| D3 | 50mm2 PVC insulated copper conductor enclosed in 25mm dia HG concealed PVC conduit between copper tape and test joint | LM | 50 | | |
| D4 | Lugs for item above including fixing bolts to roof conductors | No | 20 | | |
| D5 | Test clamps Furse CN305 | No | 8 | | |
| D6 | Rod to earth conductors clamps Furse CR520 | No | 8 | | |
| D7 | Earth rods Furse RC015 with driving sud, furse ST015 and spike furse SP015 driven into ground | No | 8 | | |
| D8 | 50mm2 ECC in 1 x 25mm dia PVC conduit between the test clamp and the earth rods | LM | 40 | | |
| D9 | 125 x 100 x 50mm deep boxes with cover and marked safety earth installed columns to approved detail | No | 8 | | |
| D10 | Concrete earthing inspection pits, Furse PT-005 | No | 8 | | |
| D11 | Test the completed lightning protection system and report results | Item | 1 | | |
| **TOTAL LIGHTNING PROTECTION TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **E.SOLAR STREET LIGHTING** | | | | |
| E1 | 80Wp Polycrystalline pole mounted PV Module complete with aluminum mounting structures as Canadian solar or equal and approved equivalent | No | 100 | | |
| E2 | 65w 24V 3400lm solar LED fitting as Philip or equal and approved. | No | 50 | | |
| E3 | 12V 100AH deep cycle maintenance free Lead acid solar batteries as Hoppecke or equal and approved equivalent | No | 100 | | |
| E4 | Lockable weather proof cabinet for battery and controller. | No | 50 | | |
| E5 | Supply and install 2x2.5 mm2 Cu, double insulated solar cable complete with connectors | LM | 600 | | |
| E6 | Supply and install 3x2.5 mm2 Cu, flexible cable complete with connectors. | LM | 600 | | |
| E7 | 8 meters solar and wind street lighting column made from class "B" steel galvanized 100mm diameter pipe to BS EN 40, complete with anchors and brackets. The column to be erected in a firm concrete of 600 x 600 x 500mm.The column to be complete with pole window and lower plate for mounting Lucy cut-out and lower plate for 3 No. Cable termination slots. | No | 20 | | |
| E8 | Allow for adequate earthing for the street lights system using earth rod, clamp and cable. | No | 50 | | |
| E9 | Testing and commissioning of all the installed equipment | Item | 1 | | |
| **TOTAL SOLAR STREET LIGHTING TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **SOLAR SYSTEM** | | | | |
| A | Allow for relocation of the existing 30KW solar system from existing teminal building to the new terminal building. Bidder to allow for disconnection, transportion and re-installation | No. | 1 | | |
| **TOTAL SOLAR POWER SYSTEM TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **G. IP BASED PUBLIC ADDRESS SYSTEM** | | | | |
| | For the supply, Installation, testing & commissioning of the following complete with associated accessories as specified and shown on the drawings. | | | | |
| G1 | Supply and installation of rack mounted IP Based Public Address controller Server complete with Back Ground Music Player and associated accessories, management software, licenses to complete the installation. The system based on Honeywell IP X-618 MEGA or approved equivalent | L.S | 1 | | |
| G2 | IP Based 91dB, 9W RMS, 5" ceiling/ surface mounted speakers as Honeywell or approved equivalent complete with associated accessories . | No. | 10 | | |
| G3 | IP Based 91dB, 180W RMS,column line array speakers as Honeywell or approved equivalent complete with associated accessories. | No. | 10 | | |
| G4 | IP Based ambient noise sensing microphones as Honeywell or approved to be installed at the announcement station/ remote paging complete with associated accessories | No. | 2 | | |
| G5 | Supply and install IP based 2X150 Watts, Rack Mount, Power Amplifiers as per specifications. | No. | 2 | | |
| G6 | Supply and install digital audio synthesizer unit with 4 output ports | No. | 1 | | |
| G7 | Supply and install Call Station with 8 programmable selection keypad comprising cabinet and condenser microphone/gooseneck complete with key sensing card, microphone amplifier and key configuration | No. | 1 | | |
| G8 | Supply and install Emergency handheld microphone at the Main Communications Room | No. | 1 | | |
| G9 | Supply and install Fibre Interface, complete with Power Supply Units | No. | 1 | | |
| G10 | Supply and install 19" 40U standard Rack Cabinets with glass front door at the Information Control Room | No. | 1 | | |
| G11 | Allow for wiring of all speakers and other system components. | No. | 130 | | |
| G12 | 24 Port Data POE switch as Cisco 3850 Series configured to support Honeywell Series software or equal and approved to support PA/VA System complete with links, 24 Port patch panels, cables organizers, Dual redundant modular power supplies and associated accessories as follows; | No | 2 | | |
| G13 | Allow use and configuration of the above system with Structured Cabling done by others (Cables by others) | Sum | 1 | | |
| G14 | Allow for interconnection and programming of the the above System | Sum | 1 | | |
| G15 | Allow for interfacing with the Master Clock System and Fire Detection & Alarm System as call for and approved by Engineer | Sum | 1 | | |
| **TOTAL C/F TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| G16 | Labeling, Documentation, 1 year Warranties, associated Training and certification. | Sum | 1 | | |
| G17 | Allow for all other accessories, including midcouplers, splice boxes, pigtails, patch cords, brush panels. | Sum | 1 | | |
| G18 | Allow for operational training on the Public Address system. | Sum | 1 | | |
| G19 | Allow for technical training on the Public Address system. | Sum | 1 | | |
| G20 | Any other item necessary to complete installation in this section (Please state) | Sum | 1 | | |
| G21 | Installation, testing & commissioning | Sum | 1 | | |
| **TOTAL C/F TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## COLLECTION SHEET

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| | |
|---|---|
| TOTAL PUBLIC ADDRESS SYSTEM CARRIED TO BILL SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **FIRE ALARM SYSTEM:** | | | | |
| A | Supply and install ddressable 4loops fire alarm panel-Menvier DF 6000 completewith batteries (72hrs standby) and integral charger and printer. | No. | 1 | | |
| B | Power connection to the 13A 4mm2 PVC PVC 3 core cable enclosed in 25 dia.HG high impact concealed PVC conduit. | Lm | 1 | | |
| C | Fire alarm initiating points wired in 2x0.5mm$^2$ FP200 cables enclosed in 25 dia.HG high impact concealed PVC conduit/ cable tray | No. | 100 | | |
| D | Ditto but Fire alarm sounder points | No. | 6 | | |
| E | Fire alarm call points - Menvier MBG814 | No. | 5 | | |
| F | Smoke detector-Menvier MAP820+MAB800 | No. | 70 | | |
| G | Heat detectors MAH830+MAB800. | No. | 7 | | |
| H | Sounders -Menvier MAS850+MAB800 | No. | 7 | | |
| I | Interface unit - Menvier MOI240 | No. | 2 | | |
| J | Spare glasses for fire alarm breakglass contacts. | No. | 10 | | |
| K | Working drawings to approval. | Item | | | |
| L | Demonstrate operation of the complete fire alarm system in presence of manufacturer's representative. | Item | | | |
| M | Connect, test and commission the fire alarm system. | Item | | | |
| N | Train client's staff on operation of ths fire alarm system. | Item | | | |
| O | Operation manuals and 3 sets of record drawings. | Item | | | |
| P | Allow for any other works indicated on the drawings or in the specification but not listed above to complete the installation. | Item | | | |
| **TOTAL FIRE ALARM SYSTEM TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 2 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **K.STANDBY GENERATOR** | | | | |
| K1 | Allow for disconnection, relocation and reinstallation of the existing 100KVA generator from the existing terminal building to new terminal building. | No | 1 | | |
| **TOTAL STANDBY GENERATOR TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **L: ICT**<br>All equipment and cabling will be fully integrated into the Kenya Airport Authority's existing IT infrastructure at HQ and tested to ensure functionality and compliance with standards.<br><br>For the supply, Installation, testing & commissioning of the following complete with associated accessories as specified and shown on the drawings. | | | | |
| L1 | FIDS Screens (Industrial-Grade, Marine Weatherproof, 55-inch LED, 24/7 operation, with Mini PC Core i7, Windows 11) (Supply, Configure, Install, and Test) | PCS | 6 | | |
| L2 | Cisco Catalyst 9200 Series Switch (24 Ports, PoE, Managed) (Supply, Configure, Install, and Test) | PCS | 5 | | |
| L3 | Cisco Catalyst 9300 Series Switch (48 Ports, PoE, Advanced Security) (Supply, Configure, Install, and Test) | PCS | 1 | | |
| L4 | Cisco Aironet 2800 Series Access Points (Dual Band, Wi-Fi 6) (Supply, Configure, Install, and Test) | PCS | 4 | | |
| G5 | Cisco IP Phone 7841 (Basic VoIP Phone, 4 Lines, PoE) (Supply, Configure, Install, and Test) | PCS | 18 | | |
| G6 | Cisco Unified Communications Manager (CUCM) with GSM Gateway for External Calls (Supply, Configure, Install, and Test) | PCS | 1 | | |
| G7 | Structured Cabling to Main Equipment Room (Fiber & Copper) (Supply, Configure, Install, and Test) | LOT | 1 | | |
| G8 | Siemon CAT6A Certified Cable (High-Speed Ethernet, 10Gbps, Shielded, 305m per Box) (Supply, Configure, Install, and Test) | BOX | 20 | | |
| G9 | 49-Core Single Mode Fiber Optic Cable (1,500 Meters, Outdoor Armored) (Supply, Configure, Install, and Test) | LM | 1300 | | |
| G11 | Double CAT6A Dual Gang Faceplates (120 Data Points, High-Density) (Supply, Configure, Install, and Test) | PCS | 120 | | |
| G12 | CCTV System (Hikvision/Dahua, 4K Cameras, Night Vision, AI Analytics, 30 Cameras, Video Wall, 30 Days Storage Capacity) (Supply, Configure, Install, and Test) | SYS | 1 | | |
| | NOTES:<br><br>FIDS Screens: Installed at Check-in Counters, Departure Lounge, Arrivals Hall, and Baggage Claim Area.<br><br>CCTV Cameras: Covering Terminal Entrances & Exits, Check-in Counters, Security Checkpoints, VIP Lounge, Baggage Handling Areas, and Parking Lots.<br><br>Data Points: Located in Airport Offices, Security Desks, Operations Control, and Key Administrative Points. | | | | |
| **TOTAL ICT INSTALLATIONS C/F TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **M: ELECTRICAL BUILDERS WORK AND PROVISIONAL SUM** | | | | |
| | For the supply, Installation, testing & commissioning of the following complete with associated accessories as specified and shown on the drawings. | | | | |
| M1 | 150mm diameter heavy duty pvc pipes for power and data services. | LM | 100 | | |
| M2 | 100mm diameter heavy duty pvc pipes for power and data services. | LM | 100 | | |
| M3 | Allow for trenching and back filling on soft soil, rocks and paved surfaces : 450mm wide x 1000mm deep | LM | 100 | | |
| M4 | Allow for the reistatement of disturbed paved areas | SM | 10 | | |
| M5 | Supply and instal hatari tiles | No | 300 | | |
| M6 | Electrical masonly manholes measuring 1000x800x600 deep complete with medium duty cast iron manhole cover. | No | 8 | | |
| M7 | Provisional sum for relocation of KPLC power line relocation | | | | |
| M8 | Provisional Sum for KPLC power connection | | | | |
| M9 | Allow for KPLC Attendance | % | 7 | | |
| M10 | Allow for KPLC profit and overhead | % | 7 | | |
| **TOTAL ELECTRICAL BUILDER'S WORKS TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No.6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **5.0** | **BILL NO. 6: FIREFIGHTING INSTALLATIONS**<br><br>**Supply, deliver, install, test** and **commission** the following **UL listed** and **FM approved** firefighting equipment and fittings as described and shown on the drawings to European Standards, fixed to manufacturer's printed instructions and to Engineer's approval for **proper** and **satisfactory functioning** of the **system** to **withstand test pressure** up to **20 bars. Rates MUST be Inclusive of V.A.T.** | | | | |
| 5.1 | *NFPA rated fire pump set copmrising of Two electric close coupled pumps 500GPM fluid flow on discharge per pump and one diesel powered pump of same capacity or bigger, Control card and associated installation and programming including country of origin factory visit and training for 4 KAA Engineers.* | 1 | No. | | |
| **5.2** | **Fire Hose Reel and landing valves** | | | | |
| i) | Cabinet mounted swinging type **hose reel** with **Ø25mm x 30m** long rubber fire hose, nylon Jet spray on/off nozzle and mounting bracket. | **4** | No | | |
| ii | Double door fire cabinet, wall mounted of minimum dimensions 780mmx1600mmx310mm,powder coated , lockable as per NFPA standards and powder coated. Minimum sheet thickness is 1mm. | **4** | No | | |
| iii | Supply and install fire hydrant landing valves 2.5" female outlet and all associated fittings as directed by the Mechanical Engineer including all associated civil works for installation | **4** | No | | |
| iv | Supply flexible hoses with quick release couplings 2.5" male and branch pipes. | **4** | Sets | | |
| **5.3** | **Fire Sprinkler**<br><br>*Sprinkler head flow rate shall not to be less than 60 litres/min and minimum operating pressure not to be less than 0.5bar.* | | | | |
| ii) | 25x½"NPT automatic brass **Pendant convention pattern sprinkler head** for ceiling conceale installation cwith a universal deflector and red bulb for 68°C operating temperature. | **120** | **No** | | |
| **5.4** | Pipes and Fittings<br><br>*The following red and hot-dipped galvanized Grade B steel pipe and fittings for **grooved end connection** fire protection* | | | | |
| **A** | **Schedule 40 Pipe** | | | | |
| i) | 25mm dia pipe | **300** | Lm | | |
| ii) | 40mm dia pipe | **200** | LM | | |
| ii) | 50mm ditto | **100** | Lm | | |
| iii) | 65mm ditto | **80** | Lm | | |
| **B** | **Elbows/Bends** | | | | |
| i) | 25x½" dia 90º end of run fitting with female thread | **120** | No | | |
| ii) | 25mm dia 90º elbow | **20** | No | | |
| iii) | 40mm dia 90º elbow | **8** | No | | |
| iii) | 50mm ditto | **14** | No | | |
| iv) | 65mm ditto | **6** | No | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 5 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |
| | **ELECTRICAL WORKS - SUMMARY SHEET** | | | | |
| | LIGHTING & POWER | | | | |
| | TRUNKING | | | | |
| | POWER DISTRIBUTION | | | | |
| | LIGHTNING | | | | |
| | PARKING LIGHTS | | | | |
| | SOLAR POWER | | | | |
| | PA SYSTEM | | | | |
| | FIRE ALARM | | | | |
| | GENERATOR | | | | |
| | ICT INSTALLATIONS | | | | |
| | BUILDER'S WORKS | | | | |
| TOTAL CARRIED TO GRAND SUMMARY | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No.6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **5.0** | **BILL NO. 6: FIREFIGHTING INSTALLATIONS**<br><br>**Supply, deliver, install, test** and **commission** the following **UL listed** and **FM approved** firefighting equipment and fittings as described and shown on the drawings to European Standards, fixed to manufacturer's printed instructions and to Engineer's approval for **proper** and **satisfactory functioning** of the **system** to **withstand test pressure** up to **20 bars. Rates MUST be Inclusive of V.A.T.** | | | | |
| 5.1 | *NFPA rated fire pump set copmrising of Two electric close coupled pumps 500GPM fluid flow on discharge per pump and one diesel powered pump of same capacity or bigger, Control card and associated installation and programming including country of origin factory visit and training for 4 KAA Engineers.* | 1 | No. | | |
| **5.2** | **Fire Hose Reel and landing valves** | | | | |
| i) | Cabinet mounted swinging type **hose reel** with **Ø25mm x 30m** long rubber fire hose, nylon Jet spray on/off nozzle and mounting bracket. | **4** | No | | |
| ii | Double door fire cabinet, wall mounted of minimum dimensions 780mmx1600mmx310mm,powder coated , lockable as per NFPA standards and powder coated. Minimum sheet thickness is 1mm. | **4** | No | | |
| iii | Supply and install fire hydrant landing valves 2.5" female outlet and all associated fittings as directed by the Mechanical Engineer including all associated civil works for installation | **4** | No | | |
| iv | Supply flexible hoses with quick release couplings 2.5" male and branch pipes. | **4** | Sets | | |
| **5.3** | **Fire Sprinkler**<br><br>*Sprinkler head flow rate shall not to be less than 60 litres/min and minimum operating pressure not to be less than 0.5bar.* | | | | |
| ii) | 25x½"NPT automatic brass **Pendant convention pattern sprinkler head** for ceiling conceale installation cwith a universal deflector and red bulb for 68$^{o}$C operating temperature. | **120** | **No** | | |
| **5.4** | Pipes and Fittings<br><br>*The following red and hot-dipped galvanized Grade B steel pipe and fittings for **grooved end connection** fire protection* | | | | |
| **A** | **Schedule 40 Pipe** | | | | |
| i) | 25mm dia pipe | **300** | Lm | | |
| ii) | 40mm dia pipe | **200** | LM | | |
| ii) | 50mm ditto | **100** | Lm | | |
| iii) | 65mm ditto | **80** | Lm | | |
| **B** | **Elbows/Bends** | | | | |
| i) | 25x½" dia 90º end of run fitting with female thread | **120** | No | | |
| ii) | 25mm dia 90º elbow | **20** | No | | |
| iii) | 40mm dia 90º elbow | **8** | No | | |
| iii) | 50mm ditto | **14** | No | | |
| iv) | 65mm ditto | **6** | No | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No.6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **C** | **Tees** | | | | |
| i) | 25mm dia equal tee | **36** | No | | |
| | 40mm dia equal tee | **26** | No | | |
| ii) | 50mm ditto | **15** | No | | |
| iii) | 65mm ditto | **12** | No | | |
| **D** | **Cross** | | | | |
| i) | 50mm dia equal cross | **21** | No | | |
| ii) | 65mm ditto | **12** | No | | |
| **E** | **Coupling** | | | | |
| i) | 25mm dia coupling | **20** | No | | |
| ii) | 50mm ditto | **20** | No | | |
| iii) | 65mm ditto | **20** | No | | |
| **F** | **Reducing bushes** | | | | |
| i) | 50x25mm dia reducing bush | **15** | No | | |
| ii) | 65x50mm ditto | **15** | No | | |
| **G** | **Valves and Controls** | | | | |
| **1** | **Gate Valve** | | | | |
| i) | 50mm dia grooved end OS&Y **gate valve** to ISO 6182 with PN16 working pressure. | **6** | No | | |
| **2** | **Non Return/Check Valve** | | | | |
| i) | 50mm dia grooved end **check valves** ISO6182 with PN 16 working pressure. | **1** | No | | |
| ii) | 100mm ditto | **1** | No | | |
| **3** | **Zone Control Valve** | | | | |
| i) | Zone control valve for 65**mm** dia pipe comprising: **unit of signal butterfly valve**, **waterflow indicator**, **pressure gauge** and **test & drain valve** assembled on fire pipeline to separates the fire area into small distribution zone for indication and control for fire sprinkler head or test valve activation. | **2** | No | | |
| 4 | Supply and install anchors for all pipes | **Sum** | sum | | |
| 5 | Paint and label all installation to 3 coats as per standard | Sum | Sum | | |
| **5.4** | **Portable Fire Extinguishers** | | | | |
| **A** | **Water/$CO_2$ Fire Extinguisher** | | | | |
| i) | **9-Litres $H_2O$/$CO_2$** gas portable fire extinguisher complete with cap, syphon-tube, $CO_2$ cartridge, flexible rubber hose and nozzle | **6** | No | | |
| **B** | **$CO_2$ Gas Fire Extinguisher** | | | | |
| i) | **5kg $CO_2$ gas** portable fire extinguisher complete with squeze grip operating head and discharge nozzle | **6** | No | | |
| **C** | **Fire Blanket** | | | | |
| i) | 1.8x1.8m **fire blanket** with 3-layer cloth, protective vapour barrier and easy for deployment to BS EN 1869= | **6** | No | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No.6 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

# COLLECTION SHEET

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| | |
|---|---|
| TOTAL FIRE-FIGHTING INSTALLATIONS CARRIED TO BILL SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | **WATER TANK**<br>(All Provisional) | | | | |
| 2.01 | PRESS STEEL WATER TANK - Elevated Tank<br><br>Press Steel Water Tank of approximate Capacity 48,000Litres, 4000 x 4000 x 3000mm in dimension. The tank should of 1000x1000mm hot dip galvanised pannels with an inlet of diameter 50, an outlet of diameter 100mm for fire protection line and 75mm for domestic water use respectively and an overflow of diameter 65mm. The tank to be on 12m steel tower to Engineers details and approval. The domestic water outlet shall be 1000mm above tank floor level while the fure water outlet shall be 50mm above floor. The tank washaout shall be at the lowest point of the tank to ensure all watrer is drained fully during washing. All associated valves to be included in the quote. Water level indicator in form of a floater to be used and calibtated accordingly. Contractor to provide detailed design and calculations considering soil and wind conditions to be presented to the Engineer for approval. The tank shall be painted white and black (3 finishing coats)BS 223 according to aerodrome safety requlations and anticollision beacon installed at the highest level of the tank. | Item | Sum | | |
| | WATER SUPPLY PIPELINE<br><br>PIPEWORK<br><br>The rate entered against the items in this section shall include for stripping top soil,laying aside and sebsequently replacing over refilled trench,excavation in trench in material other than rock, shuttering where necessary,refilling and compacting and spreading surplus soil evenly over and alongside pipe trench compacting,supply,lay and joint pipes to correct line and invert level.<br><br>Rising main from Borehole to Elevated tank | | | | |
| 2.02 | PN16,OD63HDPE pipe in trenches complete with fittings,bends and ascessories , depth n.e 1200mm | M | 300 | | |
| 2.03 | PN16,DN50 GI pipe to elevated tank; rate to include for requisite associated fittings including bends | M | 100 | | |
| | Distribution mains within the Airstrip | | | | |
| 2.04 | PN10,DN75 GI pipe from elevated tank to distribution pipeline; rate to include for requisite associated fittings including bends | M | 50 | | |
| 2.05 | PN10,OD63HDPE pipe in trenches rate to include for requisite associated fittings including bends,depth n.e 1200mm | M | 1200 | | |
| 2.06 | PN10,OD40HDPE pipe in trenches rate to include for requisite associated fittings including bends,depth n.e 1200mm | M | 145 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | PIPEWORK-FITTINGS AND VALVES | | | | |
| 2.08 | Provide and install PN 10, DN 50 gate valves in chambers, rate to include requisite fittings | Nr | 4 | | |
| 2.09 | Provide and install PN16, DN32 water meter for the supply line | Nr | 1 | | |
| 2.10 | Provide and install PN16, DN32 nonreturn valve for the supply line | Nr | 2 | | |
| | CLASS K: MANHOLES AND PIPEWORK ANCILLARIES | | | | |
| | Chambers | | | | |
| 2.11 | Provide materials and construct masonry washout chamber with diension of 750 x 750mm,depth not exceeding 1200mm with a 125mm thick reinforced concerete cover. | Nr | 4 | | |
| 2.22 | Provide and install 75mm dia. Tank washout oulets with endcaps | Nr | 2 | | |
| | **Electro-Mechanical Works and Associated Works** | | | | |
| | Pump in-take | | | | |
| 3.0.1 | Construct a masonry pump chamber of size 1500mm x 1500mm, depth not exceeding 1500mm. | Nr | 1 | | |
| | Fittings in pump chamber | | | | |
| 3.0.2 | Install PN10 DN50 GS non-return valve threaded type complete with nipples | Nr | 1 | | |
| 3.0.3 | Install and test pressure gauge type Kent or similar approved quality range 0 - 25 kg.cm c/w all connections and bends (installed in GS conduit) | Nr. | 1 | | |
| 3.0.4 | Install DN75 water meter (threaded) type as kent or equal and approved quality range 0-30$m^3$/hr | Nr. | 1 | | |
| 3.0.5 | Allow for balance of system components ( GI bends, nipples, sockets | Lump sum | 1 | | |
| | **PIPE CONNECTIONS FOR THE ELEVATED TANK** | | | | |
| 4.1.1 | Allow for testing, cleansing and sterilising of the Tank and Pipework as specified. | Item | L.S | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | PIPES & FITTINGS | | | | |
| | Supply, Transport to Site and Store and install as applicable, Including Jointing Material, Bolts, Gaskets, Packing, Jointing Glue, etc. | | | | |
| | Inlet Pipework - GI Pipes & fittings; PN16 | | | | |
| 4.1.2 | 50mm dia. flanged ball float valve (Series 1048 Biwater or approved equivalent) | Nr | 1 | | |
| 4.1.3 | 50mm dia. all flanged pipe 300mm long (with puddle flange welded to tank wall panel) | Nr | 1 | | |
| 4.1.4 | 50mm dia. all flanged $90^0$ bend | Nr | 2 | | |
| 4.1.5 | 50mm dia. all flanged pipe 2800mm long | Nr | 1 | | |
| 4.1.6 | 50mm dia. flanged spigot pipe | M | 6 | | |
| 4.1.7 | 50mm dia. flange adaptor | Nr | 1 | | |
| | Outlet Pipework - GI Pipes & fittings; PN16 | | | | |
| 4.1.10 | 75mm dia. flanged bellmouth | Nr | 1 | | |
| 4.1.11 | 75mm dia. all flanged pipe 1m long with puddle flange welded to Tank Base panel | Nr | 1 | | |
| 4.1.10 | 75mm dia. flanged spigot pipe (cut to suit on site) | M | 4 | | |
| 4.1.11 | 75mm dia. flange adaptor | Nr | 2 | | |
| 4.1.12 | 75mm dia. all flanged $90^0$ bend | Nr | 2 | | |
| 4.1.13 | 75mm dia. coupling | Nr | 2 | | |
| 4.1.14 | 75mm dia. flanged spigot pipe 1.2m long | Nr | 2 | | |
| 4.1.15 | 75mm dia. all flanged gate valve (to Euro 20 Series, Type 23 short face to face type valves) as made by PONTA-Mousson (Saint Gobain Pam) or approved equivalent | Nr | 1 | | |
| 4.1.16 | 75mm dia water meter | Nr | 1 | | |
| 4.1.17 | Overflow Pipework - GI Pipes & Fittings to Class PN 16 | | | | |
| 4.1.18 | 75mm dia. Flanged spigot pipe, length 300mm (with puddle flange welded to tank panel | Nr | 1 | | |
| 4.1.19 | 75mm dia. all flanged $90^0$ bend | Nr | 1 | | |
| | Scour Pipework - GI Pipes and fittings; PN16 | | | | |
| 4.1.20 | 75mm dia. Flanged bellmouth (welded to base of tank with water tight joint | Nr | 1 | | |
| 4.1.21 | 75mm dia. all flanged pipe 1.2m long | Nr | 1 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| 4.1.22 | 75mm dia. flanged spigot pipe 10m long (cut to suit on site) | Nr | 1 | | |
| 4.1.23 | 75mm dia. flange adaptor | Nr | 1 | | |
| 4.1.24 | 75mm dia. all flanged $90^0$ bend | Nr | 1 | | |
| 4.1.25 | 75mm dia. flanged spigot pipe 1.2m long | Nr | 2 | | |
| 4.1.26 | 75mm dia. Coupling | Nr | 1 | | |
| 4.1.27 | 75mm dia. all flanged gate valve (to Euro 20 Series, Type 23 short face to face) as made by PONT-A-Mousson (Saint Gobain Pam) or approved equivalent (Mark 13) | Nr | 1 | | |
| 4.1.28 | 75mm dia. single flanged $90^0$ bend | Nr | 1 | | |
| | Drainage for scour pipe | | | | |
| 4.1.29 | OD90 u.PVC pipe, SDR 34 drain pipe in trenches; depth n.e 1200mm | m | 15 | | |
| | **CLASS K: MANHOLES AND PIPEWORK ANCILLARIES** | | | | |
| | Valve Chambers | | | | |
| | Note: Items for work in this shall include:- | | | | |
| | Excavation, preparation of surfaces, disposal of excavated material, shoring sides of excavation, backfilling and removal of redundant services. | | | | |
| 4.1.31 | Provide materials and construct masonry valve chamber with dimensions of 1500x1500mm, depth not exceeding 1500mm | Nr | 2 | | |
| | REINFORCED CONCRETE FOUNDATIONS | | | | |
| | Excavation | | | | |
| | The rates shall include for all strutting, shuttering, stabilising the excavation faces, and keeping the excavation free of water by pumping, bailing or other means. | | | | |
| | Excavate in common material, part backfill after construction and remainder, cart away to tips or use as fill on site, all as directed by the Engineer. | | | | |
| 4.1.32 | Maximum depth n.e. 1.0 m | $m^3$ | 30 | | |
| 4.1.33 | -Ditto- but maximum depth 1.0 m to 2.0 m | $m^3$ | 30 | | |
| | Concrete Works | | | | |
| | Provide, mix and place concrete as directed | | | | |
| 4.1.34 | Plain concrete Class 15/20 in 75mm blinding layer under base slab | $m^3$ | 20 | | |
| | Guaranteed Strength Reinforced Concrete Class 25/20. Maximum Aggregate as Described in:- | | | | |
| 4.1.35 | Column Base Slab | 3 $m^3$ | 6 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
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| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| 4.1.36 | Columns | 3 $m^3$ | 3 | | |
| | **Reinforcement** | | | | |
| | Provide and Fix High Tensile Steel Reinforcement to BS 4466 including Cutting, Bending, Propping with Spacers and Tying as Specified:- | | | | |
| 4.1.37 | T12 steel bars in Column Bases | Kg | 540 | | |
| 4.1.38 | T12 steel bars in columns | Kg | 180 | | |
| 4.1.39 | T8 steel links in columns | Kg | 40 | | |
| | **Formwork** | | | | |
| 4.1.40 | Formwork (cut and fix in position sawn timber formwork or equivalent):Plane vertical | | | | |
| 4.1.41 | Formwork for column bases | $M^2$ | 8 | | |
| 4.1.42 | Formwork for columns stubs | $M^2$ | 11 | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
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| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

# SUMMARY SHEET

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| **TOTAL CARRIED TO BILL SUMMARY** | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **1.0** | **SANITARY FITTINGS**<br><br>**Supply, Install, Test and Commission the following sanitary fittings as specified:** | | | | |
| A | SHOWER MIXER FITTINGS<br>3/4 " shower mixer unit, heavy pattern, built in type comprising :- 1 pair No. 628-20 stopcocks ECCP, 1 No. 060 bath spout, CP, 178mm long, with sliding wall flange, 1 No. 061 four way control cock, CP, 1 No.027 overhang shower arm, CP, with sliding wall flange, 1 No. 068BJ 1/2" x 50mm diameter shower rose, CP, cone shaped, with ball joint connection. As Cobra Or equal and approved. | 6 | Nos. | | |
| B | TOWEL RAIL<br>450mm long wall mounted Chrome plated towel rail as JAQUAR Code. ACN-CHR-1111BNM equal and approved. | 6 | Nos. | | |
| C | SOAP DISH<br>Wall mounted Chrome plated soap dish as JAQUAR Code: ACN-CHR-1131N OR equal and approved. | 6 | Nos. | | |
| D | STAINLESS STEEL KITCHEN SINK<br>Heavy gauge single bowl, Single drainer Stainless steel kitchen sink overall size 1000 x 500mm and bowl size 420 x 355 x 150mm, Complete with 40mm diameter, Plastic plate chain waste and plug, plastic bottle trap and 20mm diameter HANSGROHE #14870000 sink mixer with overarm swivel outlet. As ASL 140or equal and approved. | 3 | Nos. | | |
| E | WATER CLOSET (W.C.) PAN<br>Duravit wall hang water closet pan;122cm with cistern 12cm and flushing valve system | 24 | Nos. | | |
| F | WASH HAND BASIN - COUNTERTOP<br>DURAVIT "D-CODE" COUNTERTOP VANITY BASIN in white vitreous china,size 500 x 430mm with one tap hole No. #033754000.Complete with lever action spray mixer, 15mm diameter with thermostatic mixing valve, chrome plated waste fitting; 32mm diameter chrome plated bottle trap or equal and approved. | 26 | Nos. | | |
| G | BOWL URINAL<br>DURAVIT "D-CODE" bowl urinal No. 082830 in white vitreous china complete fixture with comprising pair wall hangers; 40mm chrome plated domed outlet grating; No. 40mm bottle P- trap with 75mm seal; hangers and fixings OR equal and approved. | 12 | Nos. | | |
| H | BOWL URINAL flush valve<br>DOCOLTRONIC - Concealed Urinal Valve. Docoltronic Built-In Code 00442316, Diameter: 1/2", Operates perfectly in high and low pressure, from 0.2 to 4 kgf/cm$^2$ or from 3 to 57 psi. It also operates on 4 AA type batteries, assuring independent product use in case of power failure. Or equal and approved. | 12 | Nos. | | |
| I | URINAL DIVIDERS<br>DURAVIT Ceramic urinal partition White Alpine color Or equal and approved. | 5 | Nos. | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| A | FREE STANDING STAINLESS STEEL KITCHEN SINK<br>Heavy gauge Stainless steel kitchen sink as VULCAN 'DCBPS Double Bowl Pot sink' or equal and approved<br>Overall size 1850 x 650 x 1060mm high<br>Bowl size 600 x 500 x 300mm deep<br>Double Bowl Double drainer.<br>Cold pressed bowl AISI 304CR NI grade stainless steel with 40mm waste outlet hole complete with:-<br>Chrome plate chain waste and plug, plastic bottle "P" trap<br>150mm high splash back to rear<br>Stainless steel legs with adjustable foot pieces<br>Heavy duty backing sheet with bitumastic sound deadening<br>Sink mixer with overarm swivel spout with extractable mouseeur. Or equal and approved | 2 | Nos. | | |
| B | Supply and install chrome plated mixer taps, with electronic sensor and a manyal overide | 26 | No | | |
| C | Supply and install backlit( LED) mirror 400X 800mm | 10 | No | | |
| D | Supply and in stall jumbo toilet holders as Mediclinics or equivalent and approved | 30 | No | | |
| E | Suppy and install stainless steel squere floor drains | 42 | No | | |
| F | Supply and install arabic shower including angle valve in each of the Washrooms | 32 | No | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
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| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## SANITARY FITTINGS

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|---|---|
| TOTAL SANITARY FITTINGS TO BILL SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **2.0** | **INTERNAL COLD WATER SUPPLY INSTALLATION**<br>**Supply, install, test and commission the following complete:**<br><br>**General Note:-**<br>Price of pipework to include the cost of couplings, connectors, fixing brackets, holderbats, plugs and jointing to fittings etc., together with marking of pipe routes on walls and Floors for wall chasing and holes cutting by others all as required in the pipework installation.<br>The following in PN 20PPRC and CPVC conforming to the current European standards for PPR and CPVC ASTM 441 installations and to the Engineers approval, pipe jointing shall be by solvent cement weldedjoints for CPVc and polyfusion or use of electric coupling. Rates must allow for all Metal/Plastic threaded adaptors where required for the connection of sanitary fixtures, support raceways , isolating sheaths, elastic materials, expansion arms and bends, crossovers etc.<br><br>PIPEWORK | | | | |
| A | 63mm diameter PPR pipe | 250 | Mtrs | | |
| B | 50mm diameter ditto | 100 | Mtrs | | |
| C | 40mm diameter ( CPVC) | 150 | Mtrs | | |
| D | 32mm diameter ditto | 200 | Mtrs | | |
| E | 25mm diameter ditto | 200 | Mtrs | | |
| | BENDS | | | | |
| F | 63mm diameter bend | 15 | Nos. | | |
| G | 50mm diameter bend | 15 | Nos. | | |
| H | 40mm diameter bend( CPVC) | 40 | Nos. | | |
| I | 32mm diameter bend( CPVC) | 50 | Nos. | | |
| J | 25mm diameter bend( CPVC) | 50 | Nos. | | |
| | TEES | | | | |
| K | 63 x 63 x 63mm ditto | 4 | Nos. | | |
| L | 63 x 63 x 50mm ditto | 4 | Nos. | | |
| M | 63 x 63 x 40mm ditto | 4 | Nos. | | |
| N | 63 x 63 x 32mm ditto | 5 | Nos. | | |
| O | 63 x 63 x 25mm ditto | 4 | Nos. | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| A | 50 x 50 x 50mm ditto | 4 | Nos. | | |
| B | 50 x 50 x 40mm ditto | 6 | Nos. | | |
| C | 32 x 32 x 32mm ( CPVC) | 14 | Nos. | | |
| D | 32 x 32 x 25mm ( CPVC) | 30 | Nos. | | |
| E | 32 x 25 x 25mm ditto | 15 | Nos. | | |
| F | 25 x 25 x 25mm ditto | 20 | Nos. | | |
| | MALE / FEMALE THREADED ELBOWS | | | | |
| G | 50mm diameter bend | 15 | Nos. | | |
| H | 32mm diameter bend | 15 | Nos. | | |
| I | 25mm diameter bend | 15 | Nos. | | |
| | FEMALE/MALE THREADED ADAPTOR | | | | |
| J | 50mm diameter threaded adaptor | 10 | Nos. | | |
| K | 32mm diameter threaded adaptor | 40 | Nos. | | |
| L | 25mm diameter threaded adaptor | 40 | Nos. | | |
| | SOCKETS | | | | |
| M | 63mm diameter | 15 | Nos. | | |
| N | 50mm diameter | 15 | Nos. | | |
| O | 40mm diameter | 20 | Nos. | | |
| P | 32mm diameter | 50 | Nos. | | |
| Q | 25mm diameter | 50 | Nos. | | |
| | UNIONS | | | | |
| R | 63mm diameter | 8 | Nos. | | |
| S | 50mm diameter | 8 | Nos. | | |
| T | 40mm diameter | 4 | Nos. | | |
| U | 32mm diameter | 10 | Nos. | | |
| V | 25mm diameter | 10 | Nos. | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| A | FLEXIBLE CONNECTIONS TO SANITARY FITTINGS | | | | |
| | There are to be a maximum length of 300 mm each complete with connecting couplers per length. | 35 | Nos. | | |
| B | ANGLE VALVES | | | | |
| | Chrome plated angle valve as COBRA or equal and approved. | 40 | Nos. | | |
| C | GATE VALVES TO BS 5151:1974 | | | | |
| | 50mm diameter high pressure screw down full way non-rising stem wedge gate valve to BS 5154 for series B rating, with wheel and head joints to tubing. The gate valve to be a PEGLER or approved equivalent. | 6 | Nos. | | |
| D | 32mm diameter | 15 | Nos. | | |
| E | 25mm diameter | 20 | Nos. | | |
| F | 63mm diameter high pressure screw down full way non-rising stem wedge gate valve to BS 5154 for series B rating, with wheel and head joints to tubing. The gate valve to be a PEGLER or approved equivalent. | 6 | No | | |
| G | Flexible hose connectors 34X 34 inch | 86 | Nos | | |
| H | Provide materials and construct masonry manhole chamber with diension of 750 x 750mm,depth not exceeding 1200mm with a 125mm heavy duty cast iron manhole cover. | No | 8 | | |
| I | Supply and install KAA branded( Cusomised)Heavy duty cast iron manhole covers to the approval the Engineer | No | 8 | | |
| **3.0** | **INTERNAL HOT WATER SUPPLY INSTALLATION** | | | | |
| | **Supply, install, test and commission the following complete:** | | | | |
| | **General Note:-** | | | | |
| | Price of pipework to include the cost of couplings, connectors, fixing brackets, holderbats, plugs and jointing to fittings etc., together with marking of pipe routes on walls and Floors for wall chasing and holes cutting by others all as required in the pipework installation. | | | | |
| | The following in PN 20PPRC conforming to the current European standards for PPR installations and to the Engineers approval, pipe jointing shall be by polyfusion or use of electric coupling. Rates must allow for all Metal/Plastic threaded adaptors where required for the connection of sanitary fixtures, support raceways , isolating sheaths, elastic materials, expansion arms and bends, crossovers etc. | | | | |
| | Supply and install solar water heater as solar hart 200L hot water receiver with 5KW electric heater element. System to have a recirculatory pump and all pipes insulated | 4 | No | | |
| | PIPEWORK | | | | |
| A | 32mm diameter ditto | 105 | Mtrs | | |
| B | 25mm diameter ditto | 65 | Mtrs | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | BENDS | | | | |
| C | 32mm diameter bend | 50 | Nos. | | |
| D | 25mm diameter bend | 50 | Nos. | | |
| | TEES | | | | |
| E | 32 x 32 x 32mm ditto | 50 | Nos. | | |
| F | 32 x 25 x 25mm ditto | 50 | Nos. | | |
| G | 25 x 25 x 25mm ditto | 50 | Nos. | | |
| | SOCKETS | | | | |
| H | 32mm diameter | 4 | Nos. | | |
| I | 25mm diameter | 9 | Nos. | | |
| | UNIONS | | | | |
| J | 32mm diameter | 8 | Nos. | | |
| K | 25mm diameter | 8 | Nos. | | |
| | MALE / FEMALE THREADED ELBOWS | | | | |
| L | 25mm diameter bend | 28 | Nos. | | |
| | FEMALE/MALE THREADED ADAPTOR | | | | |
| M | 32mm diameter threaded adaptor | 28 | Nos. | | |
| N | 25mm diameter threaded adaptor | 28 | Nos. | | |
| | GATE VALVES TO BS 5151:1974 | | | | |
| O | 32mm diameter high pressure screw down full way non-rising stem wedge gate valve to BS 5154 for series B rating, with wheel and head joints to tubing. The gate valve to be a PEGLER or approved equivalent. | 5 | Nos. | | |
| P | 25mm diameter | 6 | Nos. | | |
| Q | angle valves | 26 | No | | |
| R | STERILIZATION | | | | |
| | Allow for sterilization including flushing out water and chlorine to the satisfaction of the Engineer. | Item | Sum | | |
| S | TESTING AND COMMISSIONING | | | | |
| | Test and commission the entire internal water supply to the satisfaction of the Engineer. | Item | Sum | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## INTERNAL COLD AND HOT WATER SUPPLY

BROUGHT FORWARD FROM PAGE 182 .....

BROUGHT FORWARD FROM PAGE 183 .....

BROUGHT FORWARD FROM PAGE 184 .....

BROUGHT FORWARD FROM PAGE 185 .....

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| TOTAL COLD WATER & HOT WATER SUPPLY TO BILL SUMMARY | |
|---|---|

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **4.0** | **FOUL AND WASTE WATER DRAINAGE**<br>Supply, install, test and commission the following complete:<br>**General Note.**<br>**Prices for pipework shall include the cost for couplings, connectors and jointing to fittings appliances etc., and fixing brackets all as required in the pipework installation, together with marking pipe routes on walls and floors for wall chasing and holes cutting by others. Note for U.P.V.C. pipework: All UPVC couplings, branches, tees etc., are to be formed strictly in accordance with the manufacture's interactions. Jointing pipework by " heat formed sockets" etc., shall not be accepted.**<br>**U.P.V.C. Soil, Waste and Ventilation Pipes and fittings to B.S. No. 5255**<br><br>PIPEWORK | | | | |
| A | 40mm waste pipe fixed to wall or wall chase including approved pipe clips or brackets | 200 | Mtrs | | |
| B | 50mm – ditto- | 200 | Mtrs | | |
| C | 100mm, Class 41 grey drain pipe fixed to wall surface or boxed to architect's detail | 100 | Mtrs | | |
| | UNDERGROUND UPVC PIPEWORK TO BS 4660:1963 GOLDEN BROWN SERIES | | | | |
| D | 100mm soil and waste pipe laid in or under concrete Floor slab or underground | 220 | Mtrs | | |
| E | 150mm – ditto- | 210 | Mtrs | | |
| | SWEEP BEND | | | | |
| F | 40mm diameter | 114 | Nos. | | |
| G | 50mm diameter | 8 | Nos. | | |
| H | 100mm short radius bends | 3 | Nos. | | |
| I | 100mm long radius bends | 2 | Nos. | | |
| | SWEEP TEE | | | | |
| J | 40mm single sweep tee | 6 | Nos. | | |
| K | 50mm single ditto | 4 | Nos. | | |
| L | 100mm ditto | 1 | Nos. | | |
| | ACCESS CAP | | | | |
| M | 40mm access cap | 4 | Nos. | | |
| N | 50mm access cap | 4 | Nos. | | |
| O | 100mm access cap | 4 | Nos. | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | BOSS CONNECTION | | | | |
| A | 40 x 100mm diameter boss connection | 4 | Nos. | | |
| B | 50 x 100mm diameter boss connection | 9 | Nos. | | |
| C | No. 125 WC CONNECTOR | 14 | Nos. | | |
| D | WEATHERING APRON TERRAIN No. 131 | 4 | Nos. | | |
| E | VENT COWL TERRAIN No. 150.2 | 4 | Nos. | | |
| F | FLOOR TRAP | | | | |
| | Floor trap as " Key Terrain" 281.3 trapped Floor gully, 282.6 Floor gully inlet and grating. | 50 | Nos. | | |
| G | GULLY TRAP | | | | |
| | Gully trap chamber size 250 x 250mm, approximately 400mm deep in 150mm blockwork with cement mortar joints, on 150mm thick mass concrete slab and plastered inside for 100mm trap and hopper. 40mm thick, 250 x 250mm P.C.C cover to gully trap chamber and provided with 40mm ventilating hole. | 8 | Nos. | | |
| H | INSPECTION CHAMBER | | | | |
| | Internal chambers not to exceed 1070 x 910mm and depth not to exceed 2000mm below finished floor or ground level. Wall thickness should be 150mm blockwork and it should have concrete base and rendered concrete benching 1:3:6 mix. The cover to be cast iron Grade "B" medium duty to BS 497 with double seal. | 6 | Nos. | | |
| I | DRAIN CHANNEL | | | | |
| | Allow for the construction of 200mm wide Kitchen Floor drain with S.S gratings. Depth- 150mm. Slope 1:150. To S.E details | 12 | Mtrs | | |
| J | Test and commission the entire internal drainage system to the satisfaction of the Engineer. | Item | Sum | | |
| **TOTAL FOUL & WASTE WATER DRAINAGE TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## FOUL & WASTE WATER DRAINAGE

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BROUGHT FORWARD FROM PAGE 188

| | |
|---|---|
| TOTAL FOUL AND WASTE WATER DRAINAGE TO BILL SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **5.0** | **FIRE FIGHTING** | | | | |
| | **Supply and install the following fire fighting equipment and fittings as described and shown on the drawings** | | | | |
| | PORTABLE FIRE EXTINGUISHER | | | | |
| A | 4.5kg carbon dioxide gas extinguisher complete with refill cartridges and wall fixing brackets and complying with B.S 5423 | 6 | Nos. | | |
| B | 6kg dry chemical powder portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets and complying with B.S 5423 | 6 | Nos. | | |
| C | FIRE BLANKETS | | | | |
| | 1.8metre x 1.2metre ***Fire Blanket*** manufactured to BS EN 1869:1997 and BSI Kite marked, with slim-line design with rigid plastic case, plastic that case can be wiped maintaining hygiene in kitchen environments, Includes hole so that the fire blanket can quickly and easily be wall-mounted, hinged base and complete with toggles for quick and easy to use in the case of a fire emergency | 6 | Nos. | | |
| D | FIRE FIGHTING HOSE REELS | | | | |
| | Supply and install:-<br>Make: Similar or equal and approved to 'TG' Series Hose Reels type with the following characteristics: Manual operation Swinging type Delivery valves 25mm BSP inlet to B.S 1010 Mild steel feed to B.S 1387 Mild steel feed to B.S 1387. | 6 | Nos. | | |
| | FIRE FIGHTING PIPEWORK | | | | |
| | All pipework shall be galvanized mild steel to B.S 1387. Class 'B' | | | | |
| E | 32mm diameter pipe | 100 | Mtrs | | |
| F | 40 mm diameter pipe | 50 | Mtrs | | |
| G | 50 mm diameter pipe | 100 | Mtrs | | |
| | BENDS | | | | |
| H | 25mm diameter bend | 16 | Nos. | | |
| I | 32mm diameter bend | 18 | Nos. | | |
| J | 40mm diameter bend | 8 | Nos. | | |
| K | 50mm diameter bend | 6 | Nos. | | |
| | TEES | | | | |
| L | 50 x 50 x 50mm diameter | 6 | Nos. | | |
| M | 50 x 50 x 40mm diameter | 6 | Nos. | | |
| N | 40 x 40 x 25mm diameter | 2 | Nos. | | |
| O | 40 x 32 x 25mm diameter | 4 | Nos. | | |
| P | 32 x 25mm reducer diameter | 4 | Nos. | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| | GATE VALVES TO BS 5151:1974 | | | | |
| A | 50mm diameter | 2 | Nos. | | |
| B | 25mm diameter | 4 | Nos. | | |
| | SOCKETS | | | | |
| C | 50mm socket adaptor | 20 | Nos. | | |
| D | 40mm ditto | 5 | Nos. | | |
| E | 32mm ditto | 8 | Nos. | | |
| F | 25mm ditto | 3 | Nos. | | |
| | UNIONS | | | | |
| G | 50mm union joint | 4 | Nos. | | |
| H | 40mm union joint | 4 | Nos. | | |
| I | 32mm union joint | 4 | Nos. | | |
| J | 25mm union joint | 4 | Nos. | | |
| K | Allow for primimg and finish painting of installation with 3 No. coats of paint to the Engineers approval. | Item | Sum | | |
| L | TESTING AND COMMISSIONING | | | | |
| | Allow for testing and commissioning the entire fire fighting system to the satisfaction of the Engineer. | Item | Sum | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## FIRE FIGHTING

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BROUGHT FORWARD FROM PAGE 191

| | |
|---|---|
| TOTAL FIRE FIGHTING TO BILL SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **6.0** | **EXTERNAL WATER RETICULATION**<br>Supply, install, test and commission the following as specified<br>All pipes shall be heavy duty black HDPE pressure pipes PN 16 As TOP PIPE or equal and approved; All pipes shall be High density Polyethylene Pipe to ISO4427 SDR 11, PN 16, PE 100; The following in High Density Polythylene HDPE PN16 conforming to the current European standards for HDPE installations and to the Engineers approval. Rates must allow for all Metal/Plastic adaptors where required for the connection of fixtures, support raceways , isolating sheaths, elastic materials, expansion arms and bends, crossovers etc.<br>**Sizes indicate the inside diameters of the pipes**<br>NOTE : ITEMS ARE PROVISIONAL SUBJECT TO REMEASUREMENT | | | | |
| | PIPEWORK | | | | |
| A | 100mm diameter HDPE Pipe | 400 | Mtrs | | |
| | BENDS | | | | |
| B | 100mm diameter bend | 14 | Nos. | | |
| | TEES | | | | |
| C | 100 x 100 x 100mm diameter | 10 | Nos. | | |
| | UNION/FLANGES | | | | |
| D | 100mm diameter | 10 | Nos. | | |
| | TRENCHING | | | | |
| E | Excavate trench, including leveling , ramming bottoms, backfilling ( average 600mm deep) | 600 | Mtrs | | |
| F | PVC SLEEVES | | | | |
| | 200mm diameter pvc pipe | 150 | Mtrs | | |
| G | BALL VALVE | | | | |
| | 100mm diameter high pressure ball valve to be as PEGLAR or equal and approved | 1 | Nos. | | |
| H | MAIN BOOSTER PUMP | | | | |
| | Model : GRUNDFOS CM15-2A Booster Pump. Or equal and approved<br>Head : 35m<br>Flow rate : 10m³/hr<br>Power supply: 2.2kw, 3phase 415v, 50Hz.<br>Complete with: matching pressure vessel, pressure switch, pressure cell, valves, and any other accessories necessary for efficient operation . Pump and accessories to be mounted on a rigid steel framework. Complete with controller. Duty and Standby | 1 | Set | | |
| I | MICRO-TUNNELING | | | | |
| | road crossings by microtunneling for pipe nominal bore 150mm including all works as specified by the Engineer | 10 | Mtrs | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| A | SLUICE VALVE<br><br>100mm diameter sluice valve as manufactured by Glensfield or equal and approved. | 2 | Nos. | | |
| B | SLUICE VALVE CHAMBER<br><br>Valve chamber size 300 x 300 x 600mm deep inside, comprising 200mm thick plain (1:3:6 mix) concrete base, 150mm solid concrete walling with cement mortar joints and 12mm thick inside rendering and formed holes for pipework. 400 x 400 x 40 mm thick R.C.C (MIX C) cover reinforced with B.R.C. NO. 14 with 400mm ventilating/lifting hole. | 2 | Nos. | | |
| C | SLUICE VALVE INDICATOR POST<br><br>Valve indicator post size 90 x 50 x 1200mm high in P.C.C. (MIX C) With enlarged and shaped head, size 225 x 50 with splayed corners, all reinforced with 2 x 12 mm mild steel bars folded back at the enlarged head and with 6mm stirrups 50mm D/c, all fair finished and painted yellow gloss paint and with the letters 'SV' recessed 3mm into the enlarged head and painted black: Post set into and including 400 x 400 x 400mm deep 150mm under finished ground level, including all the necessary excavations, back filling, disposal, form work etc. | 2 | Nos. | | |
| D | FIRE HYDRANT VALVE<br><br>Installed in Fire hydrant chamber, 100mm diameter screwed down inlets and instantaneous female outlets fitted with plugs secured by chains. The hydrant shall be to B.S. 750 type 1. The hydrant valves shall be single headed . The valve shall be complete with hand wheel, quick coupling connection spring loaded type and gun metal blank cap. The Hydrant shall be laid on 100mm dia Hydrant Ring branched off to 80mm dia and Stand Post of 80mm dia. | 6 | Nos. | | |
| E | FIRE HYDRANT HOSE and CABINET<br><br>The external fire hose cabinet to accommodate the hose pipes, branch pipe nozzle and the hydrant outlets shall be fabricated from 1.5m sheet steel. This shall be lockable and provided with center opening glazed doors. The cabinet to be complete the the hose pipes. | 6 | Nos. | | |
| F | GARDEN TAP<br><br>20mm diameter hose bib tap suitable for connecting hose pipe complete with threaded adaptors. The tap to be complete with 1meter long 15mm diameter GMS pipe, bends support, etc. The chrome plated bib tap to be as Cobra ref.108 hose bib taps or equal and approved.as PEGLER or equal and approved | 20 | Nos. | | |
| G | Allow for connecting to existing water supply network. Actual connections to be determined on site including excavations and all pipe materials as instructed by the project manager. | Item | Sum | | |
| H | TESTING AND COMMISSIONING<br><br>Allow for flow and pressure testing the whole of the water supply system during the works progress and on completion to the satisfaction of the Engineer. (Pressure test records to be kept on site with copies given to the Engineer for approval and record) | Item | sum | | |
| **TOTAL CARRIED FORWARD TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

## EXTERNAL WATER RETICULATION

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BROUGHT FORWARD FROM PAGE 194

| | |
|---|---|
| TOTAL WATER RETICULATION TO BILL SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| A | **WASTE WATER MANAGEMENT SYSTEM**<br><br>Allow for kshs. 20,000,000/- for the design supply and installation of an electro mechanical waste water treatment plant 75CM per day. The contractor shall provide concrete chamber designs to be carried out separately under the builders works as approved by the structural Engineer . The byproduct water shall be used to irrigate a minimum of 4000 Square meters of lawns thus the contractor to provide associated irrigation pump and pipe network enough to irrigate lawns as directed and to the approval of Mechanical Engineer. The contractor shall carryout academy based industry training for four Engineers for 8 days including airticket,daily subsistence and facilitation for the team. There shall be a solid waste processing equipment included in the implementation. | Item | Sum | | |
| B | **LIFTS**<br><br>Supply and install 1No, 2 - stop lifts as per specifications Including factory acceptance visit and industry training for two design Engineers and an Architect in manufacturers academy for minimum 5 days | Item | 1 | | |
| **TOTAL FOR WASTE WATER AND BHS MANAGEMENT BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |

# COLLECTION SHEET

SANITARY FITTINGS .....

COLD & HOT WATER SUPPLY .....

FOUL & WASTE WATER DRAINAGE .....

FIRE FIGHTING .....

WATER RETICULATION .....

WASTE WATER SYSTEM

| | |
|---|---|
| TOTAL CARRIED FOWARD TO BILL SUMMARY | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| **ITEM No.** | **D E S C R I P T I O N** | **UNIT** | **QTY** | **RATE** | **AMOUNT KShs cts** |
| **1.0** | **AIR- CONDITIONING UNITS**<br><br>**The Contractor shall supply Materials and labor, deliver, install and commission the air conditioning as described in the specification to the satisfaction of the Airport Engineer or his representative.** | | | | |
| A | AIR COOLING UNIT | | | | |
| A1.01 | Inverter drive system, Mitsubishi or Equivalent and approved. Ceiling cassete, split units 1 phase power supply, cooling capacity 18000Btu, Maximum sound level 48dBA . Refrigerant-Freon R410a | 10 | SET | | |
| A1.02 | Inverter drive system, Mitsubishi or Equivalent and approved. Ceiling cassette , split units 1 phase power supply, cooling capacity 24000Btu , Maximum sound level 48dBA . Refrigerant-Freon R410a | 8 | SET | | |
| A1.03 | Insulated refrigerant piping with 19mm thickness of insulation complete with PVC trucking where required. | 1 | LOT | | |
| A1.04 | Electrical works from the main distribution board to the water proof isolator switch as required, 25mtrs distance for the connection of the AC units and all related electrical works. | 1 | LOT | | |
| A1.05 | Hardware materials for the installation. | 1 | ITEM | | |
| A1.06 | Ducted Washroom Extraction Minimum 20L/S ceiling mounted. Sound level 45dBA at 3M as per spec | 5 | NO | | |
| A1.07 | Supply and install 20G galvanized iron duct | 40 | SM | | |
| A1.08 | Design supply and install and install air cyclones | 6 | SM | | |
| A1.09 | Supply and install canvas connections for toilet extractors | 26 | NO | | |
| A1.10 | Supply and install 300X300 mm extractor grill. | 25 | NO | | |
| **TOTAL AIR CONDITIONERS C/F TO BILL COLLECTION SHEET** | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | BILL No. 6 |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QTY | RATE | AMOUNT KShs cts |
| | **MECHANICAL WORKS - SUMMARY SHEET** | | | | |
| | PLUMBING & DRAINAGE | | | | |
| | WATER SUPPLY | | | | |
| | MECHANICAL WORKS FROM PG 197 | | | | |
| | AIR CONDITIONING | | | | |
| TOTAL CARRIED TO GRAND SUMMARY | | | | | |

| | TITLE: PROPOSED CONSTRUCTION OF TERMINAL BUILDING AND ASSOCIATED WORKS AT UKUNDA AIRSTRIP | | | | GRAND SUMMARY |
|---|---|---|---|---|---|
| ITEM No. | D E S C R I P T I O N | UNIT | QUANTITY | RATE | AMOUNT KShs cts |

# GRAND SUMMARY

| | |
|---|---|
| BILL No. 1 - PRELIMINARIES & GENERAL CONDITIONS | |
| BILL No. 2 - PTB - BASEMENT & EXTERNAL WORKS | |
| BILL No. 3 - PTB - GROUND FLOOR | |
| BILL No. 4 - PTB - MEZZANINE FLOOR | |
| BILL No. 5 - ELECTRICAL & ICT WORKS | |
| BILL No. 6 - MECHANICAL WORKS | |
| SUB-TOTAL | |
| ADD 5% CONTIGENCIES | |
| SUB-TOTAL | |
| ALLOW FOR 16% VAT | |
| GRAND TOTAL CARRIED TO FORM OF TENDER | |

Name and Address of Contractor

Signature & Stamp

| APPENDIX 1 - SITE OFFICE FURNITURE AND EQUIPMENT | | | | | |
|---|---|---|---|---|---|
| **S/R** | **DESCRIPTION** | **UNIT** | **QTY** | **RATE** | **AMOUNT** |
| 1 | Paper Punch Medium | No. | 1.00 | | |
| 2 | Paper Punch Heavy Duty HD23524 | No. | 1.00 | | |
| 3 | Stapler Medium 24/6 | No. | 2.00 | | |
| 4 | Stapler machine Heavy Duty 66/14 100sheets quick loading | No. | 1.00 | | |
| 5 | SSD External Hard Disk 4TB 3.1 | No. | 7.00 | | |
| 6 | Flash Disk 128GB usb3.0 | No | 7.00 | | |
| 7 | Customized HD KAA branded approved Reflector Jackets | No | 12.00 | | |
| 8 | 10mExtension Cables with Power Surge | No | 3.00 | | |
| 10 | Approved or equal to Mobile Phone model with, 12GBRAM; 512GBHDD; 6.9inch; (Quad Camera setup 200MP,50MP,50MP &12MP);5000mAH | No | 7.00 | | |
| 11 | 16Ltrs 3 tap Free standing water dispenser with cabinet capable of discharging hot,cold and normal temperature water | No. | 1.00 | | |
| 12 | Laser Jet Colour Printer with capability of automatic Duplex printing, scanning, copying, and faxing functions. Capable of printing speeds of min 28ppm capable of Wireless Connectivity | No. | 1.00 | | |
| 13 | 3600mmx1200mmx750mm Executive Conference Table with Power and Internet cable management options | No. | 1.00 | | |
| 14 | Executive Office Desk L220 x W190 x H75cm with leather pad with 1200x400x610cm detachable side cabinet with Power and data provisions | No. | 1.00 | | |
| 15 | 1400mm x900mm Office Table with one side lockable 3 drawers with cable management option | No. | 2.00 | | |
| 16 | Executive high back orthopaedic chair | No. | 2.00 | | |
| 17 | High back Office swivel chairs with height adjustment | No | 7.00 | | |
| 18 | Approved or equal headset to Sony WH 1000XM4 wireless noise cancelling | No. | 1.00 | | |
| 19 | Professional Measuring Wheel GWM 32 | No. | 2.00 | | |
| 20 | Digital Vernier Calliper TMT321506 | No. | 2.00 | | |
| 21 | A3 Professional lamination machine Approved or equal to ELI E3895-EU Professional A3 (LAMMD3) | No. | 1.00 | | |
| 22 | Approved or equal Laptop to Lenovo Legion Pro 7, Model: Lenovo Legion Pro 7 16IRX8H Processor: Intel Core i9-13900HX;Memory: 32GB DDR5 5600MHz;Storage: 1TB SSD M.2 2280 PCIe 4.0x4 NVMe; Graphics: NVIDIA GeForce RTX 4080 12GB GDDR6 Display: 16-inch WQXGA 240Hz; Operating System: Windows 11 Home/ Professional | No. | 1.00 | | |
| 23 | Binding Machine, approved or equal to DELI 3874 Heavy Duty | No. | 1.00 | | |
| | **Sub -Total CARRIED TO BQ ITEM 29A** | | | | - |
| | | | | | |

| APPENDIX 1B SITE OFFICE STATIONERY CONSUMABLES | | | | | |
|---|---|---|---|---|---|
| S/R | **DESCRIPTION** | **UNIT** | **QTY** | **RATE** | **AMOUNT** |
| 1 | A3 Photocopy Papers 80GSM (White) | Reams | 5.00 | | |
| 2 | A4 Photocopy Papers 80GSM (White) | Reams | 20.00 | | |
| 3 | A4 ruled Papers 80GSM (White) | Reams | 5.00 | | |
| 4 | Heavy duty Wireless Mouse approved or equal to Logitech MX Master 3S Bluetooth Mouse (910-006560) | No. | 1.00 | | |
| 5 | Uni-ball pens (Blue/Black) Gel X | No. | 10.00 | | |
| 6 | Quality Envelopes (A4) | 9gsm | 1pkt | | |
| 7 | Quality Envelopes (A3) | 90gsm | 1pkt | | |
| 8 | Binder clips (medium, Large) | Pkt | 1.00 | | |
| 9 | Binding Spirals (10mm) | Pkt | 1.00 | | |
| 10 | Binding spirals (16mm) | Pkt | 1.00 | | |
| 11 | Binding Spirals (22mm) | Pkt | 1.00 | | |
| 12 | Binding Spirals (25mm) | Pkt | 1.00 | | |
| 13 | Binding Spirals (28mm) | Pkt | 1.00 | | |
| 14 | Marker Pens | No. | 7.00 | | |
| 15 | Stick Notes | No | 7.00 | | |
| 16 | Short Hand Note Books | No. | 10.00 | | |
| 17 | Muster Rolls Books | No. | 1.00 | | |
| 18 | Biro Pens Sharp Pointed- Black | Pkt | 1.00 | | |
| 19 | Biro Pens Sharp Pointed Blue | Pkt | 1.00 | | |
| 20 | Box File Medium (PVC) | No. | 3.00 | | |
| 21 | Highlighting Pens | No. | 3.00 | | |
| 22 | Drinking water (Small bottles) | Box | 48.00 | | |
| 23 | Airtime of Kshs 10,000 | No. | 24.00 | | |
| | **Sub - Total B CARRIED TO BoQ ITEM 29A** | | | | - |

## APPENDIX 2: PM STAFF WAGES & ALLOWANCES (ITEM 53 C –BILL NO. 1 [PRELIMINARIES])

**Provision for PM's staff wages and allowances in accordance with specification including overtime. Item to include all costs associated with the employment including compliance with all written laws and all associated benefits whose employment shall be determined by the employer**

| S/No | Designation | Number | Minimum Qualification | Minimum Gross monthly salary |
|---|---|---|---|---|
| 1. | Inspector | 1 | National Diploma in Civil Engineering | 98,724.00 |
| 2 | Material/ Surveyor | 1 | National Diploma in Surveying /Civil Engineering | 98,724.00 |
| 3 | Chainman | 2 | KCSE Certificate | 50,000.00 |
| 4 | Driver | 1 | KCSE Certificate and Driving License | 50,000.00 |
| 5 | Office Clerk/ Documentarist | 1 | Certificate in Secretarial or equivalent | 70,000.00 |
| 6 | Office Assistant | 1 | KCSE Certificate | 50,000.00 |

**In addition to the above listed staff, the Employer may attach under training or internship/industrial attachment additional number of technical staff comprising, Architects, Engineers, Interior Designer, Quantity Surveyors, Inspectors, Surveyors and Materials Technologists**

# AIR CONDITIONING SPECIFICATIONS

## SCOPE OF WORK

The contractor shall supply and install the units as detailed in the work specifications to the satisfaction of the project manager.

## CONDITIONS ON THE WORKS

a) The work shall be done under full supervision of the Mechanical Engineer (ME) or his representative at every stage.
b) The bidder must allow for all expenses in his quotation, as no more payments shall be allowed. The bidder shall take into consideration all costs including car park charges and government taxes and shall include in its quotation. The Authority shall not allow for any price charges during the period.
c) All materials supplied shall be of 1st grade quality and shall be inspected and accepted by the Engineer before use.

## VARIABLE REFRIGERANT FLOW, SPLIT TYPE AIRCONDITIONERS

**The works to be guided by the following specifications:**

| ITEM NO. | DESCRIPTION | MINIMUM REQUIREMENT | BIDDER'S OFFER |
|---|---|---|---|
| **A.** | **General** | | |
| 1. | Piping length | 15 m | |
| 2. | Minimum warranty | 2 year | |
| 3. | With auto restart function | Yes | |
| 4. | Of quiet efficient operation | Yes | |
| 5. | Auto Fan Mode | Yes | |
| 6. | Setting Timer | 24-hour on/off | |
| 7. | Precise temperature control that constantly readjusts itself to the environment and changing occupancy. | Yes | |
| 8. | Refrigerant | Using non-ozone depleting R-410A | |
| 9. | With inverter control technology | Yes | |
| 10. | Diagnosis | Intelligent built-in self-diagnostics system, (Automatic Self-diagnosis) | |
| 11. | suitably rated automatic voltage regulator for protecting the unit | Yes, required for each unit | |
| 12. | Operation control | LCD wired controller | |
| 13. | Installation, maintenance and operation manuals | Yes, one set per unit | |

| | | | |
|---|---|---|---|
| 14. | Equipment brochures to be submitted. | Yes | |
| 15. | Training in operation and maintenance | Yes | |
| **B.** | **Outdoor Unit** | | |
| 16. | Compressor type | Rotary or reciprocating for single split and should be Inverter driven / VRF | |
| 17. | Cooling capacity, minimum | 24K Btu/h | |
| | Heating capacity | N/A | |
| 18. | Each outdoor unit with inverter drive system compressor feeds a convertible floor standing indoor unit | Yes | |
| 19. | Power supply | 1 phase, 240V ac ,50 Hz | |
| 20. | Power connections and all required circuit breakers, fuses, cabling and all accessories by supplier | Yes | |
| 21. | Installation | Roof mounted outdoor ,floor standing and Under ceiling convertible indoor unit | |
| **C.** | **Interior Units** | | |
| 22. | Cooling capacity, minimum | 24 K Btu/H ceiling cassete with fresh air connection ports. | |
| 23. | Whisper quiet operation (silent type) | Yes | |
| 24. | Noise level, maximum | 48 dB A | |
| 25. | Air flow inclusive range | (10 – 17) $m^3$ / minute | |
| 26. | Air filter | Washable standard air filter with purification and anti-mould ability, washable long-life air filter | |
| 27. | Odour wash | Yes | |
| 28. | Removable easy to clean front panel | Yes | |
| 29. | Fan operation | Varying fan speed selection, at least three levels | |
| 30. | Room temperature display | displayable on LCD wired controller | |
| 31. | Power supply | single phase 240 v ac | |
| 32. | Installation | Floor standing | |

| | | | |
|---|---|---|---|
| 33. | Colour matching | Yes, bidder to indicate colour of unit | |
| 34. | With auto swing louvers | Yes | |
| 35. | Washroom extractor | Expel Air or equivalent and approved ,Minimum 20L/S ceiling mounted.<br>Sound level 45dBA as 3M or below | |

**The contractor shall also;**

a) Supply and install suitable copper pipes for both suction and discharge, providing appropriate insulation (complete lagging) from heat exchange.
b) Supply all suitable electric cables and circuits breakers and associated wiring.
c) Supply and installation of suitable drain pipes ensuring proper disposal of to open drain.
d) Carry out any necessary finishing work and make good all areas.
e) Provide installation, maintenance and user manuals for the units.

**Building works**

1. Fabricate, supply and install a steel stand for supporting each of the outdoor units
2. Each steel stand shall be provided with a rubber vibration damper approved by the Engineer shall be placed on the existing waterproofing felt. Each outdoor unit shall be supported with one stand.
3. Drill holes through the parapet walls at about 10 m from the ground, to provide routing for suction and delivery pipes. The holes shall be sealed/ waterproofed against any water entry into building.
4. Supply and install 25 mm diameter drain pipe originating from all evaporator units, through the wall and terminating into existing drains. Fix a 25 mm PVC pipe along the wall/ pillar to the storm drain. All the drain pipes shall be fixed appropriately.
5. Commission and Handover

5.1 Clear site of all tools, debris, materials and equipment.

# SECTION VI - WORKS SPECIFICATION

# ARCHITECTS' SPECIFICATION

## GENERAL

### DISCREPANCIES IN DESCRIPTIONS

Descriptions of materials and workmanship contained in the Bills of Quantities measured items shall take precedence over descriptions contained in Appendices in the event of discrepancies between the two, unless the Architect shall otherwise direct.

### DISCREPANCIES IN DRAWINGS

Drawings shall take precedence over the Bills of Quantities, for construction purposes, in the event of discrepancies between the two, and the Architect must be notified immediately any such discrepancy becomes apparent.

### TESTS AND SAMPLES

Unless otherwise described in the Bills of Quantities, the Contractor will be responsible for all the costs involved in testing materials as described hereinafter. He will also be responsible for all the costs involved in supplying samples of materials or workmanship as required hereinafter to the satisfaction of the Architect. The cost of replacing materials fixed or placed in position which do not comply with the required test results or approved samples shall be borne solely by the Contractor.

### KENYA STANDARDS

All materials and goods supplied for incorporation in the works must comply with any relevant current standards issued by the Kenya Bureau of Standards. Where these are not established or are unclear the latest British Standards and Codes of Practice shall be applied.

## METAL WORK

### GENERALLY

All materials shall be of the best of their respective kinds and conform at least to the relevant B.S. where such exists. All work shall be carried out strictly as directed and approved by the Architect before fixing.

### ALUMINIUM

Aluminium sheet shall comply with the requirements of B.S. 1470 and be suitable for the purpose required.

Extruded aluminium sections shall be obtained from an approved source and be equal to samples to be submitted to and approved by the Architect. The surface finish shall be matt.

### HOOP IRON.

Provide 25mm wide 24-gauge hoop iron reinforcement and anchors to be laid where specified under masonry, and anchored in ring beams.

### PRICING INFORMATION

Prices for all welded work shall include for preparing, welding and grinding to a smooth finish.

## PAINTING AND DECORATING

GENERALLY

The whole of the work shall be executed to the entire satisfaction of the Architect, and all work rejected is to be re-executed by the Contractor at his own expense. Subject to the foregoing, the methods of application adopted i.e. brush, spray, roller, etc. are at the discretion of the Contractor, unless otherwise described.

All paints shall be Grade A in accordance with the Ministry of Works approved paint list.

Sumps and drains shall not be used for the disposal of waste or dirty water.

MAINTENANCE

The Contractor shall make good after other trades have carried out maintenance work. In cases where the defective work is not caused by, or the responsibility of, the Contractor, or his Sub-Contractors, he should make arrangements for payment with the party concerned. Where cracks have been made good, apply two coats to the new filling and one coat to the whole wall in which the crack has appeared.

MATERIALS

Any deviation from the materials and makes specified must be approved in writing by the Architect to whom application must be made before decoration starts.

IRONMONGERY

All ironmongery already fixed is to be removed before painting doors and refixed on completion of the finishing coat. If any paint should get on to ironmongery, it must be removed with chemical solvents and not scratched off.

APPROVED SUB-CONTRACTORS

The Contractor shall arrange for the painting and decorating work to be executed by an approved Sub-Contractor. The Contractor shall state on the form provided and included as a tender document the name of the Sub-Contractor he proposes to employ and he shall not employ any other Sub-Contractor for the work without the written permission of the Architect.

MIXING

All materials shall be delivered on site intact in the original containers and shall be mixed and applied strictly in accordance with the manufacturer's printed instructions. No addition will be allowed to be made locally without the express permission of the Architect.

COLOURS

The priming, undercoats, and finishing coats shall each be of differing tints, the priming and undercoats shall be the correct brands and tints to suit the respective finishing coats, in accordance with the manufacturer's instructions. All finishing coats shall be of the colour and type specified by the Architect.

The Contractor will be required to paint trial panels and will be required to adjust tints as necessary.

AREAS TO BE READY FOR PAINTING ETC.

Before the painting or decorating is started the Contractor shall arrange that all other trades have been completed and other tradesmen removed from the vicinity of the area to be painted. All plaster, mortar, concrete, oil or stains of any kind shall be removed by the Contractor from work to be decorated before painting commences.

PREPARATION

Plastered and rendered surfaces to be decorated shall be allowed to dry for a minimum of four weeks before decoration commences.
Plaster finished with a steel trowel and fair face concrete surfaces shall be well rubbed down filled and made good as necessary and thoroughly cleaned down immediately before decoration is applied.

Plaster finished with a wood float or other rough textured surface of a similar nature shall be made good as necessary and thoroughly brushed clean immediately before decoration is applied.

Insulating board or similar surfaces shall be filled and made good as necessary and lightly brushed down to remove all dirt, dust and loose particles.
Metal work to be painted shall be scaled clean and thoroughly wire brushed.

Woodwork to be painted shall be well rubbed down. All knots shall be covered with good knotting before priming and all defects shall be filled with hard stopping after priming. Plywood shall be brush filled over the entire surface

Woodwork to receive finishes other than paint shall have all stains and pencil marks removed, be well rubbed down and have all defects levelled up with hard stopping of a colour to match the adjoining surface.

Woodwork to be clear varnished shall be well rubbed down and the varnish is to be applied with a chamois leather pad, rubbed back with fine graded steelwool between coats and afterwards buffed up to produce an approved finish.

All woodwork to be varnished is to have all pencil and other marks removed and surfaces smoothed down prior to application.

PAINTS

All paints used should be obtained from one of the following manufacturers after obtaining the Architect's approval and of the product specification hereinafter described.

a) Robbialac
b) Crown Paints
c) Dulux Paints
d) Sadolin Paints

PLASTIC EMULSION PAINTS

Plastic emulsion paint for internal and external application shall be of a manufacture approved by the Architect.

BITUMINOUS SOLUTION

Bituminous solution for use on coated pipes shall be obtained from a manufacturer approved by the Architect.

PRIMERS

Unprimed steelwork shall be primed with a Red Lead Primer.

Galvanised steelwork shall be treated with a mordant solution and primed with a Zinc Chromate Primer.

Woodwork shall be primed with a Pink Wood Primer.

UNDERCOATING

The undercoat for use under enamel finishing coats shall be an approved undercoat.

PRODUCT SPECIFICATION FOR PAINTS

Product specification for paints shall be in accordance with the composition requirements and may be required to be tested by the M.O.W. Materials Testing Branch

PRICING INFORMATION

The numbers of coats stated in the descriptions in these Bills of Quantities shall be applied in addition to any primers, stoppers, fillers, sealers, knotting, stopping, etc. required. The Contractor's prices shall be deemed to include for supplying and applying all such preparatory materials as may be required by the Standard Specification as recommended by the manufacturer of the finishing coat for the particular surface to be covered. The Contractor's prices shall further include for all other preparatory.

| | 1st Quality Emulsion Paint | 2nd Quality Emulsion Paint | 1st Quality Alkyd Gloss Paint |
|---|---|---|---|
| Non-volatile(B.S Content3900 B2) | Must not exceed 50% by weight | Not more than 60% by weight | Less than 50% by weight |
| Pigment Volume Concentration | Not more than 5% | Not more than 70% | Less than 25% |
| Resin type | Vinyl Acetate/ Acrylic Ester Copolymer | Vinyl Acetate/ Acrylic Ester Copolymer | Long Oil Alkyd minimum oil length not less than 60% |
| Opacity requirement (contrast ratio to B.S. 3900 D4) | Not less than 80% | Not less than 70% | Not less than 90% |
| Pigment/ Binder Ratio | Not more than 2.25:1 | Not more than 2.75:1 | Not more 2.25:1 |

APPROVED SUB-CONTRACTORS

The Contractor shall state on the form provided and included as a tender document, the names of the Sub-Contractors he proposes to employ, and he shall not employ any other Sub-Contractors for the work without the written permission of the Architect.

MAINTENANCE

The Contractor shall make good after other trades have carried out maintenance work. In cases where the defective work is not caused by, or the responsibility of, the Contractor, or his Sub-Contractors, he should make arrangements for payment with the party concerned. Where cracks have been made good, apply two coats to the new filling and one coat to the whole wall in which the crack has appeared.

MATERIALS

Any deviation from the materials and makes specified must be approved in writing by the Architect to whom application must be made before decoration starts.

# STRUCTURAL & CIVIL WORKS SPECIFICATIONS

## CONCRETE WORKS

### 12.1 GENERAL

The standard of materials and of workmanship shall not be inferior to the recommendations of the current:

| | | | |
|---|---|---|---|
| (a) | British Standard Code of Practice BS 8110 The Structural Use of Concrete | ) ) | |
| | Or | ) | Whichever is applicable |
| (b) | British Standard Code of Practice BS 8007 - Design of concrete structures for Retaining Aqueous Liquids | ) ) ) | to the particular structures |

( c ) Appropriate British Standards

(d) Approved Kenyan Standards
Or
(e) Other equivalent and approved international standards

The requirements outlined in the above documents must be read with those of this Section of the Specification and where any conflict exists between the recommendations of the above and of this Specification, the requirements of the Specification shall prevail.

As and when required by the Project Manager the Contractor shall prepare and submit, before commencing the work, a time chart (additional to the general programme) detailing the various operations for concrete work.

No material shall be used in the Works until prior approval for its use has been given by the Project Manager; neither shall any change in the nature, quality, kind, type, source of supply or manufacture be made without the Project Manager's permission.

Names of manufacturers and test certificates for materials not supplied by the Employer shall be supplied as soon as possible to the Project Manager.

The cost of providing samples and the cost of carrying out tests required by 12.6 (except as otherwise provided in the Conditions of Contract) together with the cost of supplying equipment for sampling and site testing indicated in columns 3 and 4 of Table 12.8 of this Section of the Specification shall be borne by the Contractor (see also Clause 12.6).

During the progress of the Works, consignment notes for materials not supplied by the Employer shall be supplied to the Project Manager giving details of each consignment.

The Contractor shall provide all samples required by the Project Manager as soon as possible after contract award. No deliveries in bulk shall be made until the samples are approved by the Project Manager. All condemned material shall be removed from the site within 24 hours.

A competent person approved by the Project Manager shall be employed by the Contractor whose duty will be to supervise all stages in the preparation and placing of the concrete. All cubes shall be made and site tests carried out under his direct supervision, in consultation with the Project Manager.

All materials which have been damaged, contaminated or have deteriorated or do not comply in any way with the requirements of these Preambles shall be rejected and shall be removed immediately from the site at the Contractor's expense. No materials shall be stored or stacked on suspended floors without the Project Manager's prior approval.

The use of the word "approved" in this Specification refers to the approval of the Project Manager or his delegates.

Cross-references between certain clauses of this Specification have been shown in brackets following the particular item.

## 12.2 CONCRETE

### Requirements

The mix proportions shall be selected to ensure that the workability of the fresh concrete is suitable for the conditions of handling and placing, having regard to the structural element being constructed, the disposition of reinforcement, and taking full account of the environment to which it will be subjected.

The minimum cement contents and maximum water/cement ratios of designed mixes shall be as given in Table 12.1. In the event of sulphate exposure precautions requiring lower cement content than those required for normal conditions the latter requirements shall prevail.

**The maximum cement content in any mix shall not exceed 500 kg/m³ for normal structures and 425 kg/m³ for liquid retaining structures.**

In all cases of mix proportioning, the added water shall be included with due allowance for the moisture contained in the aggregates and shall be the minimum consistent with the workability requirements.

**Table 12.1 Minimum Cement Contents**

**Normal Conditions**

| Type of Structural Element | Exposure Conditions (BS 8110) | Minimum Cement Content (kg/m³) Maximum Aggregate Size | | | Maximum Water/Cement Ratio |
|---|---|---|---|---|---|
| | | 40 mm | 20 mm | 10 mm | |
| Liquid Retaining Structures, Shafts and Tunnel Linings | Severe | 295 | 325 | 356 | 0.55 |
| All Foundations and Buried Structures | Moderate | 270 | 300 | 340 | 0.60 |
| Building Super-structure | Moderate | 270 | 300 | 340 | 0.60 |

**Additional Requirements when Exposed to Sulphate Conditions (All Structural Concrete)**

| Concentration of Sulphates (expressed as $SO_3$) | | Minimum Cement Content (kg/m³) Maximum Aggregate Size | | | | Maximum Water/ Cement Ratio |
|---|---|---|---|---|---|---|
| In soil (Total $SO_3$) | In ground water Parts per 100,000 | Type of Cement | 40 mm | 20 mm | 10 mm | |
| ≤ 0.2 | ≤ 30 | No Special Precautions | | | | - |
| 0.2 - 0.5 | 30 - 120 | OPC | 300 | 330 | 370 | 0.50 |
| | | SRPC | 250 | 280 | 320 | 0.55 |
| 0.5 - 1.0 | 120 - 250 | OPC | Not permitted | | | - |
| | | SRPC | 300 | 330 | 370 | 0.50 |
| 1.0 - 2.0 | 250 - 500 | OPC | Not permitted | | | - |
| | | SRPC | 340 | 370 | 410 | 0.45 |
| ≥ 2.0 | ≥ 500 | SRPC | Ditto but with protective coating | | | 0.45 |

OPC - Ordinary Portland Cement
SRPC - Sulphate Resisting Portland Cement

**Strength**

The characteristic strength of concrete means that value of the 28 day cube strength below which 5% of all possible test results would be expected to fall.

The relationship between grade of the concrete and its characteristic strength shall be as given in BS 5328. The grade of concrete to be used in particular locations shall be as given in Table 12.2 unless noted otherwise on the drawings.

**Table 12.2 Concrete Strength Requirements**

| Location | Maximum Coarse Aggregate Size (mm) | Grade of Concrete (BS 5328) |
|---|---|---|
| Blinding Concrete<br>- General Structures<br>- Liquid Retaining Structures | <br>20 or 40<br>20 | <br>C15P<br>C20P |
| Blinding Concrete - Sulphate Condition | 20 | C25P |

| Location | Maximum Coarse Aggregate Size (mm) | Grade of Concrete (BS 5328) |
|---|---|---|
| Substructure thickness less than 400 mm | 20 | C25D |
| Substructures, walls and slabs more than 400 mm | 20 or 40 | C25D |
| Superstructures, Normal Concrete | 20 | C25D |
| Liquid Retaining Structures | 20 | C35A |
| Fine Concrete | 10 | C25D |
| Precast Concrete | 10 or 20 | C30D |

In the above table suffix P means a prescribed mix, D means a designed mix and A means a design mix complying with the requirements of BS 8007.

**Mixes**

(a) Designed Mixes

Proportions shall be determined in accordance with the "Design of Normal Concrete Mixes" published by the United Kingdom Department of The Environment and obtainable from:-

Building Research Establishment and Bookshop
Garston
Watford
WD2 7JR
ENGLAND

Tel: +44 1923 894040
Fax: +44 1923 664010
Tlx: 923220 BRSBRE G

or other approved methods, for the requirements set out in this Specification.

For the purpose of determining the design mean strength of the concrete a margin shall be added to the characteristic strength for the particular grade of concrete. This design margin shall be assessed on the degree of control reasonably to be expected in the manufacture of the concrete and shall not be less than 5.0 N/mm$^2$ nor less than 1.64 times the standard deviation. Until such time as the standard deviation has been assessed the margin shall be not less than 7.5 N/mm$^2$.

Details of the designed mixes shall be forwarded immediately to the Project Manager for his approval.

(b) Prescribed Mixes

Proportions for the several grades of concrete shall conform to the requirements of Tables 12.3 and 12.4.

(d) Chloride Content

The total chloride content of the concrete mix shall comply with the requirements of BS 8110: Part 1: Section 6.

**Quality Control**

The principal basis of control shall be by comparison of the results of the compression cube tests at 28 days, except for small quantities of concrete whose strength can be otherwise derived and which is permitted for use by the Project Manager. 40 sample cubes shall be made initially in eight samples each day for five days of concreting and thereafter one sample per 25 $m^3$ of concrete but not less than one sample for each day's concreting.

Where materials are of an unfamiliar grading or type, compression cube tests shall be carried out at 7 days and adjustments made in advance of the main control methods outlined above.

Cube test results will be examined individually in 10 consecutive sets of four and the standard deviation and mean strength of each set calculated. The concrete mix proportions will only be acceptable if all of the following requirements are complied with:-

(i) Not more than two results in 40 are less than the characteristic crushing strength.

(ii) No value of the average for any set of four results is less than the characteristic strength plus one-half of the design margin (Clause 12.2).

(iii) When 40 results have been obtained and the mean strength and standard deviation are calculated, the mean strength minus 1.64 times the standard deviation shall be greater than the characteristic strength.

Where the results do not conform to the above requirements the following action shall be taken:-

- Adjustments to the mix shall be made to obtain the strength required.

- In the case where any result is less than 80% of the characteristic strength the structural implications shall be considered and action taken as ordered by the Project Manager (as provided for in Clause 12.5).

For those Prescribed Mixes required to be tested, requirements (i) and (ii) only will be applicable.

**Production**

Aggregates and cement shall be proportioned by weigh-batching, and water shall be proportioned by volume. Subject to the prior approval of the Project Manager volume-batching of aggregates may be used for small sections of works, but volume batching of cement will in no case be accepted. The Contractor may, however, so proportion the mix that each batch shall use a whole bag or bags of cement, the weight of which is known precisely. Where permission has been given for volume batching of aggregates, all gauge boxes shall be accurate and due allowance shall be made for the bulking of the aggregates in assessing the correct volume to be used.

The aggregates and the cement shall be thoroughly mixed in a clean mechanical mixer for a period of time agreed with the Project Manager and the water added on the basis of the approved design.

The amount of water added shall conform to the requirements of Clause 12.2.

Batching mixing machines shall comply with the requirements of BS 1305. They shall be provided in such numbers and of such capacity as to ensure a continuous supply of freshly mixed concrete at all times during construction.

Target strength for trial mix = 1.3 x Characteristic Strength

Target strength for works = 1.2 x Characteristic Strength

Continuous mixing machines shall be used only with the written permission of the Project Manager.

Not less than 30 days prior to the installation of the Contractor's plant and equipment for processing, handling, transportation, storing and proportioning ingredients, and for mixing, transporting and placing concrete, the Contractor shall submit drawings for approval by the Project Manager, showing proposed general plant arrangements, together with a general description of the equipment proposed for use.

After completion of installation, the operation of the plant and equipment shall be subject to the approval of the Project Manager.

Where these Preambles, the Bills of Quantities or the Drawings require specific procedures to be followed, such requirements are not to be construed as prohibiting use by the Contractor of alternative procedures if it is approved by the Project Manager, prior to use of such alternatives.

Approval of plant and equipment or their operation, or of any construction procedure, shall not operate to waive or modify any provision or requirements contained in the Preambles governing the quality of the materials of the finished work.

**Table 12.3 Prescribed Mixes - Mass of Dry Aggregate to be Used With 100 kg of Cement**

| Grade of concrete | Nominal maximum size of aggregate (mm) | 40 | | 20 | | 14 | | 10 | |
|---|---|---|---|---|---|---|---|---|---|
| | Workability | Medium | High | Medium | High | Medium | High | Medium | High |
| | Range for standard sample (mm) | 50-100 | 80-170 | 25-75 | 65-135 | 5-55 | 50-100 | 0-45 | 15-65 |
| | | kg | kg | kg | kg | kg | kg | kg | kg |
| C7.5P | | 1080 | 920 | 900 | 780 | N/A | N/A | N/A | N/A |
| C10P | | 900 | 800 | 770 | 690 | N/A | N/A | N/A | N/A |
| C15P | Total | 790 | 690 | 680 | 580 | N/A | N/A | N/A | N/A |
| C20P | aggregate | 660 | 600 | 600 | 530 | 560 | 470 | 510 | 420 |
| C25P | | 560 | 510 | 510 | 460 | 490 | 410 | 450 | 370 |
| C30P | | 510 | 460 | 460 | 400 | 410 | 360 | 380 | 320 |

N/A not applicabl

**Table 12.4 Prescribed Mixes - Percentage by Mass of Fine Aggregate to Total Aggregate**

| Grade of concrete | Nominal maximum size of aggregate (mm) | 40 | | 20 | | 14 | | 10 | |
|---|---|---|---|---|---|---|---|---|---|
| | Workability | Medium | High | Medium | High | Medium | High | Medium | High |
| C7.5P }<br>C10P }<br>C15P } | | 30-45 | | 35-50 | | N/A | | N/A | |
| C20P }<br>}<br>C25P }<br>}<br>C30P } | Grading zone 1 | 35 | 40 | 40 | 45 | 45 | 50 | 50 | 55 |
| | 2 | 30 | 35 | 35 | 40 | 40 | 45 | 45 | 50 |
| | 3 | 30 | 30 | 30 | 35 | 35 | 40 | 40 | 45 |
| | 4 | 25 | 25 | 25 | 30 | 30 | 35 | 35 | 40 |

N/A implies 'Not Applicable'

Notes on the use of Tables 12.3 and 12.4

NOTE 1. The proportions given in the tables will normally provide concrete of the strength in $N/mm^2$ indicated by the grade except where poor control is allied with the use of poor materials.

NOTE 2. For grades C7.5P, C10P and C15P a range of fine-aggregate percentages is given; the lower percentage is applicable to finer materials such as zone 4 sand and the higher percentage to coarser materials such as zone 1 sand.

NOTE 3. For all grades, small adjustments in the percentage of fine aggregate may be required depending on the properties of the particular aggregates being used.

NOTE 4. For grades C20P, C25P and C30P, and where high workability is required, it is advisable to check that the percentage of fine aggregate stated will produce satisfactory concrete if the grading of the fine aggregate approaches the coarser limits of zone 1 or the finer limits of zone 4.

**Cement**

Cement shall, as a minimum, meet the requirements of CEMI-32.5, CEMII-32.5 or CEMIV-32.5 in accordance with Kenya Standard KS 1725 Part 1 (Composition, Specifications and conformity criteria for common cements) and Part 2 (conformity Evaluation). Concrete for power floated floors shall as a minimum meet the requirements of CEMI-42.5, CEMII-42.5 or CEMIV-42.5.

Approval to the use of cement manufactured to the above standards or any other approved standards shall be subject to the Contractor demonstrating that the resulting concrete shall meet the strength requirements as given in the drawings and the relevant sections of the Concrete Specifications.

Pulverised-fuel ash shall have a maximum colour index of 6 (Colour comparator disc reference No.

296570) when measured using the Lovibond Color Comparator system as recommended in BS 3892: Part 1 Appendix H, Clause H8.

Cement shall be fresh when delivered to Site and the consignments shall be used in the order of their delivery. The Contractor shall mark the date of delivery on each consignment and each consignment shall be stored separately and in such manner as to be easily accessible and identifiable.

No cement in bags or other containers shall be used unless these and the manufacturer's seals are intact at the time of mixing.

If the cement is delivered in bags it shall be stored in a waterproof shed or building at a temperature of not less than 8°C and the bags shall be placed on dry boards above the floor to prevent deterioration or contamination from any cause.

Bulk cement may be used provided it is stored in an approved container.

The Contractor shall not use cement which has hardened into lumps, but subject to removal of the lumps by screening, the Project Manager may allow such cement to be used in non-structural concrete mixes.

Cement of different types shall be kept separate in storage and shall not be mixed together in the production of concrete.

**Aggregates**

The Contractor shall investigate the proposed aggregate sources in detail and shall submit a comprehensive report with technical information and data which shall include the following:

a) Location. Only Sources equipped with facilities adequate for the production of the materials as specified and in such quantities as shall be required for the prompt execution of the Contract shall be approved.

b) Petrology of sources and possible or likely variability during the Contract period.

c) Method of production

d) Schedule of available and proposed processed aggregates by size, including details of actual screen sizes to produce each aggregate.

e) Test data as applicable for each aggregate type and size based upon representative samples and tested in accordance with the appropriate British Standards.

f) A detailed statement of the aggregate proposed for use in each grade of concrete.

Samples of all aggregate, including fine aggregates and sand shall be submitted to the Project Manager for his approval. All samples shall be taken in accordance with BS 812 and shall weigh not less than the minimum weight indicated on Table 1 of that Standard.

The Contractor shall produce with each consignment or at intervals directed by the Project Manager a certificate signed by the Supplier, or other approved analyst, giving fully detailed chemical and physical properties of all aggregates together with a sieve analysis carried out in accordance with the appropriate British Standard.

Any changes in the particulars of the aggregates which occur during the course of the Contract must be notified to the Project Manager without delay.

The aggregates shall be stored on Site in separate stockpiles so arranged as to prevent the intermingling of the various aggregate sizes. The stockpiles shall be suitably protected to prevent contamination of the aggregates from the ground, rubbish or by leaves, dust or other windblown materials.

Aggregates shall conform to the requirements of "Acceptable Standards" of Table 12.8.

Building sand for mortar and similar uses and aggregates for concrete shall comply to BS 882 and shall be perfectly clean and free from all foreign matter and shall not consist of, nor contain argillaceous limestone or shells.

Where the nominal size specified exceeds 37.5 mm the grading shall be subject to the Project Manager's approval or in accordance with his directions.

Unless otherwise agreed with the Project Manager, single-sized aggregates shall be used in batching and mixing concrete.

The following impurities in both fine and coarse aggregates shall not exceed the limits stated in the following clauses.

The total chloride content of the concrete mix arising from the aggregate together with that from any admixtures and any other source, expressed as a percentage of chloride ion shall not in any circumstances exceed 0.1%.

Note: Marine aggregates and some inland aggregates contain chlorides. Both should be selected carefully and marine aggregates necessitate efficient washing to achieve the 0.1% chloride ion limit. Wherever possible, the total chloride content should be calculated from the mix proportions and the measured chloride content of each of the constituents.

Concrete made with some aggregates exhibit Alkali-Silica Reaction (ASR). This phenomenon is particularly detrimental in structures subject to wetting and their use will not be allowed in such structures.

Prior to acceptance of an aggregate as inert to alkali reaction the report of a qualified geologist, appointed by the Project Manager on the suitability or otherwise of materials shall be obtained following examination of all types of material that the proposed sources will yield during the course of the contract. The Project Manager may require that samples be taken from boreholes and if the contract extends over a long period then more than one report shall be obtained.

The Project Manager may order further tests to be carried out on the aggregates proposed by the Contractor for the structures in connection with this Contract before permission is given to use the aggregates proposed by the Contractor.

Where allowed by the Project Manager to use reactive or potentially reactive aggregates in certain structures the Contractor shall take all suitable measures to prevent deterioration of concrete due to alkali-silica reaction. Such measures shall include the use of cement with an acid soluble equivalent of sodium oxide content ($Na_2O + 0.658K_2O$) of less than 0.6%. The reactive alkali content of the concrete mix shall in no circumstances exceed 3 kg/m³.

The Alkali-Silica Reaction (ASR) in hardened concrete is also affected by the water-cement ratio. Therefore, where ASR aggregates are used, with the permission of the Project Manager, the water-cement ratio shall be kept to a minimum (in the region of 0.4).

Aggregates required for use in the construction of concrete water retaining, water excluding and other similar structures shall have a low drying shrinkage and the water absorption shall not exceed 3%.

The absorption of the aggregates shall be measured in accordance with BS 812, Part 2.

Aggregates of rounded shape or otherwise capable of producing a concrete of good workability with the minimum addition of water shall be preferred.

Dust or flour resulting from crushing the aggregate shall not be allowed to contaminate the stockpiles. When, in the opinion of the Project Manager such contamination has taken place it shall be removed by an approved means or otherwise the aggregate shall be rejected.

For mass concrete, in order to improve the consistency of the mix, dust or flour resulting from crushing the aggregate, may subject to test, be included in controlled quantities to supplement the fine aggregate.

Except where aggregates have been otherwise specified on the Drawings the grading of aggregates shall be as follows:

i. Coarse Aggregate:

a) 10 mm max. size, graded, for all "fine" concrete.

b) 20 mm max. size, graded, for all reinforced concrete in beams and for walls and slabs not greater than 400 mm thick.

c) 40 mm max. size, graded, for all reinforced concrete walls and slabs in excess of 400 mm thick.

ii. Fine Aggregate:

a) Where aggregates conforming to Zones 2 or 3 of BS 882 are available they shall be used.

b) For Prescribed Mixes, Zones 1, 2, or 3 aggregates only shall be used.

Fine and coarse aggregates shall be as defined by and be of the quality and nature required by BS 882. In addition they shall be chemically inert to alkali reaction

**Water**

The Contractor shall supply all water, make all arrangements and pay all charges in respect of such supply. Where water can be obtained from a public water supply it shall be used.

Where water cannot be obtained from a public supply it shall be tested in accordance with BS 3148 and if necessary shall be treated to assure compliance therewith.

Water for washing and curing shall be such that it will impair neither the strength of the finished concrete nor its appearance.

**Admixtures**

i. *General:* The quantity and method of using admixture's shall be in accordance with the manufacturer's recommendations and in all cases shall be subject to the approval of the Project Manager. Unless otherwise specified or approved by the Project Manager, an admixture shall comply with one of the following:-

BS 1014 (Pigments for Portland cement and Portland cement products).

BS 5075 (Concrete admixtures except chloride based admixtures).

In all cases the Contractor shall provide the following information for the Project Manager's approval: -

a) the quantity to be used, in kilograms per kilogram of cement and in kilograms per cubic metre of concrete;

b) the detrimental effects caused by adding a greater or lesser quantity in kilograms per cubic metre of concrete;

c) the chemical name (s) of the main active ingredients;

d) whether by the Project Manager, the Contractor shall demonstrate the action of an admixture by means of trial mixes.

ii. *Calcium chloride*. The use of calcium chloride in any form is prohibited.

**Control of Alkali-Silica Reaction**

The risk of cracking and expansion due to alkali-silica reaction shall be minimised by compliance with the specification and guidance notes set out in Technical Report No. 30 of the Concrete Society, Riverside House, 4 Meadows Business Park Station Approach, Blackwater, Camberley, Surrey, GU17 9AB Fax: +44 (0) 1276 607141, Website: www.concrete.org.uk.

## 12.3 REINFORCEMENT

**Steel**

Reinforcement shall be:

(a) Plain round mild steel or High Yield steel bars conforming to BS 4449.
(b) Cold worked steel bars conforming to BS 4449: 1988.

(c) Fabric reinforcement made of cold drawn high tensile bars conforming to BS 4483.

The Contractor shall obtain from his suppliers certificates of the mechanical and physical properties of the reinforcement and shall submit them to the Project Manager for approval, except where reinforcement has been supplied by the Employer. The frequency of sampling and the method of quality control shall be in accordance with Table 4 and Clause 20 respectively of these British Standards. All high yield and cold worked bars (except in welded fabric reinforcement) shall be deformed bars complying with Classification Type T2 for bond strength in accordance with BS 4449. Where galvanised reinforcement is specified, galvanising shall comply with the requirements of BS 729, Part 1.

**Storage**

Reinforcement shall be stored on Site under cover and supported clear of the ground and in such manner as to make identification easy. Supports shall be such that distortion of the steel is avoided and contamination and corrosion prevented.

**Bending and Fixing**

The Contractor shall provide on Site facilities for cutting and bending reinforcement whether he is ordering his reinforcement bent or not and shall ensure that a token amount of straight bar is available on Site for bending as and when directed by the Project Manager.

Reinforcement shall be wire brushed and cleaned at the Contractor's expense, before and/or after it is placed in position, if required by the Project Manager.

The bars shall be cold bent in strict accordance with the drawings and the Contractor shall be responsible for the accuracy of the bending. Bending dimensions shall be worked to the tolerances indicated in BS 4466 and BS 8110 table 3.28. Bars in which any errors in bending are beyond the limits of the foregoing tolerances shall be replaced at the Contractor's cost by correctly bent new bars, or, may be straightened and rebent cold subject to the Project Manager's prior approval. Any discrepancy or inaccuracy found in the drawings shall be notified to the Project Manager immediately.

After bending, reinforcement shall be securely bundled and labelled with weather-proof tags or shall be marked with other approved signs by which it can readily be identified.

Before assembling or fixing the reinforcement the dimensions to which it has been bent shall be checked by the Contractor against the drawings.

The reinforcement shall be fixed in strict accordance with the drawings as regards cover, spacing and position, and suitable precautions shall be taken by the Contractor to prevent the displacement of reinforcement during the placing and compaction of concrete.

During concreting a competent steel fixer must be in attendance to adjust and correct the positions of any reinforcement which may be displaced. The vibrators are not to come into contact with the reinforcement.

Where required to support and retain the reinforcement in its correct position the Contractor shall provide templates, stools or other supports at his own cost. He shall allow for cutting to correct length all corner lacer bars included in the bar schedules as standard lengths.

Precast concrete support blocks for reinforcement shall be manufactured from Grade C30D "fine" concrete to ensure the correct cover thickness. They shall be well cured before use and carefully stored on Site to avoid contamination. Plastic and metal supports, chairs, etc. may be used and shall be subject to the Project Manager's prior approval.

In the case of mild steel, a lap of not less than 40 diameters of the smaller bar shall be provided at the junction of two bars for which the lap is not specifically detailed on the Drawings and, in the case of High Yield steel, a lap of not less than 50 diameters.

All intersections of bars in walls and slabs and all connections between binders or links and main bars in columns or beams shall be tied with soft iron wire ties or with fixing clips which shall not be allowed to make contact with the formwork or to project materially into the specified cover.

Unless permitted by the Project Manager, welding of bar reinforcement at intersections or for the joining of bars is prohibited. Where permission is granted, welding shall be carried out in accordance with the recommendations of the Institute of Welding for the welding of reinforcing bars for reinforced concrete construction.

When fixed reinforcement is to be left exposed for more than eight weeks, it shall be thoroughly cleaned and painted with neat cement grout.

Where galvanised reinforcement is used any damage suffered by galvanising shall be made good by the application of an approved galvanising formulation, before concrete placing is commenced.

No concreting shall be commenced until the Project Manager has inspected the reinforcement in position and until his approval has been obtained and the Contractor shall give adequate notice of his intention to concrete.

**Couplers**

Couplers for reinforcement shall be either Standard Swaged Splices or Type II Alpha Couplers manufactured by CCL Systems, Unit 4, Park 2000 Millennium Way, Westland Road, Leeds, LS11 5AL, Telephone: +44 (0) 113270 1221, Fax: +44 (0) 113 277 8977, email: sales@cclstressing.com or similar approved. Where bars of different diameters are to be joined a CCL Reducer Sleeve or similar shall be used.

Couplers shall be suitable for the type and size of reinforcing bars and shall be capable of developing 115% of the characteristic strength of the smaller of the reinforcing bars being joined in both tension and compression. Couplers shall be installed in accordance with the manufacturer's recommendations. Square twisted reinforcing bars shall not be used with couplers.

## 12.4 FORMWORK

**Requirements**

The term "formwork" shall be taken to include centering, formwork, strutting, bracing and the like. When called upon to do so by the Project Manager the Contractor shall submit his formwork proposals for checking and approval by the Project Manager in advance of the concreting.

Formwork shall be of such accuracy, strength and rigidity as to carry the weight and pressure from the concrete to be placed on or against it, together with all constructional, wind or other loads likely to be imparted to it, without producing deformation of the finished concrete in excess of the tolerances outlined in Clause 12.4 and Table 12.5.

All formwork shall be sufficiently tight, without plugging, to prevent loss of grout during the vibration of the concrete. When required by the Project Manager joints between formwork facing boards shall be sealed with foam rubber, sealing strips or other approved material. A foam rubber or polyurethane strip shall be provided around the tops of all walls and columns before affixing the forms for the next lift.

Faces of formwork shall be clean, free from projecting nails, adhering grout and other imperfections or defects which would prevent the specified surface finish from being attained. They shall be treated with approved mould oil before positioning. Great care shall be exercised to prevent reinforcement or steelwork from being contaminated by the oil during erection of the formwork.

Formwork, which as a result of prolonged use or general deterioration does not, in the opinion of the Project Manager, conform to the particular requirements set out in this clause, shall not be used.

Through-bolts or ties will not be permitted in liquid-retaining structures. The Contractor shall use only such bolts or ties as are capable of being removed in whole or in part so that no part remaining embedded in the concrete shall be nearer the surface of the concrete than the specified thickness of cover to the reinforcement.

Beam soffits shall be erected with an upward camber of 5 mm for each 3 metres of span.

Top formwork shall be counterweighted or otherwise anchored against flotation.

Boxes for forming holes shall be constructed so as to be easily removable without damaging the concrete during removal. They shall be properly vented to permit the escape of entrapped air, and shall be capable of being sealed, subsequently to prevent the loss of grout. The use of polystyrene blocks for the forming of holes, sinkings, etc. will not be allowed except by express permission of the Project Manager.

On all external edges risers of the concrete 20 mm chamfers shall be formed.

Openings for inspection of the inside of beam, wall, column and similar formwork and for cleaning-out purposes shall be formed so that they can conveniently be closed before the placing of concrete.

All props shall be supported on adequate sole plates and shall not bear directly on or against concrete. They shall be capable of being released gently and without shock from the supported formwork. No appliance for supporting the formwork shall be built into the permanent structure without the Project Manager's prior approval. Props for upper level support shall be placed directly over those at lower levels, and the lowermost props shall bear upon work sufficiently mature to carry the load.

Formwork shall be such as to allow for its removal without damaging the concrete, and in the case of suspended floors, for the removal of the beam sides and slab soffits without disturbing the beam-bottom boards and their props.

Before concreting, the areas which are intended to receive the concrete shall be cleaned by jetting with compressed air, and all water and extraneous material removed.

Where timber is used for formwork it shall be properly cured, free from warp, straight, clean and free from loose knots.

Where metal forms are used for formwork they shall be of the type strengthened by intermediate ribs or cross bracing.

Moving formwork may be used where in the opinion of the Project Manager it is appropriate.

**Sawn Formwork**

Sawn formwork shall produce an ordinary standard of finish consistent with normal good practice for use where the face of the finished concrete will not be exposed. The face in contact with the concrete shall consist of sawn timber boards, sheet metal or other approved material.

**Wrought Formwork**

Wrought formwork for use on exposed faces and water retaining faces shall produce a high standard of finish consistent with the best practice. The face in contact with the concrete shall consist of wrought and thicknessed boards tongued and grooved of not less than 30 mm finished thickness, framed plywood or metal panels or other approved material. Joints between boards and/or panels shall be arranged in a uniform pattern.

**Special Wrought Formwork**

Special wrought formwork shall provide the highest standard of finish where the face of the finished concrete is to form a particular feature. The face in contact with the concrete shall consist of large smooth sheets, unless otherwise specified, arranged in an approved uniform pattern, with joints coinciding with possible architectural features, sills, window heads, or changes in direction or surface. Accurate alignment of all joints shall be maintained. Wrought boarding and standard steel panels shall not be used unless specially faced.

**Tolerances**

Unless otherwise indicated on the drawings, the tolerances of the finished concrete with respect to the dimensions shown on the drawings shall not exceed the limits set out in Table 12.5.

**Table 12.5 Tolerances of Dimensions for Finished Concrete**

| Items | Tolerances (mm) |
|---|---|
| Overall dimensions and Levels | ±5 |
| Column sizes )<br>Beam sizes )<br>Wall sizes ) | ±5 |
| Vertical lines out of plumb | 5 mm ± 15 mm in every 15 m height |

Except that in the case of Sawn Formwork the dimensions of the finished concrete shall be not less than those shown on the drawings.

**Striking and Removal**

The recommendations set out in Table 12.6 are given as a minimum requirement for striking formwork: -

**Table 12.6 Striking of Formwork**

| Item | Sulphate Resisting and Ordinary Portland Cement CEM I to KS 1725 Normal Weather (16°C and above) Days | Rapid Hardening Cement Normal Weather (16°C and above) Days | Portland Pozzolana Cement or CEM IV to KS 1725 |
|---|---|---|---|
| Beam Sides, Walls, Columns | 1 | 1 | 1 |
| Slabs (props left under) | 4 | 3 | 5 |
| Beam Soffits (props left under) | 7 | 5 | 9 |
| Removal of props to slabs | 8 | 5 | 10 |
| Removal of props to beams | 16 | 8 | 18.5 |
| Shafts and Tunnels | 1 | 1 | 1.5 |

The removal of props to slabs and beams shall, if directed by the Project Manager, be subject to satisfactory results of the relevant 7 day cube crushing tests.

The above striking times are for normal conditions and before deciding on the actual time for each case, the Contractor shall consider and extend the period as tabled if: -

a) the span of the structural member under consideration exceeds 6 metres for beams and 3 metres for slabs. An additional period of one day for each 500 mm of additional span shall then be allowed;

b) the dead load of the structural member under consideration forms a large proportion of the total design load;

c) constructional loads coming on to the structural member under consideration are being placed soon after the concreting operations and these loads form a large proportion of the total design load;

d) the setting of the concrete has been retarded for any reasons;

e) the temperature falls below 8°C. An additional period of half a day shall be added for each day on which the temperature falls below 8°C. For temperatures falling below 3°C the additional period to be added shall be one day for each day on which the temperature falls below 3°C;

f) any combination of the above points and other considerations which would call for such a precaution to be taken.

g) the span concerned is part of a continuous spanning system and the adjacent two spans have not been cured sufficiently.

Information regarding paragraph (b) above will be supplied by the Project Manager; any other design information relevant to the above shall be obtained by the Contractor from the Project Manager.

## 12.5 CONCRETING

### Requirements

The finished concrete shall be dense, durable, impervious to the ingress of water, free from cracks and honeycombing, and resistant to wear and mild chemical attack. Special concretes will be the subject of their own particular sections of Special Concrete.

### Transporting

Concrete shall be transported to the place of final deposit by approved means.

Barrows, spades and other equipment used in the process of transporting concrete shall be thoroughly cleaned before each day's work or after a long interruption and they shall be free from hardened concrete.

Concrete shall be transported as soon as possible after mixing, by methods which will prevent the segregation, loss or contamination of the ingredients.

Proper bridging arrangements for traffic over reinforcement shall be provided so that the reinforcement is not distorted, damaged or displaced.

Where approval is obtained for concrete to be conveyed by chutes, these shall have a slope (not exceeding 1 vertical to 2 horizontal) such as to ensure a continuous flow of concrete. Additional water shall not be introduced to assist the flow. If deposition is to be intermittent the chute shall be arranged to discharge into a storage hopper. In no case will a clear fall of more than 1 m be permitted at the discharge end of the chute.

Where approval is obtained for pumping the concrete, the pump manufacturer's recommendations shall be followed. The pumps used shall be of adequate capacity and power to ensure delivery of a continuous supply. The Contractor shall provide adequate alternative arrangements for transporting the concrete in case of a breakdown of the pumping equipment. (See also Clause 12.7).

Wherever transport of concrete is interrupted for any length of time (periods of over half an hour shall be treated as such) the chutes, pumps, pipes and any other means of distribution shall be thoroughly flushed out and cleaned. These shall also be flushed out immediately prior to resumption of concreting and shall be kept free from hardened concrete. All washwater used shall be discharged outside the formwork and clear of any freshly placed concrete.

### Placing and Compaction

No concrete shall be placed until the Contractor has obtained approval to do so from the Project Manager. When the Contractor intends to place concrete he shall inform the Project Manager in sufficient time to enable him to inspect the reinforcement, formwork and surface on which the concrete is to be placed and the Contractor shall provide all facilities for such inspection.

This approval shall be sought by presenting two copies of the completed "Structural Concrete Approval Form" (SCAF) to the Project Manager's Representative at least 24 hours before intending to concrete. (See sample page 23).

Concrete shall be placed within 30 minutes of mixing, to uniform level, in layers not exceeding 500 mm deep in such manner as to avoid segregation, and each layer shall be compacted by means of approved vibrators to form a dense material free from honeycombing and other blemishes. Compaction by hand may be used only with the prior approval of the Project Manager.

At least one internal vibrator shall be operated for every four cubic metres of concrete placed per hour and at least one spare vibrator for every three shall be maintained on Site in case of breakdown during concreting operations.

Vibration time, the effective radius and other vibration characteristics shall be in accordance with the vibrator manufacturer's recommendations.

If internal vibrators are used, they shall be withdrawn immediately water or a thin film of mortar begins to appear on the surface of the concrete. Withdrawal shall be carried out slowly to avoid cavitation.

Internal vibrators shall not be inserted between layers of reinforcement less than one and one half times the diameter of the vibrators apart. Contact between vibrators and reinforcement and vibrators and formwork shall be avoided.

Vibrators shall not be used to move concrete from place to place in the formwork.

Where two distinct batches of concrete, placed at different periods of time and forming part of the same concreting operation are required to be formed monolithically with each other, the more mature concrete shall be penetrated by the vibrator to a sufficient depth to effect plastic movement between the two batches. Where the concrete does not respond to the action of the vibrator, it shall be deemed to have set, and no further disturbance will be permitted. Unless otherwise instructed by the Project Manager the condition shall be treated as for a "stoppage of work" and the marrying up of the two concretes shall be effected only when both concretes have properly set.

If external vibrators are used, the formwork shall be strong enough to withstand the forces of vibration.

Temporary or permanent stoppages of work shall be made only against stop ends (Clause 12.5).

Unless otherwise specified, before placing new concrete against concrete which has already hardened, the face of the older concrete shall be prepared by the removal of any laitance and loose aggregate, and shall be cleaned by a jet of compressed air.

When displacers are permitted to be used they shall be so placed that no displacer is within 300 mm of any finished face or within 500 mm of any other displacer. On completion of any lift, displacers shall be so arranged that they project for half their height above the surface.

**STRUCTURAL CONCRETE APPROVAL FORM (SCAF)**
**(To be filled in duplicate before any pour)**

**Contract Details**

Job _____ Job No _____

Contractor _____ Site Engineer _____

**Section and Concrete Details**

Section / Block _____

Level _____ Member _____

Date / Time of Request_____ Date / Time of Pour _____

Concrete Class____ Mix: Design / Nominal (delete one) Batching: Site / Ready Mix (delete one)

**Check List**

| Description of Check | Checked | Remarks |
|---|---|---|
| Reinforcement Fixing | | |
| Chairs / Links, etc. | | |
| Reinforcement Cover | | |
| Shutters / Stop ends | | |
| Shutter Props | | |
| Tie Bolts | | |
| Plumbness / Slope | | |
| Dimensions | | |
| Line and Level | | |
| Preparation hacking of joints | | |
| Water Stops | | |
| Moulds for Cubes | | |
| Materials for Curing | | |
| Any other checks (specify) | | |
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |

**Approval**

Approved ☐ Not Approved ☐

Date: _____ Signature: _____

**Note:**
**Approval by the Project Manager or his Representative does not relieve the Contractor from any of his contractual obligations.**

**Concreting in Deep Lifts**

i. Limitations

Any height exceeding 2.5 m from which concrete is poured into formwork to form sections of wall will be considered within the terms of this Clause.

Concrete in columns may be placed to a height of 4.0 m with careful placing and vibration and satisfactory results. Where the height of the column exceeds 4.0 m suitable openings must be left in the shutters so that the maximum lift is not exceeded.

Deep lift construction will not be permitted where the reinforcing bars are to be placed closer than 100 mm to one another in any direction or, where the clear width at the point of admitting the concrete between one layer of reinforcement and another (or in the case of singly reinforced walls between reinforcement and formwork) is less than 200 mm.

The method shall only be used where trial sections revealed that, in the Project Manager's opinion it can be satisfactorily employed, in which case the requirements of this Specification shall apply except where they are in conflict with the requirements of this particular clause, when the latter shall prevail.

ii. Concrete

In order to prevent segregation of aggregates, concrete mixes shall be designed for increased cohesion, or, where suitable, on a gap-graded basis. The use of approved admixtures may be made to achieve this end (12.2).

At the same time, the mix shall be such as to limit the amount of bleeding in the concrete, and where in the opinion of the Project Manager the quantity of free water rising to the surface is excessive, the mix shall be corrected before further concreting is undertaken.

In order to offset any increase in the water-cement ratio at the upper levels, the Project Manager may require the concrete mix to be modified for the upper depositions.

A slump of 80 mm shall not be exceeded.

iii. Reinforcement

In order that reinforcement is not distorted or displaced during construction as a result of it being used for gaining access in or out of the formwork, all intersections of vertical and horizontal steel shall be properly fastened.

All obstructions caused by spacer blocks or chairs shall be eliminated so as to permit an unobstructed passage for the concrete to the bottom of the formwork. The Contractor may use sliding timber spacers instead of fixed concrete or plastic spacer blocks to position the reinforcement.

iv. Formwork

In view of the high pressures to be expected from this form of construction extra attention shall be paid to the strength and stability of the formwork, to the prevention of loss of grout, and to the prevention of displacement of adjacent panels.

The use of through-bolts and other accessories which might interfere with the free passage of concrete between and around the reinforcement shall be reduced to a minimum by the use of properly designed formwork.

v. Concreting

Particular attention shall be paid to the concreting of the initial sections at the bottom of the formwork to prevent segregation caused by rebound from the hard surface of the kicker, base and/or lower sections. The initial depositions shall therefore be made by using trunking methods, or by placing the concrete through openings formed in the sides of the formwork. Such openings shall not be higher from the hard surface than 2.5m.

In order to reduce differential settlement, and consequently, cracking between two sections of concrete placed at different intervals of time, concreting between one section and another shall be carried out on a gap-construction basis (Clause 12.5). The gap shall subsequently be concreted in distinct lifts each not exceeding 2.5m in height. For the same reason, when concreting two adjacent sections placed at the same time but of different heights (e.g. where boxing out is included), the difference in height shall not exceed 15% of the height of the deeper section.

Concreting from the upper level of the formwork shall be carried out in such manner as to ensure that concrete is admitted centrally between the faces of the formwork. For this purpose the Contractor shall make use of trunking or shall use funnel-shaped hoppers extending for a distance of not less than 1.5 m into the formwork. A sufficient number of such hoppers shall be provided, and/or they shall be capable of movement along the length of the formwork, to enable the concrete to be placed in contiguous heaps at the base of the pour. Such heaps shall not exceed 460 mm in height.

Where excessive bleeding is in evidence, the excess water shall be removed before placing further concrete.

vi. Compaction

Compaction shall be carried out where possible by manual operation of poker vibrators within the formwork. Where this is not possible poker vibrators shall be suspended in sufficient numbers to ensure uniform compaction along the length of wall receiving the concrete, without the need for their withdrawal and re-insertion. The means of suspension shall be such that the vibrators may be progressively and systematically lifted as the concreting proceeds to ensure that every section of placed concrete is married into adjacent and underlying sections.

The use of vibrators to reposition deposited concrete is prohibited. Surface vibrators attached to the formwork may be used only to supplement the main means of compaction.

**Continuous Concreting**

Where the Contractor desires to use continuous concreting method in large sections (rafts and walls), he shall submit a written request to the Project Manager for approval. In the request he shall attach details which shall include but not be limited to the following :-

- Total amount of concrete to be placed in the shift.
- Stock of approved concrete materials on site.
- Capacity of the batching plant.
- Number and type of truck mixers to be deployed for the exercise and movement logistics.
- Number of skilled and other manpower to be deployed for the exercise in shifts.

- Number and capacity of plant to be used in placing concrete (pumps, vibrators, buckets, etc).
- Method(s) of monitoring and dealing with the heat of hydration.
- Details of protection against rain and floodwaters and how to cope with it.

The Project Manager shall consider the above details and other parameters (e.g. weather, satisfactory records of cube test results, availability of adequate working sections where reinforcement placement and the necessary formwork have been approved etc), before making his decision. The Project Manager may order that additional concrete cube moulds be made available as well as arrangements be made for cube crushing with an approved laboratory to cope with the increased demand.

The Project Manager may order that the concreting works be stopped immediately if in his opinion the quality of the works is threatened for whatever reason.

**Hot Weather Concreting** (for temperatures above 20 Degrees Centigrade)

Concreting shall not be permitted if its temperature at placing is in excess of 35°C. In order to maintain the temperature of the concrete below this value the following precautions shall be taken wholly or in part as instructed by the Project Manager:-

(i) All aggregate stockpiles, water lines and tanks as well as the mixer shall be protected from the direct rays of the sun;

(ii) Coarse aggregate shall be cooled by constant watering where possible;

(iii) Mixing water shall be cooled by the addition of ice to the storage tanks where necessary;

(iv) Rapid-hardening cement shall not be used;

(v) Where the above precautions are inadequate concreting shall be carried out during the cooler parts of the day or during the night as may be directed by the Project Manager.

When the air temperature is above 20°C loss of mixing water by evaporation shall be considered in arriving at the amount of water to be added to the mix (Clause 12.2). In order to maintain the water/cement ratio within permissible limits an approved water-reducing agent shall be included in the mix (Clause 12.2).

The maximum water/cement ratios indicated in Clause 12.2 may be increased with the Project Manager's permission by 0.05 (or 2.5 litres/50 kg of cement) during mixing, but on no account shall water be added to concrete directly or indirectly once it has left the mixer.

In order to reduce premature drying of the concrete during transporting and placing, all chutes, formwork and reinforcement shall be cooled by watering when possible, or shall otherwise be protected from the direct rays of the sun. Any water so used shall be removed by jetting with compressed air before placing the concrete in close contact.

As soon as possible after concreting, the formwork shall be stripped (Clause 12.4) and the surface of the concrete shall be treated in accordance with Clause 12.5.

Where drying winds are encountered, wind shields shall be positioned as directed by the Project Manager to protect exposed surfaces of the curing concrete.

**Wet Weather Concreting**

Concreting during periods of constant rain shall not be permitted unless aggregate stockpiles, mixers and transporting equipment, and the areas to be concreted are adequately covered.

During showery weather, the Contractor shall ensure that work can be concluded at short notice by the provision of stop ends. On no account shall work be terminated before each section, between one stop end and another, is complete. Adequate covering shall be provided to protect newly placed concrete from the rain.

**Holes, Cavities and Fixings**

The Contractor shall be responsible for the co-ordination of all requirements of his Sub-contractors as regards provision of holes, chases, cavities and fixings and shall, if required by the Project Manager, prepare drawings giving details of his and his Sub-contractor's requirements and shall send copies of such drawings to the Project Manager prior to construction.

Holes, etc. shall be accurately marked and boxed-out for before concreting operations commence and, without the Project Manager's prior approval, no such holes, etc. shall be formed after the concrete has set.

Where bars, if placed to specified spacing would foul holes of size less than 250 mm x 250 mm the full length of the bar shall be moved to one side and in the case of holes exceeding 250 mm x 250 mm the bars shall be cut on site and lapped with additional equivalent bars, or as otherwise indicated on the drawings.

Wherever possible, the Contractor shall build in all pipework, ironwork, etc. which passes through walls and floors, and the pipework, ironwork, etc. shall first be thoroughly cleaned and freed from any deleterious matter, and every care shall be taken to ensure that it is thoroughly encased in concrete.

Unless otherwise instructed by the Project Manager all electrical conduits to be positioned within the reinforced concrete shall be fixed inside the steel cages of beams and between the top and bottom steel layers in slabs and similar members.

The proposed position of all conduits 25 mm and over in diameter which are to be enclosed in the concrete shall be shown accurately on a plan to be submitted to the Project Manager, whose approval shall be obtained before any such conduit is placed.

Bolts, hooks and other fixings shall be embedded in concrete, or holes shall be drilled and fitted with threaded expanding anchors to receive the bolts. The Contractor shall ensure that bolts, hooks, etc. are accurately positioned. Holding down bolts for machinery shall be set to template.

Where brick or stonework is to form a facing to the concrete or where the end of a brick or stone wall butts against a concrete face, galvanised metal ties of approved manufacture to BS 1243 shall be incorporated. The distance between ties shall be gauged with due regard for the bonding of the walls, and at intervals required by the Project Manager.

**Protection and Curing**

Newly placed concrete shall be protected by approved means from rain, drying winds, sun and contact with substances which can adversely affect it.

No traffic or constructional loads shall be permitted on newly placed concrete until it has hardened sufficiently to take such traffic or load, and only then with the approval of the Project Manager.

Concrete shall at no time be subjected to loading (including its own mass) including compressive stress until it has reached 0.40 of its specified 28 day strength.

Any concrete surfaces, risers and treads of stairways which might be damaged during the construction of the Works shall be adequately protected.

All structural concrete shall be cured using methods approved by the Project Manager.

The method of curing shall prevent loss of moisture from the concrete. Immediately after compaction and for 7 days thereafter concrete shall be protected against harmful effects of weather, including rain, rapid temperature changes and from drying out.

The curing time shall be the number of days given in Table 12.7 unless the average temperature of the concrete during the required number of days falls below 10°C in which case the period of curing shall be extended until the maturity of the concrete reaches the value given in the table.

**Table 12.7 Normal Curing Methods**

Minimum period of protection for different types of cement

| **Conditions under which concrete is maturing** | **Number of days (where the average temperatures of the concrete exceeds 10°C during the whole of the period)** | | | **Equivalent maturity (°C hours calculated as the age of the concrete in hours multiplied by the number of degrees Centigrade by which the average temperature of the concrete exceeds -10°C)** | | |
|---|---|---|---|---|---|---|
| | **Type IV** | **Type I or Type V** | **Type III** | **Type IV** | **Type I or Type V** | **Type III** |
| **1. Hot weather or drying winds** | 7 | 4 | 2 | 3500 | 2000 | 1000 |
| **2. Conditions not covered by 1.** | 4 | 2 | 1 | 2000 | 1000 | 500 |

Type IV - Low Heat Portland Cement/Portland - Pozzolana Cement
Type I - Ordinary Portland Cement
Type V - Sulphate-resisting Portland Cement
Type III - Rapid-hardening Portland Cement
Hot weather - Temperature over 16°C

Curing shall be carried out using either of the following basic methods, or any other method agreed with the Project Manager. Methods involving the use of dampened hessian coverings shall not be used. The method adopted for any particular situation shall be agreed with the Project Manager.

**A. Membrane Applied by Spray**

Liquid membrane compounds shall be applied to moist concrete surfaces as follows:-

(i) Unformed Surfaces

The compound shall be applied immediately after the free water has left the surface.

(ii) Formed Surfaces

The compound shall be applied immediately after removing the forms. If there is appreciable drying, the surface shall be mist sprayed with water to produce a uniformly damp appearance before the compound is applied.

The compound shall be applied in one or two separate applications to produce complete and uniform coverage of the surface. If the compound is applied in two increments, the second application shall follow the first within 30 minutes. The method and rate of application shall be in accordance with the compound manufacturer's instructions.

If rain falls on the newly coated surface before the film has dried sufficiently to resist damage, or if the film is damaged in any other manner, a new coat of compound shall be applied to the affected area equal in curing value to that originally applied.

Compound applied to construction joint surfaces, or to other surfaces to which concrete is to be bonded, shall be removed prior to placing the fresh concrete.

Depending on the surface to which it is to be applied the compound shall conform to the following requirements of AASHTO M148.

(i) Exposed and vertical concrete surfaces - Type I-D (clear compound with fugitive dye).

(ii) Unexposed top surfaces of foundations and superstructures - Type 2 (white pigmented).

**B. Polythene Sheeting**

The concrete surfaces shall be covered with white polythene sheeting as follows:-

(i) Unformed Surfaces

The sheeting shall be laid over the surface as soon as possible without marring the surface, and not until initial stiffening has taken place if a brushed or tamped finish is required.

(ii) Formed Surfaces

The surfaces shall be covered immediately after the removal of the forms.

The sheeting may be in contact with the concrete or made into portable shelters on light weight frames. In both cases, the sheeting shall be jointed and sealed against the concrete surfaces to prevent wind blowing between the sheeting and the concrete.

The white polythene sheet shall conform with the requirements of AASHTO M171. On no account shall clear or any other colour of sheeting be used.

**C. Other Curing Methods**

These shall be agreed with the Project Manager. Methods involving the use of damped hessian coverings shall not be used, unless at least 2 layers of continuous hessian are used and they are kept continuously wet and protected from winds which cause accelerated drying.

Where the thickness of concrete placed exceeds 1.5 m, the Contractor shall submit for the Project Manager's approval proposals to ensure that, during the curing period:-

(a) the rate of rise of temperature in the concrete does not exceed 15°C per hour for the first 3 hours;

(b) thereafter the rate of rise and fall of temperature in the concrete does not exceed 35°C per hour;

(c) the maximum temperature in the concrete does not exceed 70°C; and

(d) the maximum difference in temperature between the core and the surface of the concrete does not exceed 20°C.

The proposals shall include consideration of:-

(a) concrete mix design;

(b) temperature of mix at time of placing;

(c) method of curing.

Where required by the Project Manager, the Contractor shall carry out temperature measurements in the concrete. The method and procedure of temperature measurement shall be agreed with the Project Manager.

**Joints**

(i) Construction Joints

The position of construction joints, when not shown on the Drawings or otherwise required by this Specification, shall be decided on site having regard to the Plant and labour made available by the Contractor for the manufacture, placing and compaction of the concrete as well as its curing, the climatic conditions prevailing at the time of concreting, the nature and size of the formwork, and the conditions of operation of the work. Waterstop shall be provided to all construction joints on water retaining or excluding structures. The Contractor shall submit his proposals to the Project Manager for his approval at least fourteen days before commencing the work.

Construction joint surfaces shall be treated by the "wash-off" method explained below, except where it cannot be practically effected, in which case they shall be treated in accordance with Clause 12.5 as for the placing of new concrete against hardened concrete.

When expanded metal lathing is used for the formation of construction joints a rebate will not be required to be formed. The expanded metal lathing shall be left in the work and shall not extend closer to the finished surface of the concrete than 25 mm. It shall be securely fixed to the reinforcement.

The following particular requirements shall also be observed: -

- Slabs supported on the ground

In order to ensure control in the placing of concrete the Contractor shall provide control boards to form panels not larger than 15 $m^2$ in area. These shall be lifted as the concreting proceeds except where they are of expanded metal in which case they may be left in position as part of the permanent works, provided that they shall not extend closer to the finished surface of the concrete than 25 mm. In the event of a breakdown in the supply of concrete the Contractor shall ensure that an alternative supply of concrete is made available (to finish the work against the control boards acting as stop ends). The joint so formed shall then be treated as a construction joint. Where Ready-mixed concrete is permitted (Clause 12.7) the control boards shall be positioned so as to enclose a volume of concrete equal to that delivered by each truck.

Construction joints and control joints shall be formed normal to the surface of the retained concrete.

- Suspended Beams and Slabs

T-beams shall be formed to their full depth integrally with the adjacent slab and without horizontal joints.

- Columns

Where kickers are indicated on the drawings these shall be cast together with the slab or beam below. On no account shall kickers be cast as a separate operation. Alternatively, the Contractor may adopt "kickerless construction" methods providing he can satisfy the Project Manager that his system is reliable and does not compromise workmanship.

- Walls

Horizontal construction joints in walls shall be formed along straight lines coinciding with the full height of the formwork. The height of the formwork thus controlling the height of the pour shall be determined with reference to the availability of concrete, the size and amount of reinforcement and the means of compaction available.

Unless otherwise indicated on the drawings or otherwise permitted by the Project Manager for the construction of circular tanks, concreting shall be carried out continuously for the full circumference without vertical joints. Where permission is granted for the use of vertical joints the Project Manager may order, at no extra cost to the Employer, the inclusion of an approved type of water stop.

In the case of rectangular tanks, vertical joints shall not be positioned closer to any corner than one metre. They shall be formed with properly rebated stop ends or, where conditions permit, by the use of expanded metal lathing. Unreinforced manholes shall be constructed without vertical joints.

(ii) The "Wash-off Method" of preparing Construction Joints

As soon as possible after concreting, and while the surface is still green, the surface of the concrete forming the joint shall be freed of loose aggregate and sprayed with a fine spray of water to prevent the formation of laitance. Subsequently all excess water shall be removed by a jet of compressed air and the surface left clean to receive further concrete.

Where expanded metal lathing is used for construction joints, this method of surface preparation shall be used in every case.

(iii) Movement Joints

These shall include contraction and expansion joints and shall be as indicated on the drawings.

Contraction joints will be either full contraction joints or partial contraction joints. Where partial contraction joints are specified a period of at least five days shall elapse between the concreting of the section on each side of the joint.

Where the drawings indicate a contraction gap to be formed in any panel (this gap will not exceed one metre), concreting on either side of the gap shall be carried out so as to form partial contraction joints at each side of the gap. Prior to the concreting of the gap section, the joint surfaces shall be cleaned but otherwise left untreated. The concreting of the gap section shall not be carried out until a period of at least five days has elapsed after completion of the adjacent sections.

Alternate panel construction (other than contraction gap construction outlined above) will be permitted only with the approval of the Project Manager, or in those cases where either the reinforcement is not continuous through the joint or where the panels are separated by expansion or contraction joints.

Unless otherwise specified or permitted by the Project Manager all waterstop shall consist of rubber or PVC. Jointing of waterstop shall be by vulcanising, except where PVC is specified or permitted in which case joints shall be by fusing or welding. Materials shall be obtained from an approved manufacturer whose recommendations as to jointing shall be fully complied with.

(iv) Waterstop and Jointing Materials

Waterstop and jointing materials shall be obtained from an approved manufacturer.

All waterstop and jointing materials which are not required for immediate use shall be stored at all times in a cool damp place.

Waterstop shall be manufactured of rubber or PVC (polyvinylchloride) as shown on the drawings, and shall be of the type and size shown on the drawings. Site joints shall be made strictly in accordance with the manufacturer's instructions and all intersections and junctions shall be obtained prefabricated from the approved manufacturer.

Joint filler shall be manufactured of natural bonded cork or other approved material which remains serviceable when wet. Joint filler shall be cut and trimmed accurately to suit the joint profile and shall be maintained accurately in position by means of an approved adhesive. The compressibility of the filler shall be such that it can be compressed to 50% thickness with a pressure of not less than 0.07 N/m square and no greater than 0.4 N/mm square. After 50% compression, the material should recover to at least 70% original thickness within 30 minutes. On no account shall fibreboard or similar be used as filler.

Joint sealing compounds shall be approved polysulphide based compounds suitable for sealing joints in horizontal and vertical/sloping concrete surfaces as appropriate. Sealing compounds shall be applied strictly in accordance with the manufacturer's instructions and shall completely fill the joint recess. Surface primers shall be from the same manufacturer as the sealants themselves. Joint sealing compounds shall be entirely suitable for contact with potable water where these are used in water retaining structures.

Waterstop shall be located and maintained accurately in position and details of the proposed method of fixing shall be submitted to the Project Manager for approval. On no account shall waterstop be secured by nails or by any other means involving puncture of or damage to the waterstop material unless purpose made nailing flanges are incorporated in the design of the waterstop.

(v) Slip Membrane

The slip membrane shall be "slipstrip" as supplied by Serviced Limited, Ajax Avenue, Slough, Berkshire, UK or similar approved material. The slip membrane shall be not less than 1.5 mm thick and shall be a plastic preformed strip with low coefficient of friction specifically manufactured for use as a separating membrane in sliding joints between concrete surfaces. Each sliding joint shall comprise two layers of the membrane unless otherwise shown on the drawings.

The concrete surface to which the slip membrane is to be fixed shall be finished with a steel float to provide a smooth true surface free from dust and loose particles.

(vi) Expandafoam

Expandafoam shall be as supplied by Expandite Limited, 1-9 Chase Road, London, NW10 6PS, UK or similar approved material. Expandafoam is a closed cell flexible polyethylene joint filler used where a readily compressible low load transfer joint filler is required. Expandafoam shall be fixed in position using a suitable adhesive.

**Finishes - General**

All exposed faces of concrete unless otherwise specified shall be hard, smooth and free from honeycombing, air and water holes and other blemishes.

All projecting imperfections shall be rubbed down with carborundum stone or by other approved means and grit and dust therefrom shall be thoroughly washed off with clean water.

**Surface Finishes**

(a) Wood float finishes shall be formed by smooth floating the accurately levelled and screeded surface. Care shall be taken to ensure that the concrete is worked no more than is necessary to produce a uniform surface free from screed marks.

(b) Steel trowel finishes shall be formed while the concrete is still wet by means of a steel trowel applied to an accurately levelled and screeded surface (see also Clause 12.7).

(c) Granolithic finishes shall conform to the recommendations laid down in "Specification for Granolithic floor toppings laid in-situ concrete", as published by the UK Cement and Concrete Association with special reference to monolithic construction.

(d) Screeded finishes shall be formed by levelling and screeding the concrete to produce a uniform, plain or ridged surface as specified; surface hardners shall be applied strictly in accordance with the manufacturers recommendations.

(e) Bush-hammered or pattern-worked finishes.

When exposed aggregate is to be the surface texture, the Contractor shall ensure that a uniform distribution of the coarse aggregate takes place at the face. The formwork shall be removed as soon as possible from the face to be treated; the surface shall be thoroughly wetted and wire brushed, and bush-hammered or pattern-worked as and when instructed. Surface retarders shall be used only when permitted by the Project Manager.

Bush-hammering or pattern-working shall not be relied upon to obscure any defects in the concrete face which arise from formwork imperfections.

**Making Good**

On no account shall any faulty honeycombed or otherwise defective concrete be repaired or patched until the Project Manager has made an inspection and issued instructions for the repair.

Honeycombed or damaged surfaces of concrete, which in the opinion of the Project Manager, are not such as to warrant the cutting out and replacement of the concrete, shall be made good as soon as possible after removal of the formwork as follows:-

1:1.5 Portland Cement and sand mixture shall be worked into the pores over the whole surface with a fine carborundum float in such a manner that no more material is left on the concrete face than is necessary to fill the pores completely so that a uniformly smooth and dense surface of uniform colour is finally presented.

**Removal and Replacement of Unsatisfactory Concrete**

The Contractor shall on the Project Manager's instructions to do so cut out and replace any concrete in any part of the structure if in the Project Manager's opinion:-

(a) the concrete does not conform to the Specification, or

(b) deleterious materials or materials which are likely to produce harmful effects have been included in the concrete, or

(c) the honeycombed or damaged surfaces are too extensive, or

(d) the finished concrete sizes are not in accordance with the drawings within permissible tolerances, or

(e) the setting-out is incorrect, or

(f) the steel cover has not been maintained, or

(g) the protection, including curing, of the concrete during the construction was inadequate, resulting in damage, or

(h) the work of making good or other remedial measures the Project Manager may indicate are not carried out to his satisfaction, or

(i) undue deformation of or damage to the works has taken place due to inadequate formwork, or to premature traffic or to excessive loading, or

(j) any combination of the above points has taken place resulting in unsatisfactory work.

## 12.6 TESTING

**Sampling and Testing** (see also Clauses 12.1 and 12.2)

The Contractor shall provide on the Site equipment, staff and labour for carrying out the sampling and testing outlined in columns 3 and 4 of Table 12.8, and he shall carry out any or all of these tests at such times and with such frequency as may be requested by the Project Manager.

All equipment shall be calibrated and checked from time to time by an approved agency, as the Project Manager may require.

The Contractor shall provide all samples required by the Project Manager. Those samples to be tested in an offsite laboratory shall be carefully forwarded by the Contractor to an approved laboratory. Results of laboratory and site tests shall be kept on site and copies of all test reports shall be forwarded in duplicate to the Project Manager.

Each cube shall be marked with a distinguishing number (numbers to run consecutively) and the date, and a record shall be kept on Site giving the following particulars :-

(a) Cube No.

(b) Date and time made

(c) Temperature and weather conditions

(d) Location in work

(e) 7-day Test

Date : .....

Strength .....

(f) 28-day Test

Date :

Strength .....

Cubes shall be forwarded, carriage paid, to an approved Testing laboratory in time to be tested two at 7 days and two at 28 days. No cube shall be dispatched within 3 days of casting.

Authentic copies of all Work Test results shall be forwarded to the Project Manager directly from the testing laboratory and one shall be retained on the site. The test certificates shall indicate all properties as required by BS 1881.

The Contractor must allow in his rates for concrete test cubes for all expenses in connection with the preparation and conveyance to the Testing Laboratory and testing of test cubes and no claim in respect of his failure to do so will be entertained.

Any batch of concrete which fails to achieve the required characteristic strength shall be removed and made good in accordance with this Specification. The Contractor shall carry out all such work at his own cost.

Frequency of tests and the number of samples required will be governed by the results of the previous tests, the quality of the materials revealed during the tests, and the uniformity of that quality (see Clause 12.2). Should it become evident that the quality of concrete is deteriorating the Project Manager may require additional samples to be taken and test cubes to be made and tested to determine the cause.

**Loading Tests**

The Project Manager may direct that a loading test be made on the works or any part thereof if he deems such test to be necessary for one or more of the following reasons:-

(a) failure of "Site Cubes" to attain the strength requirements of Clause 12.2;

(b) premature removal of formwork;

(c) overloading of structure during construction;

(d) improper compaction and/or curing of concrete;

(e) any other circumstances attributable to alleged negligence on the part of the Contractor, which, in the opinion of the Project Manager, may result in a structure being of less than the required strength;

If the loading test is ordered to be made solely or in part for reasons (a) to (d) the test shall be made at the Contractor's own cost.

If the loading test is ordered to be made for reason (e), the Contractor shall be reimbursed for the cost of the test if the result is satisfactory. No extensions to the Contract Duration shall be granted for delays and disruption resulting from these tests.

Loading test shall be carried out in accordance with the requirements of BS 8110.

If the results of the test are not satisfactory, the Project Manager will direct that the part of the work concerned be taken down or removed and reconstructed to comply with the Specification, or that such other remedial measures as he may think fit be taken to make the work acceptable and the Contractor shall carry out such work at his own cost.

**Table 12.8 Sampling, Testing and Acceptance Standards**

| Materials | Test | Site Sampling | Testing | Accepted Standards | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Cement | Ordinary Portland<br>Rapid Hardening<br>Sulphate Resisting | | <br><br>BS 4550 | BS 12<br>BS 12<br>BS 4027 | Manufacturer's Test Certificate |
| Aggregates | Description and Classification | | BS 812 Sec 2 | BS 882 | |
| | Particle Size | BS 812 Sec 1 | BS 812 Sec 3 | BS 882 | ) |
| | Particle Shape | BS 812 Sec 1 | Visual and<br>BS 812 Sec 3 | | )<br>) Mix |
| | Specific Gravity | BS 812 Sec 1 | BS 812 Sec 3 | | ) Design |
| | Density | BS 812 Sec 1 | BS 812 Sec 3 | | ) Requirements |
| | Voids | BS 812 Sec 1 | BS 812 Sec 4 | | ) |
| | Absorption | BS 812 Sec 1 | BS 812 Sec 4 | BS 8007 Cl 6.2.2 | See Freeze-thaw Test in this table |
| | Organic Impurities | BS 812 Sec 5 | | | |
| | Moisture Content | BS 812 Sec 5 | | | For adjustment of added water for concrete making |
| | Mechanical Properties | BS 812 Sec 6 | BS 882 | | Ten per cent fines value |
| | | | | | |

| Materials | Test | Site Sampling | Testing | Accepted Standards | Remarks |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Water | Suitability | BS 3148 | BS 3148 | BS 3148 | Not required for potable water |
| Concrete | Compacting Factor | BS 1881 Pt 101 | BS 1881 Pt 103 | | ) ) Workability Test ) ) |
| | Slump | | BS 1881 Pt 102 | | |
| | Crushing | | BS 1881 | BS 5328, BS 8110 | Cube test |
| | Water Absorption | | BS 1881 Pt 122 | BS 7263 | Precast concrete Clause 12.8 |
| | Freeze-thaw | BS 1881 | BS 812 Sec. 1 | | Durability test for aggregate not complying with moisture absorption requirements of BS 5337 Cl. 21.2 |
| | Electrolytic Efflorescence | | | | As required for salt-containing aggregate or saline water |
| | Cores | BS 1881 Pt 6 BS 1881 Pt 120 | BS 1881 Pt 6 BS 1881 Pt 120 | BS 1881 Pt 120 with ref to concrete strengths this Specification | See Clause 12.6 |
| Admixes | Compatibility with cement | As required by Laboratory | | | Tests to be carried out by independent Laboratory as required |

The Project Manager may also instruct the Contractor before a loading test takes place to take out cylindrical core specimens from the structures concerned and have them tested. The cutting equipment and the method of doing the work shall be to the Project Manager's approval. The specimens shall be dealt with in accordance with BS 1881. Prior to testing, the specimens shall be available for examination by the Project Manager. If the cores are ordered to be taken solely or in part for reasons (a) and (d) above, the work involved and the testing shall be made at the Contractor's own cost. If the cores are to be taken for reasons (b), (c) and (e) above, the Contractor will be reimbursed the cost if the loading test described in the previous paragraphs proves satisfactory.

## 12.7 SPECIAL CONCRETE

### No-fines Concrete

No-fines concrete for use in subsoil drainage shall consist of a 1:8 cement/aggregate mix by volume. Aggregate shall be 20 mm to 10 mm graded with no more than 5% passing the 10 mm sieve. Only sufficient water shall be added to ensure complete coating of the aggregate. One half of this water shall be placed into the mixer first, after which the aggregate and cement shall be admitted. After partial mixing the balance of the water shall be added until a consistency of mix is achieved.

Preliminary tests shall be carried out on the site to prove the suitability of the finished concrete, and adjustments made to the proportions and or grading as may be required by the Project Manager.

### Air-Entrained Concrete

Concrete for roads, and those structures where specified, shall include an approved air-entraining agent capable of producing a 5% air-entrainment with a tolerance of 0.5% (Clause 12.2).

The mix shall be purposely designed, having regard for the nature of grading of the aggregates and air-entraining agent being used.

Preference shall be given to the use of air-entraining agents which can be administered in fixed calibrated amounts through a dependable mechanical dispenser or sachet, and which are added to the mixing water.

Frequent air meter tests shall be carried out and the consistency of the air-entrainment maintained to the above tolerances by adjustments in the mix, as may be necessary.

### Concrete in Benching

Concreting for benching in manholes, pumping stations and works structures shall consist of Grade C25P concrete unless otherwise specified. It shall be placed with low workability to the approximate shape required and, while still green, shall be finished with not less than 50 mm of Grade C25P concrete to a steel trowelled finish and to the contours indicated on the drawings.

### Ready Mixed Concrete

Unless otherwise stated the relevant clauses of BS 5328 shall apply.

Ready mixed concrete shall only be used with the prior approval of the Project Manager. The Contractor shall not be relieved of his obligation to provide concrete to the standard laid down in this Specification by virtue of any approval given for the use of concrete supplied by others, and the Project Manager reserves the right to withdraw his approval at any time consequent on any deterioration in

the quality of the Concrete, or unsatisfactory delivery or any other reason he considers detrimental to the Works.

Ready mixed concrete manufactured off the site shall be transported in a revolving drum and shall be continuously agitated until it is used in the work unless otherwise approved. The time interval between adding water to the drum and placing shall not exceed 90 minutes. The time interval between completion of mixing and placing shall comply with Clause 12.5.

**Granolithic Concrete**

Refer to Clause 12.5.

**Pneumatically Applied Mortar (Gunite)**

(i) Requirements

The pneumatic application of mortar shall be carried out only by Contractors experienced in this type of work and who are in possession of proper Plant and equipment. Nozzle men employed on the works shall be skilled operators.

The finished product shall be dense, of even texture and colour, and to the requirements of strength, tolerance and finish set out in this Specification.

(ii) Strength

After curing, the mortar shall be capable of producing cored samples with a 28-day characteristic strength of not less than 27.5N/mm$^2$.

(iii) Materials

Sand, cement and water shall comply with the requirements of Clause 12.2 of this Specification except that the sand shall conform to the grading of Zone 2 of BS 882.

(iv) Proportions

The proportions to be used in the mix shall be determined with reference to the requirements outlined in sub-clause 12.7(i) and the mix shall be not weaker than one part of cement to four parts of sand by volume, having regard to the adjustments for bulking of the sand.

(v) Operation

Air and water pressures shall be such as to permit the proper application of the mortar, and shall be determined with reference to hose lengths and nozzle diameter.

Mortar rebound, recovered, cleaned and uncontaminated with extraneous matter, may be re-used but not for water-retaining structures. It shall be regarded as an equivalent volume of sand which shall not exceed 20 per cent of the total sand requirement. Rebound which has lodged in the formwork or between reinforcement shall be removed by compressed air.

Reinforcement shall be completely embedded in the mortar by the proper direction of the nozzle and the mortar shall be applied as a steady and uninterrupted flow from the nozzle.

Mortar application shall be discontinued at any section of the work where sagging of the mortar is in evidence.

(vi) Joints

These shall be formed by sloping the surface to a thin edge. Before applying new mortar, the surface shall be thoroughly wetted. Laitance shall be removed by the initial discharge of fresh mortar.

(vii) Tolerances

The thickness of applied mortar shall be not less than the dimensions shown on the Drawings nor greater than 10 mm over those dimensions, unless otherwise indicated on the Drawings or otherwise permitted.

(viii) Protection and Curing

Shall be carried out in accordance with the requirements of Clause 12.5.

(ix) Finishes

Unless otherwise specified all surfaces shall be brought to a granular textured finish by means of a wooden float.

(x) Cold Weather Work

No application of mortar shall be made against frozen surfaces nor when the air temperature is below 5°C.

(xi) Making Good

Any defective work shall be cut out immediately and made good with fresh mortar pneumatically applied.

**Cement Grouts**

Cement grout shall be mixed in the relevant proportions indicated in the following table using the minimum quantity of water to ensure the necessary fluidity and to render it capable of penetrating the work.

| Class | Nominal Mix by Mass | |
|---|---|---|
| | Cement | Sand |
| G1 | 1 | - |
| G2 | 1 | 3 |
| G3 | 1 | 10 |

Cement grout shall be used within one hour of mixing, except where containing a retardant admixture.

**Pumped Concrete**

Where pumping of concrete is permitted to be used no relaxation of the requirements of this Specification will be permitted. Particular attention shall be paid to the proper grading of aggregates to prevent bleeding and/or segregation during the pumping operations. The inclusion of water-reducing additives or other materials, including flyash, to improve the flow characteristics of the concrete will only be permitted where it can be shown that they do not adversely affect the concrete either in the plastic phase or in the finished work.

## 12.8 PRECAST CONCRETE UNITS

**Requirements**

Unless otherwise agreed in writing by the Project Manager, all precast concrete units shall be manufactured on site and shall be true to dimension and shape, with true arises and with perfectly smooth exposed faces free from surface blemishes, air holes, crazing and other defects, whether developed before or after building-in. They shall comply with the appropriate BS. (Note: Coping blocks and similarly exposed units are particularly susceptible to crazing when the concrete is manufactured using high water/cement ratios)

The maximum size of coarse aggregate in precast concrete shall not exceed 20 mm except for thicknesses less than 75 mm where it shall not exceed 10 mm.

The compacting of precast concrete shall conform with requirements given elsewhere in this Specification except for thin slabs where use of immersion type vibrators is not practicable. The concrete in these slabs may be consolidated on a vibrating table or by any other methods approved by the Project Manager.

Steam curing of precast concrete will be permitted. The procedure for steam curing shall be subject to the approval of the Project Manager.

The precast work shall be made under cover and shall remain under the same for seven days. During this period and for a further seven days the concrete shall be shielded by sacking or other approved materials kept constantly wet. It shall then be stacked in the open for at least a further seven days to season before being set in position. Where steam curing is used these times may be reduced subject to the approval of the Project Manager.

Precast concrete units shall be constructed in individual forms. The method of handling the precast concrete units after casting, during curing and during transport and erection shall be subject to the approval of the Project Manager, providing that such approval shall not relieve the Contractor of responsibility for damage to precast concrete units resulting from careless handling.

Repair of damage to the precast concrete units, except for minor abrasions of the edges which will not impair the installation and/or appearance of the units, will not be permitted and the damaged units shall be replaced by the Contractor at his own expense.

Except where precast work is described as "fair face" or as having "exposed aggregate" or terrazzo finish the moulds shall be made of suitable strong sawn timber true in form to the shapes required. Unless otherwise described, faces are to be left rough from the sawn moulds.

Where precast work is described as "fair face" the moulds are to be made of metal or are to have metal or plywood linings or are to be other approved moulds which will produce a smooth dense fair face to

the finished concrete suitable to receive a painted finish direct and free from all shutter marks, holes, pittances, etc. Where precast work is to have an "exposed aggregate" or terrazzo finish the moulds shall be constructed to the requirements given for moulds for "finished fair" work.

The method of achieving the exposed aggregate finish shall be "aggregate transfer" or other approved method.

**Kerbs**

Precast concrete kerb shall conform to BS 7263: Part 1: 1990, except that coarse aggregate shall conform to BS 882: 1983. Fine aggregate shall consist of sand resulting from the natural disintegration of rock.

Approved air-entraining agents may be permitted to be used providing that approved adjustments are made to the mix with regard to water and fine aggregate proportions (Clause 12.2). In such cases the moisture absorption limits set out in BS 340 may be neglected subject to the concrete satisfying the freeze thaw test laid down under the heading "Weir Blocks and Sills".

**Paving Slabs**

Paving slabs shall conform to BS 368 and shall be 50 mm thick unless otherwise specified.

**Other Blocks**

Blocks used for building work and filter bed walls shall conform to BS 6073: Part 1: 1981.

**Wall Units**

L-shaped wall units shall conform to the requirements of BS 8110. Where it is not intended to use coping blocks for the protection of the upper exposed surface of the units, the uppermost 150 mm, for the full width of the unit, shall be formed with concrete composed of aggregate complying with BS 882: 1992. Such concrete shall be formed integrally with the main body of the concrete.

**Other Items**

Manhole ring units, tapers, cover slabs, segments and concrete pipes are referred to under their particular heading.

## 12.9 SITE BOOKS AND STANDARDS

**Instructions to be Recorded**

The Contractor shall provide and keep permanently on the Site a numbered triplicate book wherein the Contractor shall record all instructions relating to concrete work issued by the Project Manager. One copy of every entry therein shall be sent to the Project Manager on the same day as the entry is made.

**Site Diary**

The Contractor shall provide and keep permanently on the Site a continuous entry diary wherein the Contractor shall record details of formwork, construction, placing of reinforcement, concreting and

curing operations, striking of formwork, making good and daily temperature and weather conditions. This diary shall always be available for inspection by the Project Manager.

**Copies of Standards and Codes**

The Contractor shall provide and keep permanently on the Site copies of the following British Standard Codes of Practice:-

BS 812
BS 882
BS 1881
BS 4466
BS 5328
BS 5628
BS 8007
BS 8110

The Contractor shall in addition provide and keep permanently on the Site copies of such other Standards, Codes, Notes and Specifications as may be required by the Project Manager.

## 12.10 WATER RETAINING STRUCTURES - SPECIAL CLAUSES

Note: In the event of any differences between the "Special Clauses" and the previous Specification under Section 2.3 the provisions of these "Special Clauses" shall have precedence.

**Making Good**

The cement mortar used in filling recesses in the concrete formed by bobbins in connection with formwork shall contain an approved expanding admixture.

**Construction Joints in Water Retaining Structures**

In water retaining structures PVC waterstops not less than 130 mm wide manufactured by an approved manufacturer shall be built into all construction joints in external walls and construction joints in roofs of potable water retaining structures. Construction joints shall be formed at positions agreed by the Project Manager.

The cost of forming construction joints shall be included by the Contractor in his general concrete rates.

**Water tightness of Structures**

The Contractor shall be solely responsible for the water tightness of structures and any remedial measures necessary.

**Hydrophilic Rubber Sealer**

Hydrophilic rubber sealer shall be co-extruded from chloroprene and hydrophilic rubbers into a cellular strip approximately 25 mm x 7 mm thick which expands as it absorbs water. The strip shall incorporate an expansion delay coating to prevent activation during setting of the surrounding concrete.

Hydrophilic rubber sealer shall be applied to the perimeter of all pipes to be built into concrete structures, to existing concrete walls and slabs at or below water levels which have been demolished and require extension, and to other locations as indicated on the Drawings.

The strip sealer shall be bonded to the pipe diameter or on to the face of demolished structures on to which new concrete is to be placed so as to be at least 100 mm from the wall surface. Where dowel bars are incorporated in bonding new concrete to old the sealer shall be placed above the dowel bars on the "wet" side of the structure. Bonding shall be accomplished using proprietary neoprene or epoxy adhesives to ensure the sealer is not disturbed during placement of the concrete.

The sealing strip shall be from an approved supplier and application shall be strictly in accordance with the manufacturer's recommendations.

**Waterproof Membranes for Concrete Roofs and Gutters**

Concrete roofs and gutters shall be waterproofed by the provision of a membrane to be laid on top of the slab. The membrane shall be a cold applied preformed waterproof laminated layer comprising a HDPE carrier film with a solar reflective surface and a self-adhesive rubber bitumen compound complying with the requirements of BS 8102. The membrane shall exhibit a tear resistance of at least 250 N/mm when tested in accordance with ASTM D1004. Adhesion to primed concrete to itself shall exceed 1.75 N/mm when tested in accordance with ASTM D100, and a puncture resistance of 290 N 65 mm when tested in accordance with ASTM E154. Membranes shall exhibit a water resistance of not more than 0.14% after 24 hours when tested in accordance with ASTM D574. The contractor shall submit proposals for waterproof membranes for approval, together with manufacturers catalogues and technical literature.

Waterproof membranes shall be installed entirely in accordance with the manufacturer's instructions. Membranes shall be continued up the internal face of the parapet wall and finished centrally under the coping. Adjacent strips of membrane shall be overlapped to provide a waterproof joint. The provision of a waterproof membrane on the roof slab shall not relieve the Contractor of his responsibilities to produce a waterproof roof slab which shall have successfully passed a water tightness test before the membrane is installed.

## EXCAVATIONS AND EARTHWORKS

### 3.1 Scope

This specification shall apply to all works for which excavation or filling is required and will include foundation works, terracing, benching, landscaping works, road works, parkings, drainage trenching etc.

### 3.2 Codes of Practice

The Contractor shall comply with the following Codes of Practice or the latest revisions of them:

| | |
|---|---|
| Site Investigations | BS 5930 |
| Earthworks | BS 6031 |
| Foundations | BS 8004 |

Protection of building
against water from
the ground C.P. 102, BS 8102

### 3.3 Inspection of Site

The Contractor is advised to visit the site and ascertain the nature of the soil and sub-soils to be excavated. No claim will be allowed on account of these being of a different nature from that for which he has allowed in his prices.

### 3.4 Procedure

The excavations and fillings shall be carried out in such a manner and order as the Project Manager may direct.

### 3.5 Existing trees and shrubs

The Contractor shall cut down and remove shrubs and trees as directed. No shrubs, trees, plants etc., shall be removed except as directed by the Project Manager and the Contractor shall be held responsible for any damage caused by the building operations to those shrubs, trees etc., not so directed to be removed and will be required to replace such trees on a like for like basis.

### 3.6 Site Clearance

All grass, vegetable matter etc., must be removed or burned on site at the commencement of the contract over areas as directed by the Project Manager. No burning shall take place on site without an express permission of the Project Manager.

### 3.7 White Ant - Insecticide Treatment

The Contractor must destroy any white ants' nests found within the perimeter of the buildings and within a distance of 20 metres from the buildings externally and take out and destroy queen ants, impregnate holes and tunnels with approved insecticide and back-fill with hard material well rammed and consolidated.

### 3.8 Excavation

i) The excavations are to be executed to the widths shown on the Drawings, and to the depths below existing ground levels as directed by the Project Manager in order to obtain satisfactory foundations. If the Contractor excavates to any widths or depths greater than those shown on the Drawings or as instructed by the Project Manager he shall, at his own expense, fill in such widths or depths of excavation beyond those instructed or shown with concrete to the satisfaction of the Project Manager.

ii) The Contractor shall level and ram bottoms of all excavations to receive concrete, from steppings if necessary or as directed to allow for sloping ground, and water the excavations properly before pouring concrete.

iii) The Contractor shall report to the Project Manager when secure bottoms to the excavations have been obtained. Any concrete or other work executed before the excavations have been inspected and approved shall, if so directed, be removed and new work substituted after the excavations have been approved all at the Contractor's

expense.

iv) Excavations made below required levels shall be filled with mass concrete (1:4:8) at the Contractor's expense.

### 3.9 Blasting

No blasting will be permitted without the prior approval of the Project Manager and Local Authority.

### 3.10 Borrow Pits

No borrow pits shall be opened up on site.

### 3.11 Hardcore filling

Hardcore for filling under floors etc., shall be good hard stone, ballast or quarry waste (not Magadi or similar soft stone) to the approval of the Project Manager broken to pass not greater than a 150 mm ring or greater than 75% of the finished thickness of the layers being compacted whichever is the lesser and graded to contain sufficient smaller pieces to fill all voids so that it can be thoroughly compacted. The filling is to be laid in layers each of a consolidated thickness not exceeding 225 mm, well watered and compacted by hand or mechanical tampers. The top surface of the hardcore shall be leveled or graded to falls as required and blinded with a 50 mm layer of similar material finely crushed and well rolled and watered immediately before concrete is laid.

### 3.12 Filling obtained from the excavations

Filling obtained from surplus excavated materials is to be free from all weeds, roots, vegetable or other unsuitable materials and is to be filled in layers each not more than 225 mm finished thickness. Each layer shall be well watered and consolidated before the subsequent layer is filled in.

### 3.13 Materials found in the excavations

No sand, aggregate or other materials found in the excavations is to be used in the works without the written permission of the Project Manager.

### 3.14 Anti-termite treatment

Anti-termite treatment shall be carried out using 'Gladiator' or other chemical approved by the Project Manager in writing, diluted to a water emulsion in accordance with the manufacturer's written instructions.

The treatment shall be applied to the whole area of the hardcore bed and all surfaces immediately prior to the placing of the damp-proof membrane under the concrete floor slab.

Treatment shall not be applied whilst it is raining or to surfaces of filling, which are wet and application shall be strictly in accordance with manufacturer's instructions.

The contractor's attention is drawn to the fact that this treatment can be toxic to animals and human life, and he shall prevent contamination of water supply systems, and he shall be required to cover up and protect treated areas immediately after treatment and post written notices of the treatment at prominent points on the site and the building.

Immediately following treatment, the Contractor shall provide to the Project Manager for onward transmission to the Employer, a written five (5) year guarantee which guarantees:

- That the chemical used complies with this specification and has been used in accordance with the manufacturer's instructions;
- That the guarantee shall be continuous for a period of five years from the date of treatment;
- That should infestation by any termites appear before the end of the five year period, the Contractor will return and re-treat as necessary to eliminate the infestation entirely and at his cost on each occasion that infestation appears within the five year period.

The contractor shall carry out annual inspections commencing three months after treatment and continuing to the end of the guarantee period to ascertain the presence of termites, and should any presence be found, the Contractor shall re-treat as necessary to eliminate any infestation entirely and at his cost on each occasion that infestation is found.

### 3.15 Protection of pipes, cables etc.

Before commencing works which include excavations or ground leveling by manual or mechanical excavation, the Contractor shall at his expense ascertain in writing from Telkom, K.P. & L. Co. Ltd., Nairobi City Council Engineer's Department (Water & Sewerage section) and all other public bodies, companies and persons who may be affected, the positions and depths of their respective ducts, cables, mains or pipes and appurtenances. He shall thereupon search for and locate such services.

The Contractor shall at his expense effectively prop, protect, underpin, alter, divert, restore and make good as may be necessary all pipes, cables or ducts, poles or wires and other appurtenances disturbed or damaged during the progress of the works, or in consequence thereof.

Services required to be removed or altered by virtue of the layout of the permanent work and not the manner in which the work is carried out, shall be so removed or altered at the expense of the Employer.

The Contractor shall be liable for the cost of repairs to any services damaged as a result of carrying out the works and shall further be liable for any damage which may be shown during the period of maintenance, to have arisen through the execution of these works.

### 3.16 Rates for excavations

The rates for excavation, including excavation in rock, must include for trimming, leveling and preparing bottoms and all faces to receive concrete, etc., and for any extra excavation required for planking and strutting.

Prices shall include for excavating in any material encountered unless specifically otherwise described, handling, etc., of extra bulk after excavating, or before consolidating, any extra excavation required for formwork or planking and strutting, circular work, grubbing up any old drains, roots, etc., that may be encountered, for trimming sides and leveling and ramming bottoms, forming steppings and trimming excavation or filling of embankments and batters as required.

In his price for the Bills of Quantities item "Keep excavations free from all water" the Contractor shall allow and make provision for keeping the whole of the work thoroughly drained and clear of water below the lowest level of any part of them so long as may be required and if considered necessary by the Project Manager, continuously day and night by petrol or hand pumps or other mechanical

appliances, pipes, chutes, dams, manholes, sumps, diversions or any other means necessary for the purpose. If no such item is provided in the Bills of Quantities the cost of complying with this requirement shall be included in the rates for excavation. Water pumped from the trenches shall not be allowed to run down the road channels but shall be conveyed to the nearest surface water sewer, ditch or river through troughs, chutes or pipes.

### 3.17 Definition and Classification of Excavated Material

Excavation in solid rock in the Bills of Quantities (if classified) will be categorised in three Classes:

(i) Class I:

Soft rock of the type known locally as "tuff" or "magadi" which in the opinion of the Engineer cannot be considered as hard rock but which considerably increases the amount of labour needed for its removal shall be known as Class I rock. Murram and Kunker is specifically excluded and will be reckoned as common excavation.

(ii) Class II:

Very weathered blacktrap or lava containing many fissures and faults shall be known as Class II rock. This type of rock contains stones and boulders of unweathered or incompletely weathered blacktrap or lava. A boulder or outcrop of harder rock 13.5 cubic metre or less, and first quality Nairobi blue, grey or green building stone in a formation which is massive and geologically homogeneous, will be deemed to be Class II rock.

(iii) Class III:

Blacktrap in a formation which is massive and geologically homogeneous shall be known as Class III rock.

The opinion of the Project Manager in classifying rock shall be final and binding, unless it contradicts the classifications above.

If no classification is given in the Bills of Quantities, the Contractor's rates shall be deemed to cover any class of rock, or to have been assessed on the basis of the Contractor's site investigation. Hence no claim for change of rate shall be accepted on account of change in type of rock encountered.

Common excavation or excavation in normal material / soil shall mean excavation in any material, which are not solid rock or unsuitable material as defined in this Clause.

All excavation shall be classified either as unsuitable materials or as suitable material. Unsuitable material shall comprise:

i. Material from swamps or marshes, silt, perishable material, slurry or mud; or
ii. Any material:

a) Which is a highly organic clay or silt;
b) Which is clay having a liquid limit exceeding 8 and/or a plasticity index exceeding 55;
c) Which is susceptible to spontaneous combustion;
d) Consisting of such domestic refuse which by virtue of its physical or chemical composition or moisture content will not compact to form a stable fill.

Breaking up artificial hard material such as concrete slabs and the like may be paid at the rates for excavating in rock. The Project Manager shall reasonably assess the class of rock whose rate shall apply. The assessment shall take account of the condition of the material, considering its hardness, homogeneity, reinforcement and/or porosity.

### 3.18 Rates for disposal

Rates for disposal of excavated material should include for the selection of spoil as it arises and for all double handling and re-excavation from spoil heaps not specifically ordered by the Project Manager.

### 3.19 Polythene sheeting

Polythene sheeting shall be 1000 gauge obtained from an approved manufacturer. Joints in sheeting shall be treble folded with 150 mm fold and taped at 300 mm intervals with 50 mm wide black plastic adhesive tape approved by the Project Manager. The sheeting shall not be stretched but shall be laid loose with sufficient wrinkles to permit shrinkage up to 15%.

### 3.20 Grassed areas

Areas to be grassed shall be cleared of all debris, stones and roots and dug up to a depth of 300 mm.

Where outcrops of rock or murram occur, they will be removed or covered with suitable soil to a depth of 150 mm.

### 3.21 Storage and handling of explosives and blasting.

The removal of hard materials by use of explosives will only be permitted subject to compliance by the Contractor in all aspects with the Explosives Laws of Kenya. With respect to this site however, the use of explosives may not be accepted.

### 3.22 Excavations of cuttings and forming of embankments

The Contractor shall carry out the excavations of cuttings and forming of embankments in accordance with the Drawings and shall adhere to slopes, levels, depths and heights shown therein. If the sides are excavated beyond the widths shown on the drawings, or embankments formed beyond the widths shown on the drawings, the Contractor shall make good each affected area in a manner satisfactory to the Project Manager.

### 3.23.1 Compaction of earthworks

All formation or filling material used in earthworks shall be compacted to specification by plant approved by the Project Manager for that purpose. Compaction should be to the specified densities. The Contractor shall submit to the Project Manager the method statement for compaction for approval. Compaction test should comply with the BS1377: Methods of test for soil classification and compaction or its latest revision.

### 3.24 Earthworks materials

Imported Murram and In-Situ natural material

Murram shall be from an approved quarry so as to exclude vegetable matter, loam, topsoil or clay. The CBR of the murram as determined for a sample compacted to maximum density as per BS1377 and soaked in water for 4 days, shall not be less than 30. The CBR is guide to quality only while compaction will be judged on density. The in-situ natural material should also meet the CBR criteria before it is declared suitable for the road base.

Granular material for pipe bedding

Granular material for pipe bedding shall consist of well and evenly graded material such as gravel or broken stone, having a grading of down, readily compactable and free draining. The grading of supplies will be frequently checked.

Stone dust

This shall be blacktrap screened on the following grading:

| | | |
|---|---|---|
| Passing | 10mm sieve | 100% |
| Passing | No. 4 sieve | 85%-100% |
| Passing | No. 100 sieve | 5%-25% |

## STRUCTURAL STEELWORK

### General Requirements

Unless otherwise specified on the drawings or described in the specifications all steelwork shall comply with the requirements of BS 5950: 1990 "Structural Use of Steelwork in Buildings" including the current addenda and BS 2853: 1957 "Specification for the Design and Testing of Overhead Runway Beams".

### Drawings

Two copies of all shop drawings by the Contractor shall be submitted to the Project Manager for his approval, but this approval shall in no way relieve the Contractor of his responsibility for the work under the Contract and the Contractor shall be fully responsible for ensuring that the details and workmanship result in correct assembly of the work. These drawings shall be submitted to the Project Manager in sufficient time for any amendments to be incorporated in the works.

No variations or alterations from the approved shop drawings and this specification shall be permitted without the consent of the Project Manager.

### Substitution of materials.

No substitution of materials or section sizes shall be permitted without the express written permission of the Project Manager. Notification of any substitutions offered by the Contractor shall be made within 28 days after the Contract.

### 13.4 Testing laboratory

Testing of materials is to be carried out at the Contractor's expenses at a testing laboratory as approved by the Project Manager.

### 13.5 Inspection

The Contractor shall give the Project Manager ample notice of the beginning of the work so that inspection may be provided at the works where steelwork is being fabricated and at all places where materials for the work are being manufactured or from which they are being supplied. No material shall be manufactured or work done in the shop before the Project Manager has been notified.

The Contractor shall supply the Project Manager with copies of the ordering list of all materials which are obtained from rolling mills and shall also supply test sheets for such materials. List of materials to be obtained from stock with the name of the manufacturers shall be supplied. If test sheets for these materials are not available, the Contractor may be required to dispatch sample pieces as directed to an approved laboratory. In this case the Contractor will be required to provide the sample pieces free of charge and pay the carriage to the testing works. The decision of the Project Managers as to the acceptance or rejection of the materials in view of reports obtained from the testing works shall be final. The Contractor shall bear the costs of all tests materials and workmanship.

### 13.6 Structural steel

Unless otherwise stated structural mild steel shall comply in all respects with the requirements of BS 7668: 1994 Grade 43A or the equivalent grade in Parts 1 to 3 of BS EN 10113: 1993.

Hot rolled Hollow Sections shall comply with the requirements of BS 7668: 1994 Grade 43 C.

The dimensions of all structural rolled shapes except angles, the form, weight, tolerance etc., shall conform to the requirements of BS 4 "Structural Steel Sections, part 1 Specification for Hot rolled Sections", including current addenda. Angles shall comply with BS EN 10056 "Specification for Structural Steel Equal and Unequal Angles"

Rectangular hollow sections shall conform to the requirements of BS EN 10210 "Hot finished Structural Hollow Sections of non-alloy and fine grain Structural Steels".

Cold formed Zed purlins shall have a minimum yield stress of 200 N/mm².

### 13.7 Bolts, nuts and washers

Mild steel black bolts and nuts shall conform to the requirements of BS 3643 "Black Bolts and Nuts". Washers shall comply with the requirements of BS 4320: 1968 (1998) "Black Washers".

### 13.8 Electrodes

Electrodes shall conform with the requirements of BS EN 499 "Covered Electrodes for Manual Metal Arc Welding of Non-Alloy and Fine Grain Steels".

### 13.9 Protection of Steelwork

All steelwork shall be protected in the following manner:-

Surface Preparation

Unless otherwise specified all surface preparation shall be by blast cleaning using compressed air, high pressure water or airless methods. Cleaning shall normally be to second quality finish comparable with Swedish Sa 2.5 standard. Abrasives shall be such as to produce a surface roughness in the steel not exceeding 4 mils (100 microns). Priming of the cleaned surface shall be undertaken within 4 hours of completing the cleaning process. (See Section 8).

As an alternative to blast-cleaning, where appropriate, an approved pickling process (similar to the Footner Process) may be used. In this case a pre-fabrication primer shall be applied to the surface while it is still warm and after it has completely dried.

Where approved or otherwise specified, mechanical or flame-cleaning methods may be employed for surfaces which are not appreciably rusted. Cleaning shall be comparable to Swedish b.ST. 3 Standard.

Metal Coatings

Where particularly specified metal coatings shall comprise either hot dip galvanising conforming to the requirements of BS 729 or sprayed aluminium or zinc coatings conforming to the requirements of BS 2569: Pt 1 as may be specified. In the case of hot dip galvanising the metal shall be applied at the rate of 2 oz/sq.ft (610 g/m²) of surface area in a uniform covering 4 mils (100 microns) thick. In the case of sprayed metal coatings the metal shall be applied to the previously blast-cleaned surface to give a covering of 4 mils (100 microns) nominal thickness.

For small items, such as bolts and threaded parts where metal coatings are specified, sherardizing shall be carried out to give a covering of 1.2 oz/sq. ft (330 g/m²) of surface area.

Shop Painting

Painting shall not be undertaken when the temperature is less than 3°C or when the Relative Humidity is greater than 85%.

Contact surfaces to be connected by high strength friction grip bolts shall not be painted. Where surfaces are subsequently to be welded, galvanising, metal spraying, or shop painting shall be terminated* within 75mm of the areas to be welded. Machined surfaces shall not be painted, but shall be protected against corrosion by means of a rust-inhibiting coating which can be easily removed on site or is not detrimental to the jointing condition if left in position. Other steel surfaces which, prior to despatch are to be brought together in permanent contact with each other, shall after cleaning be primed and the work bolted up while the paint is still wet. Finishing paint shall be applied to the connected joint.

Unless otherwise specified all painting with the exception of the final finishing coat, shall be carried out in the shops.

Protective Paint Systems

*The following sub-clause establishes the requirements for normal work. Where a Particular Specification relating to any particular work is in conflict with this sub-clause the requirements of the Particular Specification shall prevail.*

* This does not apply to pre-fabrication primers

Immediately after cleaning, those surfaces which have been prepared by blast-cleaning or pickling shall be treated with Zinc Pre-fabrication primer to 25 microns minimum DFT. After fabrication zinc primer (the metallic content of which shall not be less than 85%) shall be applied to a minimum DFT of 75 microns. Finishing coats (one of which shall be applied on site) shall consist of the following.

For normal conditions - a high build system - consisting of oil-resin micaceous iron oxide to 75 microns minimum DFT followed by a site applied oil/alkyd undercoat to 40 microns minimum DFT and a finishing coat of oil/alkyd gloss paint to 40 microns minimum DFT.

For submerged or partially submerged conditions a high - build paint system shall likewise be used, but shall consist of two coats of OIL paint of100 microns each.

Those surfaces which have been metal coated, and are required to be painted in addition shall first be treated with a coat of an approved pre-treatment primer. This Primer shall be such that its phosphoric acid content has been adjusted for etch-priming purposes. This shall be followed by one coat of zinc-chrome primer. Unless otherwise specified the finish shall consist of two coats of lamellar-pigmented paint, either micaceous iron oxide of aluminium as directed, except where aggressive, submerged or partially submerged conditions prevail, when the finish shall consist of two coats of epoxy-pitch paint applied in equal thickness of 5 mils (125 microns) each.

Those surfaces which have been mechanically or flame-cleaned shall be brush-primed with one coat of red lead or calcium plumbate paint and finished with two coats of micaceous iron oxide or aluminium paint as directed.

**FABRICATION**

**13.10 General**

Structural material, either plain or fabricated, shall be stored at the fabrication shop above the ground on platforms, skids or other supports. It shall be kept free from dirt, grease or other foreign matters and shall be protected as far as is practicable from corrosion.

Structural sections before being worked must be straight. If straightening is necessary, it shall be done by methods that will not injure the metal and sharp kinks and bends shall be cause of rejection of the material.

Finished members shall be true to line and free from twists, bends and open joints.

The ends of lacing bars shall be neatly rounded unless another form is required.

The bearings shall be accurately machined square with the axis so that the parts connected shall butt over the entire surface of contact.

Slab bases and base plates shall be in one solid piece accurately machined over bearing surfaces and shall be in effective contact over the whole areas.

Unless otherwise instructed, a bearing face which is to be otherwise grouted directly to a concrete foundation need not be machined if the bearing surface is true and parallel to the machined upper face.

### 13.11 Holes and bolted connections

All holes drilled or punched shall be drilled (punched) so that before any reaming is done, a cylindrical pin 3mm smaller in diameter than the nominal size may be entered normal to the surface of the member, without drifting, in at least 75% of the contiguous holes in the same plane. If requirement is not fulfilled, the badly drilled (punched) pieces will be rejected. If any hole will not pass a pin 5mm smaller in diameter than the nominal size of the hole, the steel member having such a hole will be rejected.

When all holes are reamed or drilled, 85% of the holes in any contiguous group shall, after reaming or drilling, show no offset greater than 1mm between adjacent thicknesses of metal.

The drilling done during assembling shall be only such as to bring the parts into position and not sufficient to enlarge the holes or distort the metal. If any hole must be enlarged to admit the metal, it must be reamed.

Holes shall be truly cylindrical. The size of holes shall be 2mm greater than the nominal diameter of the bolts, unless otherwise specified, and shall be made a driving fit with the bolts. Holes shall be at right angles to the surface of the metal so that both head and nut will bear squarely against the metal. Bolts shall be driven accurately into the holes without damaging the thread.

The heads and nuts shall be drawn tight against the work with a suitable wrench. Bolts heads shall be tapped with a hammer while nuts are being tightened. All bolts shall have threads neatly and accurately finished. If for any reason the bolts twist before drawing tight the hole shall be carefully reamed and the bolts replaced with a new bolt of diameter to fit properly in the hole.

Nuts shall closely fit the bolts so that they can only just be turned by hand. Bolts shall show two clear threads through the nuts and shall have one washer under the nuts unless otherwise specified. The threaded portions of the bolts shall not bear upon the thickness of the metals connected.

### 13.12 Flame cutting

The flame cutting procedure shall be carried-out to the satisfaction of the Project Manager. The edges resulting from manual flame cutting shall be smoothed with special care. All re-entrant corners shall be filleted to a radius of at least 20mm. The cut lines shall not extend beyond the fillet and all cuttings shall follow closely the lines prescribed. No site flame cutting shall be done without the permission of the Project Manager.

### 13.13 Fitted Stiffeners

Stiffening angles or plates to brackets, flanges, etc., shall be accurately ground to fit the profile of the stiffened member.

### 13.14 Welding

Welding and welded work shall conform to the requirements of BS 5135: 1984 – "Specification for Metal Arc Welding of Carbon and Carbon Manganese Steels", unless otherwise specified.

Surfaces to be welded shall be smooth, uniform and free from fins, tears and other defects which would adversely affect the quality of the weld. Surfaces to be welded shall also be free from loose scale, slag, rust, grease or other material that will prevent proper welding. Mill scale that withstands vigorous wire brushing may remain.

Welds shall not be in excess of those specified by design requirements and shop drawings nor shall their location be changed without approval of the Project Manager.

The Contractor shall, before commencement of the fabrication, submit to the Project Manager for his approval a list of qualified welders who shall carry out welding operations and shall certify that such welders have been doing satisfactory welding or similar structural work for at least 6 months immediately prior to the subject work. When required by the Project Manager, the tests as laid down in the BS 4871 Specification shall be carried out. The test specimens shall be supplied and forwarded free of charge and all testing shall be paid for by the Contractor.

If, in the opinion of the Project Manager, the microscopic inspection is not sufficient to establish the quality of the fully penetrated butt-welds, the Contractor shall provide for such welds to be inspected by X-ray, ultrasonic or any other method as directed by the Project Manager. Any such inspections shall be paid for by the Contractor.

Any weld or member showing defective and sub-standard workmanship shall be rejected.

The parts to be joined by fillet welds shall be brought into as close contact as practicable and in no event shall be separated more than 2mm. If the separation is greater than 2mm the leg of the fillet weld shall be increased by the amount of separation.

The fit of joints which are not sealed by welds throughout their lengths shall be sufficiently close to exclude water after painting.

Abutting parts to be joined by butt welds shall be carefully aligned. Measurement of offset shall be based upon centre line of parts unless otherwise shown on the drawings. Unless otherwise described, all butt welds shall be fully penetrated butt welds made between fusion faces.

The general welding programme for shop and site welding including particulars of the preparation of fusions faces, the methods of making the welds and the types of electrodes shall be submitted to the Project Manager for his approval before commencement of the Work.

Members to be welded shall be brought into correct alignment and held firmly in position by bolts, clamps, struts or by tack-welds until welding has been completed. The use of jigs is preferable and adequate allowances shall be made for warpage and shrinkage. Tack-welds that are to be incorporated in the final welds shall be subject to the same quality requirements as the final welds. Such tack-welds shall be as small as practicable and shall be cleaned and fused thoroughly with the final weld.

Defective, cracked and broken tack-welds shall be removed before final welding.

Welding shall be carried out only under the direction and supervision of an experienced, competent and qualified supervisor. Unless otherwise agreed by the Project Manager, a record shall be kept to enable major welds to be identified with the welders responsible for the work.

Before welding over previously deposited metal the slag shall be removed and the weld and adjacent base metal shall be brushed clean. This requirement shall apply not only to successive layers but also to successive beads and to the crater area when welding is resumed after any interruption.

All but-welds, except when produced with the aid of backing-plates, shall have the root of the initial weld gouged, chipped or otherwise removed to sound metal before welding is started from the other

side. Butt-welds made with the use of backing-plates of the same materials as the base metal shall have the weld metal thoroughly fused with the backing.

Butt-welds shall be extended beyond the edges of the parts to be joined by means of extensions providing a similar joint preparation and having a width not less than 30mm.

Each weld pass shall be terminated at least 20mm from the edge of the parts to be joined. Extensions shall be removed upon completion and cooling of the welds at the ends of the weld shall be made smooth and flush with the edges of the abutting parts.

Neither the depth of fusion nor the total width of fusion at any point in a single weld or weld pass shall exceed the width of the face of the weld or pass.

The welding current, the arc voltage, the speed of travel shall be such that each pass shall have complete fusion to adjacent base metal and weld metal and that there will be no overlap of undue undercutting.

When the welding current, arc, voltage, speed of travel and type of electrode to be used are established by a test, they shall be kept within the following limits of:

- Welding current + or - 10%
- Arc Voltage + or - 7%
- Speed of travel + or - 10%

### 13.15 Correction in Welding

In lieu of the rejection of an entire piece of member containing welding which is unsatisfactory or indicates inferior workmanship, the Project Manager may permit the Contractor to apply the corrective measures, and such approval shall be entirely at the Project Manager's discretion.

### 13.16 Cambering

Each truss with a horizontal bottom soffite shall be erected with an upward camber of 5mm for each 3m of span unless specified otherwise. A camber diagram shall be submitted to the Project Manager showing the camber at each panel point for each truss taken from actual measurement while the truss is assembled.

### 13.17 Preparation of surfaces to receive paint

Surfaces of metal to be painted shall be thoroughly cleaned by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances. Any of the following methods may be employed:

- Solvent cleaning (Method A)
- Power tool cleaning (Method B)
- Blast Cleaning to BS 7079 (Method C)
- Hand tool cleaning (Method D)

The blast cleaned surfaces shall be examined for any traces of oil, grease or smudges deposited in the cleaning operation. If present, they shall be removed with white spirit or other solvent.

Cleaned metal surfaces shall be protected within the following periods:

- Method A and D – 6 hours
- Method B and C – 4 hours

A sample of steel panel measuring not less than 150 x 150 x 6mm, cleaned using any of the specified cleaning methods approved by the Project Manager, shall be adequately protected by sealed clean polythene wrapping and submitted to the Project Manager for his approval before any work is put in hand. The approved sample shall then be retained by the Project Manager's Inspectors for comparison with the prepared steelwork.

Paint shall not be applied in fog, mist or rain, or when the relative humidity exceeds 75%. Paint shall not be applied to wet or damp surfaces.

No thinner shall be added to the paint unless necessary for proper application.

The type of thinner shall comply with the paint specifications.

When the use of thinner is permissible, thinner shall be added to the paint during the mixing process. Painter shall not add thinner to paint after it has been thinned to the correct consistency.

All thinning shall only be done by the painting supervisor who shall be well acquainted with the paint specification and with the paint application.

Painted steel shall not be handled until the paint has dried-out except for necessary handling in turning for painting or stacking for drying. Paint which is damaged in handling, storing, loading and off-loading, transport and erection shall be scarped off to bare metal with sand paper and touched up with the same kind of paint as was previously applied to the steel, by at least 50mm all round the affected parts.

### 13.18 Assembly and erection

The Contractor shall be responsible for storage on site of all materials, and any necessary sorting, and for setting out the works, provision and casting in of all holding down bolts, bedding of base plates, erection, and field painting and any other work reasonably to be inferred from the Contract Document.

Handling, Stacking and Storing

Handling, stacking and storing shall be such that damage and undue stress will not be incurred by the steelwork. In this respect all steel beams, stanchions and joints shall be supported on the major axis of the section. Transporting and handling of sections on their side is therefore prohibited. Steelwork shall be stored clear of the ground soil to prevent contamination. All small items, including bolts, nuts and washers shall be stored in a lockable container or room.

All quantities of materials shall be checked against the schedules as soon as possible and any deficiency made up without delay.

Setting Out

Positioning and levelling of all steelwork plumbing of stanchions and the placing of every part of the structure with accuracy shall be in accordance with the approved drawings and to the satisfaction of the Project Manager.

Security during Erection

During erection the work shall be properly bolted or otherwise fastened and braced as may be necessary to ensure that all loads occurring or likely to occur during the erection period whether from equipment, plant or wind are adequately provided for and this provision shall continue until such times the floor, structural walls or other permanent bracings or fixings are in position.

Base-plate Supports

Prior to steel erection, all concrete foundations and supports for stanchion base-plates shall be checked for line and level, and holding-down bolts shall be properly located.

Cleaning of Steelwork

Base-plate surfaces and all steelwork shall be properly cleaned prior to erection. Surfaces to be brought into contact by HSFG bolts shall be clean and free of rust, paint or grease or any other substance likely to impair the efficiency of the connection.

Erection

Permanent connections shall not be completed until as much of the structure as will be stiffened thereby has been properly aligned.

Bedding of stanchion bases shall not be carried out until a sufficient number of bottom lengths of stanchions have been properly lined, levelled and plumbed and a sufficient number of floor beams are in position to establish the accuracy of the work. Temporary steel wedges shall be used to support the stanchion bases one inch clear of the concrete support, and grout of sufficient fluidity consisting of 1:2 cement-sand shall be poured under a suitable head to fill completely the previously cleaned and prepared inter-space. Measures shall be taken by proper air venting to facilitate the grouting operation.

Bolts shall be tightened as the work proceeds.

Where HSFG bolts are used, each bolt and nut shall be assembled with one washer under the head of the bolt and with another washer under the nut. Tapered washers shall be correctly fitted and all nuts tightened against a surface normal to the axis of the bolt. Driving of bolts is not permitted. Nuts and bolts shall be tightened on a staggered pattern and where there are more than four in any one point, they shall be tightened from the centre of the joint outwards. If, after final tightening, a HSFG nut or bolt is slacked off for any reason, the bolt, nut and washer shall be discarded and not used again. HSFG bolts may be used temporarily to facilitate assembly during erection provided they are not fully tightened to the specified torque condition. The use of drifts shall be restricted to work required to match fair holes and shall not be permitted to distort or enlarge them or damage the surfaces. Where holes are clearly out of alignment, the matter shall be reported to the Project Manager for his decision as to what remedial action to adopt. Where instructions are given to enlarge the hole this shall be carried out by reaming.

Cutting of members shall not be permitted except where instructed by the Structural Engineer/ Project Manager.

Site Welding

Site welding shall not normally be permitted but where allowed it shall be carried out by the metal-arc process. It shall be undertaken by skilled welders and shall conform to the requirements of recognised good practice. The Project Manager's Representative may require a welder to be tested in accordance with a suitable recognised standard, in which case only approved welders shall be allowed. Where applicable the welding of open-web steel joints to beams shall be carried out only to ensure a sufficient means of locating the joints in position to prevent subsequent movement. Welding of bridging rods shall be sufficient to prevent lateral displacement and buckling during the concreting operations.

### 13.19 Zed purlins and Zed Rails

Where any row of zed purlins are provided with diagonal tie bars, the purlins between which the tie bars are located together with the sag rods shall be erected first, ensuring that good level line is achieved. Remaining purlins and sag bars shall then be erected, and adjusted to the correct alignment from the previously aligned purlins.

Where any row of zed purlins are provided with diagonal tie bars, the rails incorporating the tie bar and rail support angle(s) shall be erected first, ensuring that a good level line is achieved. Remaining rails and rail supports shall then be erected and adjusted to the correct alignment from the previously aligned rails.

Pressed or cold rolled steel purlins and girts shall be to the sizes indicated on the drawings and shall be formed from approved steel strip with a minimum yield strength of 185N/mm². The sections shall be manufactured straight and free from twist, the tolerance away from straightness shall not be greater than 2mm for every 1.50m in length along any folded edge.

### 13.20 Ladders

The sides of the ladders shall be 62 x 10 mm mild steel flats set 400 mm apart and the ends of the sides shall be bent and cranked at suitable angles for taking off from the walls and flooring. The sides shall be drilled to receive the rungs spaced at 250 mm intervals. The rungs shall be 20 mm dia mild steel bars and shall be fixed to the sides by offering them into the holes and fixing with a 4 mm fillet weld which shall be taken all round the perimeters of the bars.

The stays for the ladders shall be 25 x 10 mm mild steel flats built at least 100 mm into the concrete of the supporting structure. The built-in ends of the stays shall be split and bent to give a good hold in the concrete. The ladder shall be fixed to stays with 10 mm bolts. The stays shall be not more than 2 metres apart vertically.

All ladders rising 2500 mm or more shall be fitted with safety hoops. The hoops shall have a diameter of 760 mm and be of 50 x 8 mm flats at no more than 900 mm centres, fixed to the stringers and with three vertical straps 50 x 8 mm flats extending from the top to the bottom hoop.

The ladders and the stays shall be galvanised in accordance with Cl. 1006 after manufacture. After erection ladders shall be painted with 2 coats of approved bituminous aluminium paint.

### 13.21 Handrailing

Hand railing shall comprise the following items as shown on the drawings:-

(a) Stanchions to hold handrails, at a maximum of 2 m intervals.

(b) Handrails at 0.5 m and 1.0 m above floor level.

(c) Face plates for building into concrete.

Stanchions shall be fabricated from galvanised steel hollow box sections, or from galvanised iron water pipe, or otherwise as shown on the drawings. The ends of the stanchions shall be sealed against the ingress of moisture by steel plates welded on. Hollow box sections or black iron water pipe shall be used for handrailing or as shown otherwise on the drawings. The minimum wall thickness of the sections used for stanchions and rails shall be 3 mm and the nominal bore shall not be less than 25 mm. The stanchions shall be flanged for bolting to concrete or steelwork.

Hoops shall be welded on where required for fixing guard chain.

Hand railing shall be prefabricated for site assembly without welding.

After erection hand railing shall be painted with two coats of approved bituminous aluminium paint.

### 13.22 Guardrails

Guardrail shall be 750 mm in height with a single top rail. In all other respects it shall comply with the specification for handrailing.

### 13.23 Chains

Chains across openings in handrails at tops of ladders shall be galvanised mild steel having 3 SWG x 3 links per 100 mm and shall be supplied complete with 'S' hooks and split rings.

### 13.24 Access Covers

Access covers and frames shall be fabricated from standard steel sections and chequer plate as shown on the drawings, to the dimensions shown on the drawings. They shall be weatherproof (prevent the ingress of water) when closed, and shall in all respects be strong and durable.

The minimum thickness of all materials shall be 3 mm.

The covers shall be lockable in accordance with details shown on the drawings.

The covers and frames shall be galvanised.

### 13.25 Bridge Bearings

Bridge bearings shall be of laminated rubber with dimensions 229 mm x 152 mm x 56 mm as manufactured by CCL Systems Ltd, CABCO House, Ewell Road, Surbiton, Surrey, England or similar. Each bearing shall be enclosed in a keeper box formed from mild steel flats as shown on the Drawings.

### 13.26 Staircases

Staircases shall be suitable for a superimposed load of 5 kN/m² calculated on the plan area of the stair.

Open mesh type flooring shall be used for the treads and on the landings, and it shall comply with the clause on open mesh walkways.

Stairs and landings shall be guarded on each side with a continuous handrail which shall be between 840 mm and 1000 mm in height measured from the tread nosings, and 1000 mm high on landings.

### 13.27 Open Mesh Walkways and Covers

Open mesh type walkways, platforms and covers shall be of aluminium or galvanised steel, suitable for a superimposed load of not less than 5 kN/m².

The walkways, platforms and covers shall include all necessary supports not detailed on the drawings.

Open mesh panels shall be trimmed with full depth nosing bar along all edges and bolted to each other when in place to help ensure a firm walkway. Panels shall be cut in such a way and fixed as to provide continuity of pattern.

Covers shall incorporate a hinged and lockable open mesh access panel with a 750 x 750 mm clear opening, strong, durable hinges and heavy duty non-corrodible padlock. Openings for valve keys shall be just sufficient in size for the valve key and shall incorporate a hinged cover only.

All panels shall be securely bolted to the supporting structure. Where the supporting structure is concrete, galvanised mild steel angle curbs shall be provided and securely grouted into rebates left in the concrete such that the tops of the panels are flush with the top of the concrete.

Walkways shall be guarded by handrailing where indicated on the drawings.

Where chequer plate flooring covers are to be provided they shall be of galvanised mild steel or aluminium manufacture. All galvanised mild steel chequer plate shall be cut and finished complete before galvanising; cutting of chequer plate following galvanising shall not be acceptable.

All flooring shall be designed to take uniformly distributed load as shown on the drawings. The Contractor shall include for all necessary supporting steelwork and edgings to support.

The plating and flooring shall be fitted neatly in position. The plate shall be adequately secured to the steelwork by means of electro-galvanised countersunk fixing screws to prevent movement and vibration. All curbing shall be provided and installed by the Contractor. The upper surfaces of the plating and curbing shall finish flush with the upper surface of the finished floor. Framing for aluminium plating shall be cadmium plated or similarly protected.

### 13.28 Measurement

The weight of steel to be paid for shall be the weight of steel in the completed and accepted structure.

If the Contractor chooses to substitute, with the approval of the Project Manager an alternative steel section to that specified in the Contract Drawings then the resulting increases in weight over and above that indicated in the Contract Drawings shall be paid for by the Contractor.

For the purpose of measurement for payment, steel plates, bolts (including anchor bolts), nuts, weld metal, and other similar items shall be considered as structural steel. Such items to be considered as structural steelwork shall be decided by the Project Manager whose decision shall be final.

Unless otherwise specified the weight of steel paid for shall be computed and based upon a material density of 7850 (seven thousand eight hundred and fifty) kilogrammes per cubic metre.

The weight of steel shapes and plates will be computed on the basis of their nominal weights and dimensions as shown on the approved shop drawings, deducting for copes, cuts and open holes, exclusive of bolt holes.

The weight of erection bolts other than those specified in the Contract Drawings, shop field paint, galvanising, and temporary supporting members shall be excluded from payment.

The weight of shop and fillet welds shall be assumed as follows:-

| Size of weld | Kilogrammes per meter |
|---|---|
| 5mm | 0.252 |
| 6mm | 0.298 |
| 8mm | 0.372 |
| 9.5mm | 0.521 |

The weight of other welds shall be computed on the basis of the theoretical volume from dimensions of the welds, with an addition of 50 per cent of the weight as an allowance for overrun.

The quantities of other contract items which enter into the completed and accepted structure shall be measured for payment in the manner prescribed by the Project Manager.

**13.29 Holding down bolts**

Holding down bolts shall be set in sleeves of steel tubes or similar approved and provided with steel washer plate cast in the concrete and standard nut and washer.

**13.30 Special prime painting**

All steelwork where indicated on the drawings shall be shop primed with one coat Epoxy Coal Tar Paint which dries by chemical curing. The paint shall be applied in accordance with the manufacturer's instructions.

**13.31 Specification for Roof Sheeting and vertical Cladding**

Roof sheeting or vertical cladding will be as specified in the Bills of Quantities.

**13.32 Translucent Sheeting to Roof and Vertical Cladding.**

Translucent sheeting shall be "Fibrelite" as manufactured by Specialised Mouldings Limited or Steel Structures Limited or other equal and approved and moulded using the open cast method to match the IT4 or IT5 profile and of a thickness of 1.5mm.

The translucent sheets must be accompanied with a guarantee of a minimum of 7 years lifespan. The sheets will be required to have undergone an ultra violet (U.V) treatment to the approval of the Project Manager. Samples of the translucent sheets for use on the works shall be submitted for the approval of the Project Manager before the works commence.

### 13.33 Flushing and Roofing Accessories

All flushing and roofing/cladding accessories shall be as described in the Bills of Quantities, bent and curved to the required shapes as shown on the drawings and shall be fixed to the steel "Z" rail purlins (and as described in the drawings and Bills of Quantities) with galvanized screws or hooks bolts as previously stated.

All galvanized Steel sheets to be wire brushed to remove any loose scale, dirt or grease, thoroughly cleaned with mordant solution, primed with one coat of zinc chromate and painted with two coats of gloss enamel paint.

### 13.34 PVC Rainwater Pipes

PVC rainwater pipes and fittings are to comply with BS 4576 with solvent welded or rubber ring seal joints.

Pipes are to be cast into concrete or to be fixed to the structure with PVC holderbats built-in or plugged and screwed at maximum 2 metre centres.

Bends, swan necks, discharge chutes and fittings generally are to be fixed where necessary to facilitate the flow of water.

Rainwater outlets shall be PVC suitable for the roof finish in which they occur with domical PVC grating.

### 13.35 Joint Fillers and Sealing Compound

Joint fillers set between the sheet flashings and blockwork or concrete faces shall be 'Flexcell' or other equal and approved.

Joint sealers around metal window frames between flashings and/or metal sheets and floor 'Flexcell' fillers shall be expandite sealastic oil based mastic or similar approved and applied strictly in accordance with the manufacturer's printed instructions.

## METALWORK

### MATERIALS

### 14.1 Generally

All materials shall be the best of their respective kinds free from defects and all work is to be carried out in the most workmanlike manner and strictly as directed by the Project Manager. The materials in all stages of transportation, handling and stacking shall be kept clean and prevented from injury by breaking, bending or distortion and weather action.

### 14.2 Mild steel

Mild steel shall comply with BS 7668-1994.

### 14.3 Hollow section tubing

Square and rectangular hollow section tubing shall be hot rolled mild steel in accordance with Grade 43C equivalent grade and comply with BS 7668: 1994.

### 14.4 Bolts, nuts and washers

These shall be fabricated from materials which comply with BS 7668 and each manufactured item shall comply with the appropriate BS.

### 14.5 Galvanized sheet steel

To be No. 24 S.W.G. of approved manufacture to BS EN 10143-1993 of best quality mild steel sheets cold rolled close annealed patent flattened and hot dip galvanized.

### 14.6 Aluminium

Aluminium shall be extruded sections with an anodised or powder coated finish, either natural or coloured, to give a 25 micron minimum depth to European norm EWAA.

The Contractor shall submit with each item or batch of items delivered, test certificates or such other documentary evidence as the Project Manager shall require that the depth of anodising or powder coated finish specified has been achieved.

### 14.7 Stainless steel

Stainless steel shall be Austenitic steel BS 6323 comparable to BS 1449 type 316 S 16.

### 14.8 Metal door frames

**Metal door frames are to be steel to comply with BS 1245 of profile to suit the wall thickness.**

Door frames are to be provided with the following:-

(a) Two priming coats of paint
(b) Fixing lugs for building into walls
(c) Three galvanized steel hinges per door
(d) Adjustable lock strike plate
(e) Two shock absorber buffers.

### 14.9 Steel windows

Steel windows shall be manufactured from sections conforming with BS 6510 of heavy duty sections of the metric W20 range of approved manufacture and design approved by the Project Manager.

After manufacture and before delivery to site steel windows are to be hot galvanized by dipping in a bath of molten zinc or painted with one coat primer.

**WORKMANSHIP**

### 14.10 Welding

All welding is to be in accordance with the requirements of BS 5135 and the electrodes shall comply with BS EN 499.

Fusion faces shall be free from irregularities which could interfere with the welding material. These faces shall also be free from any deleterious material such as rust, grease and paint.

All welds shall be of the specified finished sizes and the sequence of the welding shall be carried out in a manner that will give minimum distortion to the welded parts.

Edges of welding shall be prepared by planning or machine flame cutting.

During welding all parts will be maintained in their correct position.

Welds shall be carried out with each run closely following the one prior with sufficient time between to allow for removal of slag.

Each run of weld is to be inspected and the sub-contractor shall ensure that unsatisfactory welds are cut out or remade to the required standard.

The minimum size of fillet weld shall be 5 mm.

All completed welds shall have a regular and smooth surface. The weld material shall be solid with complete fusion throughout the weld and to the farecut metals.

Any defects shall be cut out or made good to approval.

External faces of butt welds to be ground smooth.

### 14.11 Painting

*All steel is to be wire brushed and any loose scale, dirt or grease shall be removed before any painting is commenced. One coat of red oxide primer Type A to BS 2523 shall be applied at the shop.*

Any damage to the priming paint shall be made good to the Project Manager's satisfaction.

### 14.12 Fixing of steel windows

Fixing of metal windows shall include for assembling and fixing, including screwing to sub-frames or cutting mortices for lugs in concrete or walling and running with cement mortar (1:4), bedding frames in similar mortar, pointing in mastic, bedding sills, transomes and mullions in mastic, making good finishings around both sides and fixing, oiling and adjusting all fittings and frames.

# ELECTRICAL WORKS SPECIFICATIONS

## MANUFACTURER'S NAME

Where manufacturer's names and catalogue references are given they are so given for guidance to quality and standard only. Alternative manufacturer of equal quality will be accepted at the discretion of the Project Manager.

## 1. SCOPE OF WORKS

A. The Contractor shall supply, deliver, install, erect, test and commission all materials and equipment and hand over in an acceptable condition as specified herein and as shown on the contract drawings.

B. The equipment, materials and fittings includes the following:

a. Supply and installation of terminal building LED lighting fixtures including cable.
b. Power supply and distribution system including main board and distribution boards
c. Trunking and cable trays
d. Fire alarm, lightning protection
e. Generator and associated works

## 2. GENERAL

A. This specification contains the minimum requirements for the supply, deliver, install, erect, test and commission all materials and equipment.

## 3. REFERENCES

A. The equipment and fittings shall be designed and tested in accordance with the latest standards to meet the technical requirements.

B. The works shall, moreover, be produced and executed strictly respecting the national and international regulations and standards in force, and more specifically: -

i. Kenya Standards - As published by Kenya Bureau of Standards
ii. **IEC 62031** LED Modules for General Lighting - Safety Specifications
iii. **IEC 62612** Self-ballasted LED lamps for general lighting services with supply voltages > 50 V - Performance Requirements
iv. **IEC/PAS 62722** LED luminaires for general lighting - Performance requirements (Publicly available specification)
v. **IEC/PAS 62717** LED modules for general lighting - Performance requirements (Publicly available specification)
vi. **IEC 62560** Self-ballasted LED-lamps for general lighting services by voltage > 50 V - Safety Specifications
vii. **CIE 84:1989** Measurement of luminous flux
viii. **IES LM-79-2008** Approved Method: Electrical and photometric measurements of solid-state lighting products
ix. **IES LM-80-2008** Approved Method: Measuring lumen maintenance of LED light sources
x. **IES TM-21-2011** Projecting Long Term Lumen Maintenance of LED Light Sources

xi. **IES LM-80** Method for Measuring Lumen Maintenance of LED Lamps, Light Engines, and Luminaires
xii. **IES TM-28** Prediction of Lumen Maintenance of LED Lamps and Luminaires
xiii. **AS/NZS 4417:2012** Regulatory compliance mark for electrical and electronic equipment
xiv. **AS/NZS CISPR 15:2011** Limits and methods of measurement of radio disturbance and characteristics of electrical lighting and similar equipment
xv. **AS/NZS 60598.1:2003** Luminaires Part 1: General requirements and tests
xvi. **AS/NZS 613471.1:2002** Lamp controlgear Part 1: General and safety requirements
xvii. **AS/NZS 5110:2011** Recessed luminaire barriers
xviii. **AS/NZS 3000:2007** Electrical installations
xix. **UL 8750** Standard for LED equipment for use in lighting products
xx. **UL 1993** Self-ballasted lamps and lamp adapters
xxi. IEC 60038 IEC Standard voltages
xxii. IEC 60051 Direct acting indicating analogue electrical measuring instruments and their
xxiii. IEC 60059 Standard current ratings
xxiv. IEC 60269 Low voltage fuses
xxv. IEC 60529 Degrees of protection provided by enclosures (IP Code)
xxvi. IEC 60947-1 Low Voltage Switchgear and Control gear – Part 1 : General rules
xxvii. IEC 60947-2 Low Voltage Switchgear and Control gear – Part 2 : Circuit Breakers
xxviii. IEC 60947-3 Low Voltage Switchgear and Control gear – Part 3 : Switches, disconnectors, switch-disconnectors and fuse-combination units
xxix. IEC 60947-4-1 Low Voltage Switchgear and Control gear – Part 4-1 : Contactors and

## 4. SUBMITTALS

A. Implementation plan after notice to commence
B. Product data sheets and equipment ratings
C. Installation, Operation and Maintenance manuals
D. Final as-built drawings

## 5. DELIVERY, STORAGE AND HANDLING

A. Fixtures and equipment shall be handled and stored in accordance with manufacturer's instructions.

## 6. PRODUCTS

### 6.1. Manufacturing

A. All equipment offered shall be the product of recognized and experienced manufacturers and shall be of basic design and size similar to such that has been in successful continuous operation for at least ten years preferably under similar climatic conditions. Proven plant reliability and high availability are of prime importance and the attention of the Bidder is drawn to these particular requirements.

B. The manufacturer's identity and places of manufacture, testing and inspection before shipment for the various portions of the works shall be specified in the technical proposal and shall not be departed from without the agreement of the Employer

C. As soon as practicable after entering into the Contract, the Contractor shall, having obtained the Engineer 's consent in accordance with the Conditions of Contract, enter into the Sub-contracts he considers necessary for the satisfactory completion of the Contract Works.

D. All Sub-contractors and Sub-suppliers of components and materials shall be subject to the approval of the Engineer. Information shall be given on each Sub-order sufficient to identify the material or equipment to which the sub-order relates, stating that the material is subject to inspection by the Employer before dispatch.

E. If the Employer at any stage in the design and production period finds out that the manufacturer does not fulfill the requirements in the specifications and it is obvious that the required quality cannot be achieved by corrective measure he can request the contract to be suspended and the works to be produced elsewhere without extra cost for the Employer.

## 6.2. Operating Conditions

A. The equipment supplied and all associated components shall be suitable for operation in ambient conditions of 5°C to 40°C without overheating and up to 80% relative humidity in an unheated ventilated building or shed.

B. The equipment and all components shall be suitable for operation at an altitude of 1,131 m (3,711 ft.) above mean sea level.

## 6.3. MOUNTING HEIGHTS

The approximate position of main switchgear, control equipment distribution boards, fittings and accessories shall be as indicated on the Drawings. Actual positions shall be determined on site by the Engineer.

Unless otherwise stated on the relevant drawings or directed by the Engineer the following mounting heights of all accessories above finished floor level shall be adhered to:-

Lighting Switches 1400 mm to centre

Socket Outlet and Spur 300 mm to centre (or 150 mm above work top level to centre)

Distribution Boards 1800 mm to lower edges.

All groups of accessories shall be in line either vertically or horizontally or as specified.

## 6.4. LUMINAIRES/FITTINGS

All Luminaires shall be of the manufacture, size and type specified and shall comply in all respects to BS 4533 "Electric Luminaires".

The Electrical Contractor shall supply and install all luminaires including lamps, lampholders, control gear, capacitors, glassware, diffusers or other attachments, heat resistant internal cables, fuses and terminals and all necessary suspension gear. In case where Luminaires are supplied by the client the Contractor shall deliver to site store, install, commission and set to work.

Unless otherwise stated, Luminaires shall be suitable for Class 1 normal indoor environments, giving

a degree of protection against ingress of moisture or dust.

All Luminaires shall be assembled and installed in accordance with the respective manufacturer's instructions/recommendations, in the position and mounting heights specified.

Luminaires shall not be installed under dirty and hazardous site conditions, and any damage or deterioration to luminaires installed under these conditions shall be made good by the electrical Sub-Contractor.

The Luminaires shall be cleaned free of dust and dirt after completion of the installation. Where dirt, dust, corrosion or other conditions cause imperfections in the luminaires, they shall be replaced.

Luminaires, diffusers, attachments or glassware etc., shall be properly stored to final erection, in such a manner as to avoid damage of any kind.

Luminaires fixings shall generally be suitable for direct connection to conduit boxes or as otherwise specified. Luminaires not provided with suitable BESA box shall be modified as necessary.

Where a flexible cord supports, or partly supports, a luminaire the maximum mass supported by the cord shall not exceed the values set out in IEE Regulations 523-32.

The minimum cross-section area flexible core to the employed shall be 0.75mm2.

Specified attention shall be given to Chapter 52 of the IEE Regulations, particularly Regulation 521-5 and 521-6, Appendices 9 and 10.

Pendant tungsten luminaires shall be fitted with heat resistant flexible cord complying with BS 6500, capable of continuous operation with a conductor temperature of 150 degrees C. The cable shall be of the circular multicore type, finished white, if not otherwise specified.

Ceiling mounted tungsten luminaires, spotlights and other luminaires of the category 'hot' luminaires shall be wired internally with cable suitable for continuous operation at 185 degree C. Where cable tails are provided they shall be of the heat resistant type capable of operation at 185 degree C.

Exterior luminaires, fixed to the walls of buildings etc., shall be wired such that final circuit wiring terminates within the luminaire. All final circuit cables so installed shall be provided with heat resistant sleaves from the connection point within the luminaire for a distance of 300 mm.

All flourescent and other discharge luminaires shall be provided with an integral fused connector block. The rating of the fuse shall be in accordance with the manufacturer's instructions to protect the internal wiring of the luminaire and to provide discrimination between final circuit protection and luminaire protection.

All recessed and semi-recessed luminaires in ceilings shall be connected by three core 0.75 mm2 high temperature flexible cord from the terminals of the luminaires to a plug-in ceiling rose fixed and connected to an accessible outlet box in the wiring system, within the suspended ceiling immediately above the luminaire. The ceiling rose shall be accessible via the opening provided in the ceiling.

The Electrical Sub-Contractor shall ensure that the methods of suspension for luminaires are electrically and mechanically sound.

Luminaires suspended by means of tubes shall be fitted to ball joints allowing a swing of at least 20

degrees all round. Reliable earthing between the fixed and moving parts shall be provided by means of a flexible braided copper tape.

Fluorescent luminaires shall be provided with a minimum of two fixings, except in the case of recessed modular luminaires or surface-mounted luminaires exceeding 300 mm in width, where four number fixings (one from each corner) shall be provided by means of conduit drops or threaded rods.

Normally visible luminaires support shall be conduit. All fluorescent luminaires shall be solidly mounted with all assembly nuts, bolts and accessories made tight to prevent vibrations and noise. Anti-vibration packing shall be fitted where necessary. luminaires mounted direct to trunking shall be fixed by means of the manufacturer's recommended fixing assemblies.

Unless stated otherwise, all luminaire supports shall be fixed to the building primary structure. Luminaires shall not be supported from suspended ceiling unless otherwise specified. The Electrical Sub-Contractor shall be responsible for mounting and fixing arrangements.

Break joint rings of approved colour shall be provided for all suspended luminaires and fluorescent battery luminaires where the batten is of insufficient width to cover completely the conduit box and its associated clearance hole in the ceiling.

The metalwork of all luminaires shall be effectively bonded to the earthing system in accordance with Chapter 54 of the IEE Regulations.

Care shall be taken to ensure that the internal wiring of luminaires and the cable of any fixed wiring shall not be in contact with high temperature areas in luminaires.

Lighting track shall be of the type, size, finish, number of circuits and manufacture specified and shall comply with the requirements of the relevant section of BS. 4533. The positions of luminaires as shown on the Drawings are approximate only and exact position shall be determined after reference to the Engineering supervisor.

CEILING ROSES

Surface mounted ceiling roses shall be of all insulated, high impact moulded plastic construction complying with BS. 67 and shall be suitable for direct attachment to conduit outlet boxes. Recessed or semi-recessed ceiling roses shall be manufactured from porcelain. Break joint rings shall be provided when used on flush conduit outlet boxes.

Ceiling roses shall not be connected to fixed wiring in such a manner that one of the terminals remains 'live' when the associated switch is in the 'off' position, unless that terminal is inaccessible to touch when the ceiling rose cover is removed, e.g for replacement flexible cord.

Terminals shall be provided for switched live, neutral and protective conductors. Loop-in facilities shall also be provided.

## 6.5. RECESSED 600X600 LED LIGHT FITTING

Suitable for recessed mounting and able to retrofit the existing luminaires.

A light weight recessed luminaire with LED light source. 4000K colour temperature, CRI >80 and a lifetime of 50,000 hours @ L90 Ta 25°C including high efficiency up to 119lm/W, UGR<19.

## 6.6. SURFACE MOUNTED WEATHER PROOF LED LIGHT FITTING

**Suitable for surface mounting.**

MATERIALS/FINISH
Canopy: aluminium
Diffuser: polycarbonate with linear prisms
Gasket: silicone sponge
Toggles: stainless steel
Quick fix bracket: stainless steel

Compact high performance LED IP66, dust and moisture proof luminaire with fully recyclable aluminium body, polycarbonate diffusers and stainless steel toggles,
LED light engine offering 4150 and 6150lm, Ra80, 4000K, long service life of 50000 hours.

## 6.7. RECESSED DOWN LIGHTS

**MATERIALS/FINISH**
Body: aluminium, painted white (RAL 9016)
Reflector: high grade anodised aluminium
Clips: quick-fix stainless steel with spring cover
Bezel: aluminium

Recessed down lights for suspended ceiling with LED lamps optimised for efficient, energy saving high output general lighting in retail and transportation applications; passive cooling thanks to innovative thermal design with recessed or integrated driver; dimming and controls option available; Colour rendering Ra > 80; colour temperature 4000K, 4 different beam shapes, rotationally symmetrical; Chromaticity tolerance (initial MacAdam): 3; exeptional long lifetime performance Ta25° up to 100.000h for luminous flux at L80 of initial value; mains voltage: 220-240V/ 50/60Hz; highly efficient aluminium reflector

As Thorn Chalice Pro Cat No. CHR2000XM4K

## 6.8. RECESSED LED DOWN LIGHTS

**MATERIALS/FINISH**
Housing/body: aluminium, powder coated white RAL 9016
Reflector: powder coated white RAL 9016

LED downlight incorporating thermally optimised, deep drawn, aluminium body with IP44 as standard. As Thorn Cetus LED Cat No. CU2000Z4K

## 6.9. LED OUTDOOR DOWN LIGHTS

**MATERIALS/FINISH**
Bodies: white polycarbonate
Diffusers: polycarbonate opal
Geartray: Pre-coated steel

Polycarbonate bulkhead white base, tool-less gear tray fixation. With unique opal diffuser.
As Thorn Leopard. Cat No. LER12ZOPW

## 6.10. DECORATIVE WALL MOUNTED LIGHTS

Cost-effective LED wall luminaires that distribute their light upwards and downwards on the wall. Crystal glass with a white interior enhances the high-precision housings made of cast aluminium and lends the luminaires their distinctive character. Various finishes, light outputs and dimensions let you coordinate the luminaires with the respective room and lighting situation. Metal housing available with a choice of 3 finishes · Crystal glass, inside white

On/off power supply unit · Colour rendering index (CRI) > 90 These are luminaires which will impress you through the choice of colour temperature, a minimum LED service life of 50 000 hours and 20 years' availability guarantee for the LED modules.

LED colour temperature: 3000 K – article number + K3 or 4000 K – article number + K4
The luminaire luminous flux and the luminaire connected wattage quoted in the table might change as a result of technical progress.

As BEGA Type 12282.1

## 6.11. DECORATIVE WALL MOUNTED LIGHTS

LED wall luminaires
Light emission on two sides
Compact LED wall luminaires with light emission in two directions.

Thick-walled brilliant crystal glass characterises the design of these luminaires.
Whether as single luminaires or lined up in rows: They illuminate and accentuate many situations in the room.
Various finishes, light outputs and dimensions let you coordinate the luminaires with the respective room and lighting situation.
Metal housing available with a choice of 3 finishes · Crystal g lass, inside white
Luminaires with on/off power supply unit or DALI controllable power supply unit
Colour rendering index (CRI) > 90
These are luminaires which will impress you through the choice of colour temperature, a minimum LED service life of 50 000 hours and 20 years' availability guarantee for the LED modules.
LED colour temperature: 3000 K – article number + K3 or 4000 K – article number + K4
The luminaire luminous flux and the luminaire connected wattage quoted in the table might change as a result of technical progress.

As Bega Type 50063.1

## 6.12. RECESSED DOWNLIGHT

Housing Material- Aluminum
Reflector material- Polycarbonate
Optic material- Polycarbonate
Optical cover/lens material -Polycarbonate
Fixation material -Stainless steel
Optical cover/lens finish Frosted

Initial luminous flux (system flux) 2000 lm

Luminous flux tolerance +/-10%
Initial LED luminaire efficacy 71 lm/W
Init. Corr. Color Temperature 3000 K
Init. Color Rendering Index >80
Ingress protection code IP44

As Philips Coreline slim downlight No. DN 135B LED 20S/ 830 PSD-E II WH

## 6.13. WALL MOUNTED UPLIGHT/DOWNLIGHT

**MATERIAL/FINISH**
Back-plate: die-cast aluminium painted anthracite (RAL7016)
Body: polycarbonate in anthracite colour (RAL 7016)
Diffuser: textured clear polycarbonate

IP65, IK10 vandal resistant wall mounting luminaire in anthracite
(RAL 7016) with less than 2.5%
ULOR. In polycarbonate body & cast aluminium back-plate. 1690/
2700 lumen output with fixed output or DALI dimmable control gear/ integral photo sensor/integral manual or Self/Addressable test 3 hour emergency lighting options. As Thorn Piazza II LED Cat No. PZLL2700HFXEC

## 6.14. WALL MOUNTED SPOT LIGHT FITTING

Housing Material- Aluminum
Reflector material -Glass
Optic material Glass
Optical cover/lens material Glass
Fixation material Steel
Mounting device Mounting bracket adjustable
Optical cover/lens shape Curved
Optical cover/lens finish Clear

Initial luminous flux (system flux) 3750 lm
Luminous flux tolerance +/-5%
Initial LED luminaire efficacy 75 lm/W
Init. Corr. Color Temperature 4000 K
Init. Color Rendering Index >70
Ingress protection code IP66

As Philips ProFlood LED No. BCP608 LED55/740 I EB GOBO GR10714 MSP

## 6.15. SUSPENDED EXIT SIGN FITTINGS

Luminaire housing made of white polycarbonate and transparent polycarbonate cover

Flexible emergency luminaire for various mounting possibilities that can be even extended with an adapter. Only 37mm housing depth for state of the art design.
Orderable as safety sign or safety luminaire. Manual, SelfTest, circuit monitoring or SET009 in combination with CPS (only central supply) version capability. As Thorn Voyager Style.

## 7. TECHNICAL SCHEDULE

The technical schedule shall be submitted by tenderers to facilitate and enable the Project Manager to evaluate the tenders, especially where the tenderer intends to supply or has based his tender sum on equipment which differs in manufacture, type or performance from the specifications indicated by the Project Manager.

Tenderer to submit product data sheets and fill technical schedule below.

Technical schedule of items to be supplied by Contractor.

| Item | Type | Make/Make | Country of Origin |
|---|---|---|---|
| 1. | Type F1 | | |
| 2. | Type F3 | | |
| 3. | Type F5 | | |
| 4. | Type F6 | | |
| 5. | Type F8 | | |
| 6. | Type F9 | | |
| 7. | Type F10 | | |
| 8. | Type F12 | | |
| 9. | Type F15 | | |
| 10. | Type F16 | | |
| 11. | Type F18 | | |
| 12. | Type F23 | | |
| 13. | Type F28 | | |
| 14. | | | |

## 8. FACTORY ACCEPTANCE TESTS AND INSPECTION

### 8.1. Factory Acceptance Tests

Factory acceptance tests (FAT) shall be carried out for all major components of the work including the LV switchgear and associated protection devices by 5 Representatives for a period of 5 days, to ascertain compliance.

The contractor/manufacturer shall prepare schedules of tests to be carried out during the FAT, which they will submit to the employer at least 7 days before inspection. The contractor shall arrange and give 2-week notice before the date of the FAT.

All costs for FAT shall be provided by the contractor

## 8.2. Inspection following Delivery

Site inspection shall be carried out on delivery to the site and before installation of the equipment.

## 9. GUARANTEES AND PARTICULARS

The Works shall comply with the technical guarantee data stated in the tender. The Contractor shall be responsible for any discrepancies, errors and omissions in the particulars and guarantees.

## 10. EQUIPMENT MANUFACTURING

All equipment offered shall be the product of recognized and experienced manufacturers and shall be of basic design and size similar to such that has been in successful continuous operation for at least ten years preferably under similar climatic conditions. Proven plant reliability and high availability are of prime importance and the attention of the Bidder is drawn to these particular requirements.

The manufacturer's identity and places of manufacture, testing and inspection before shipment for the various portions of the works shall be specified in the technical proposal and shall not be departed from without the agreement of the Employer.

As soon as practicable after entering into the Contract, the Contractor shall, having obtained the Engineer 's consent in accordance with the Conditions of Contract, enter into the Sub-contracts he considers necessary for the satisfactory completion of the Contract Works.

All Sub-contractors and Sub-suppliers of components and materials shall be subject to the approval of the Engineer. Information shall be given on each Sub-order sufficient to identify the material or equipment to which the sub-order relates, stating that the material is subject to inspection by the Employer before dispatch.

If the Employer at any stage in the design and production period finds out that the manufacturer does not fulfill the requirements in the specifications and it is obvious that the required quality cannot be achieved by corrective measure he can request the contract to be suspended and the works to be produced elsewhere without extra cost for the Employer.

All switchgear shall be from the same manufacturer.

## 11. OPERATION AND MAINTENANCE MANUALS

Equipment operation and maintenance manuals shall be provided with each assembly shipped and shall include instruction leaflets, instruction bulletins and renewal parts lists where applicable, for the complete assembly and each major component.

## 12. WORK ON LIVE SUBSTATIONS

The work shall be carried out on substations in operation and therefore the following factors are of paramount importance: (i) Minimisation of outage time and (ii) adaptation to operational constraints. All work must be planned with this in mind.

The Contractor must obey to all instructions and safety rules given by the Government and the Employer and must strictly follow all instructions from the Employer

All outages shall be discussed with the Engineer at least one week before the outage is required. No work shall start before the Engineer has authorized the work, established the required earthing and marked of the safe area. All switching on live parts shall only be done by the Employer.

In the cases where the circuits have to be taken out of operation the Contractor must be prepared to do the work during nights or at off-peak time. The Contractor and his personnel must respect the physical constraints as well as constraints for scheduling set by these circumstances. However, the Employer will co-operate in making the work conditions and the scheduling as efficient as possible for the Contractor and keep a responsible person with switching authority at site during all working hours (including night time).

If physical constraints make it necessary to replace cabinets needed for operation, the Contractor must as far as possible erect and connect the new cabinets temporarily adjacent to the one in operation. A quick disconnection and removal of the old cabinets can then be performed and the new cabinets pulled in with most of its cables already fitted. Location of new cabinets shall be approved by the Engineer and a proposal for such shall be given by the Contractor one month prior to erection.

## 13. TECHNICAL SPECIFICATION FOR LV SWITCHGEAR

### 13.1. Scope of Work

The LV switchboards shall be supplied and installed within the substation. The LV switchboards shall be indoor, industrial type switchboards and motor control center as per the drawings:

The equipment shall be suitable for operating indoors in a safe (non-hazardous) location for use in a pollution Degree 3 environment (IEC 61439-1, par. 7.1.3).

### 13.2. General Specifications and Compliance

This specification covers the requirements for indoor, low voltage, industrial type switchgear and motor control centre, comprising busbars and functional units, such as incoming-, bus section -, motor starter- and outgoing feeder units.

### 13.3. General Requirements and Arrangements

#### 13.3.1. Supply System and Short Circuit Level

The system characteristics shall be as specified on the requisition.

The prospective short circuit current (RMS and peak value) at the incoming terminals of the switchgear shall be as specified on the requisition.

The switchgear supplier shall submit, at quotation stage, a test report (design verification in accordance with 61439-2) from an independent authority to proof the capability to withstand the specified prospective short circuit fault current.

For determining the fault level of functional units, i.e. its wiring and components, the current limiting effect of protection devices may be taken in account. This paragraph may also be applicable for dropper bar systems, provided an internal fault between the main busbar system and the

protection devices in the connected functional units, is a remote possibility.

### 13.3.2. Construction

The switchgear shall be of a modular design, flush fronted, floor mounting and self-supporting. The complete system shall be designed to be front access.

The switchgear shall comply with form 4a according to IEC 61439-2, appendix AA.

The maximum height of the structure shall not exceed 2000 mm, excluding a possible separate foundation frame and / or ventilation cowl.

The general construction shall be sufficiently rigid to accept the weight of a man (nominally 100 kg.) on the top without harmful distortion.

The switchgear enclosure protection degree shall be IP31 according to IEC-60529.

The design of the switchgear shall permit the erection of extension cubicles at either end without isolating the switchgear until it is required to connect the busbars together and without the need for metal cutting equipment or drilling busbars.

The switchgear shall be designed for a diversity factor of 0,8 for vertical sections with two or more functional units. The switchgear supplier shall submit, at quotation stage, test reports to proof these factors, taking in account the temperature rise limits according to the IEC standards.

All withdrawable units shall be so designed, that disconnection of any terminated main- or Auxiliary wiring / cables is not necessary.

All structure dimensions shall be according to the DIN 41-488 standard.

### 13.3.3. Functional Units

Incoming- and bus section unit circuit breakers shall be of the withdrawable type.

Incoming- and bus section unit load break switches shall be of the fixed type.

Outgoing feeders up to 630 A shall be of the plug-in type. All higher rated units shall be of the fixed type.

### 13.3.4. Spare and Space Compartments

"Spare" compartments shall be fully equipped for the function and rating as specified.

"Space" compartments shall be suitable to be equipped / upgraded at a later date without de-energizing the switchgear or parts of it.

### 13.3.5. Components

Circuit breakers (ACBs) shall have a stored-energy closing and breaking mechanism. They shall be rated according to IEC 60947-2 category B. Circuit breakers shall have a mechanical ON / OFF indication on the front.

Current transformers shall be of the epoxy enclosed type and provided with a removable short circuit link. The accuracy shall be 1M5 (incomers and outgoing feeders), resp. 3M5 (motor starters) for measuring and 5P10 for protection purposes. The secondary side shall be 5 A for incomers and outgoing feeders.

Measuring devices shall be flush mounted and shall have an enclosure with a degree of protection of at least IP41. Meters used for incoming and outgoing units shall be 96 x 96 mm. Number and type of required meters shall be specified.

### 13.3.6. Arrangements

Unless otherwise specified, the manufacturer is free to arrange the items in the best engineered manner.

The functional (withdrawable) units are to be rated such, that they can be placed at any height.

## 13.4. Safety Requirements for Operation and Maintenance

### 13.4.1. Internal Arc Resistance

The switchgear shall be so designed, that the development of internal arcs, under normal operating conditions, is prevented as much as possible.

### 13.4.2. Internal Separation

The segregation between the horizontal main busbar compartment and any other compartment shall be IP2X minimum.

The segregation between a functional unit towards other functional units shall be IP2X minimum.

Horizontal segregations shall be so designed that falling of metal parts (e.g. nuts, bolts, etc.) from one compartment to another is prevented.

### 13.4.3. Accessibility

A mechanical interlock shall be provided on all "switching" enclosures to prevent the door being opened unless the component is in the "off" position.

With any door open or unit withdrawn it shall not be possible to insert an IP2X test finger (IEC 60529) on to live parts.

Shrouding is mandatory, there shall be no use of shutters to achieve the IP2X rating.

### 13.4.4. Mechanical Interlocks

The mechanism operating handles of all air circuit breakers, switches and fused-switches shall be suitable for padlocking in the "off" position only.

On withdrawable units, an interlock shall prevent the unit being withdrawn unless it (or the isolating

device) is in the "off" position. Also it shall not be possible to close it (or the isolating device) with the unit in a partly withdrawn position.

On the incoming feeders of switchgear, coupled by means of a bus coupler, key interlocks of the "Ronis" type shall be provided to allow closing of the appropriate breakers.

### 13.4.5. Main Busbar and Dropper Bar Systems

All current-carrying parts shall be of hard or medium hard drawn, high conductivity copper.

Main busbars, including neutral and earth, shall be located in the busbar compartment of the switchgear positioned in the rear to allow for a maximum distance between operator and busbars.

Busbars and dropper bars shall be fully rated to the fault levels as specified
Busbars shall be fully rated to the current carrying capacity as specified. Neutral bars shall be 100% of the current rating and dimension of the phase bars.

Busbar joints and tee-offs shall preferably be clamped connections.

For all electrical main connections the correct torque shall be applied for fixing bolts. The switchgear supplier shall indicate the applicable torques in the maintenance manual.

Main busbars shall be readily suitable for future extension at both sides.

Main busbars shall be of the same current ratings and dimensions throughout their lengths.

### 13.4.6. Incoming Units

Incoming units shall be provided with an independent manually operated air circuit breaker or load break switch as specified.

If air circuit breakers are used, they shall be of the draw-out type. They shall be provided with a direct working short circuit protection and time delayed overcurrent protection of the electronic type.

Each incoming unit shall be mounted in a separate compartment.

Each incoming unit shall be provided with a separate measuring compartment. The type and number of required meters shall be as specified in the requisition.

### 13.4.7. Bussection Units

Bussection units shall be provided with independent manually-operated fuse-switches or isolating switches as specified.

Each bussection unit shall be housed in a separate compartment.

### 13.4.8. Outgoing Feeder Units

Outgoing feeder units shall be fused combination switches with DIN fuses.
Measuring instruments shall be provided if specified.

The functional compartment of the outgoing units shall be no wider than 500mm excluding cable compartments.

### 13.4.9. Internal Wiring and Terminals

All internal wiring shall be suitable sized in accordance with the applicable standards and / or manufacturer's instructions for the used components, with a minimum of 1 sq. mm. Secondary wiring from current transformers shall be at least 2,5 sq. mm.

Auxiliary wiring is identified with markings in black letters / figures onto the insulation or by means of white clip-on code markers with black letters / figures. The marking shall be in accordance with the related wiring diagrams.

No more than one wire shall be connected to each terminal, unless the terminal is fit to connect to wires. Where common connections are required, terminal jumpers shall be used.

All internal wiring shall be connected to the same side of the terminal block; the other side shall only be used for external wiring.

Main cable terminals allowing the conductors to be connected without the use of cable lugs of any type is strongly preferred. They shall guarantee sufficient contact pressure without damaging the cable conductors.

Terminals for auxiliary wiring and cables shall be of the self-clamping type.

Terminals shall be identified in accordance with the related wiring diagram.

It shall be possible to safely carry out any work on the main- and auxiliary wiring of a unit, when isolated, with all other units "live".

### 13.4.10. Cable Entry and Termination

Switchgear shall have facilities for the entry of cables from either top or below on incoming feeders and top and / or bottom on outgoing units with a cable compartment.

Vertical sections with two or more functional units shall be provided with a separate vertical cable compartment to run the full height of the equipment. The width of this compartment shall be 250 mm. Facilities for fixing the cables shall be provided within this compartment.

It shall be possible to cable any outgoing unit in complete safety with all other outgoing units "live".

### 13.4.11. Earthing

The switchgear shall be provided with a main earth bar along the whole length, located in the busbar compartment. The minimum size shall be 25 x 10 mm.

A vertical earth bar shall be provided in each vertical section along the whole height of the equipment. The minimum size shall be 25 x 10 mm. It shall have provisions for termination of an earth conductor per specified cable.
The earth bars shall be copper and suitable sized to cope with the fault current level and fault

clearing time under the prospective short circuit conditions for a solidly earthed system.

To these earth bars shall be bonded the switchgear enclosures, i.e. all individual vertical sections, all fixed and withdrawable-type equipment when in service position and all metal cable sheets. When earth continuity of removable or withdrawable parts is arranged via metal support surfaces, the switchgear / MCC supplier shall provide type test certificates, indicating fulfillment of the requirements of effective conductivity and the precautions necessary to guarantee permanent good conductivity.

Doors mounted with voltage carrying equipment shall be earthed by means of a suitable sized flexible copper conductor.

### 13.4.12. Labeling

Labels shall be "resopal" or similar, with black letters on a white background. They shall be fixed to the switchgear by means of proven durable self-threading screws or rivets.

Per compartment one label, indicating the compartment number (A, B, C, etc.) and the connected equipment and/or equipment number, shall be provided. Minimum label dimension 74 x 26 mm. Letter height 4 mm.

Each removable or withdrawable unit shall contain the same equipment as indicated on the front door.

Safety shutters for ACB's shall be clearly labeled with 25 mm high white letters on a red background, as follows:

a. Busbar shutters marked "BUS-BAR"
b. Incoming circuit shutters marked "INCOMING SUPPLY"

14.5. Removable safety shrouds shall be fitted with "DANGER" warning labels.

### 13.4.13. Painting

Internal and rear panel components are manufactured from Sendzimir zinc coated sheet steel.

Front panels, side panels and doors are finished with an epoxy coating, which is electrostatically applied, after degreasing and phosphating, to a minimum finished thickness of 50microns.

Standard Color - Light Grey (Semi Gloss) to RAL7035.

### 13.4.14. Spares and Maintenance Requirements

The manufacturer shall state and price separately in his quotation all necessary special tools and equipment required for proper maintenance and testing at site.

The manufacturer shall submit together with the switchgear an erection, operating and maintenance manual.

### 13.4.15. Inspection and Testing

The purchaser will specify whether for each switchgear a factory acceptance test, witnessed by purchaser or his representative, will be required.

Factory acceptance tests shall be carried out on the complete assembled switchgear, as follows:

a. visual inspection to verify whether the composition of the assembly is in accordance with the approved order documents
b. Measurement of the insulating resistance
c. High-voltage test in accordance with IEC 61439, item 11.9
d. Check of electrically operated switchgear
e. Functional test of mechanical interlocks
f. Check on interchangeability of equal components

Complete records of the above inspection and tests shall be compiled into one inspection document by the manufacturer. A copy shall be sent to the purchaser.

### 13.4.16. Off-Loading and Site Storage

The equipment shall not be dispatched from the manufacturer's work until a date and time of arrival at the site is agreed with the purchaser. This is to ensure that proper arrangements are made for receipt and off-loading.

The manufacturer shall indicate in his quotation whether facilities for off-loading should be arranged by purchaser.

The manufacturer shall indicate in his quotation the minimum conditions for temporary storage at site.

### 13.4.17. Erection and Commissioning

The purchaser will specify whether erection, supervision of erection, or no erection is required from the manufacturer.

The term "erection" shall be interpreted as "fixing and leveling on prepared foundations and the bolting together of sections, busbars, and other loose items, to form a complete unit".

The purchaser will specify whether commissioning is required from the manufacturer.

## 13.5. Specification Sheet

| **Installation environment:** | |
|---|---|
| Location | Indoor |
| Pollution degree | 3 |
| Degree of protection | IP31 |
| **Supply details:** | |
| Earthing system | TNS |
| External connection | L1, L2, L3, N, PE |
| Rated Voltage (Un): | 415 V |
| Rated frequency (fn) | 50 Hz |

| | |
|---|---|
| Rated short-term withstand current (Icw): | 50 kA |
| Assembly and erection: | |
| Incoming cables: | Top |
| Outgoing cables | Top |
| Type of access | Front and Rear |
| Height | 1800 mm |
| Internal form of separation | At least Form 4a Type 1 |
| **Main busbar system:** | |
| Rated current (In): | As per schedule of LV Protection and Switching Devices below |
| Rated short time withstand current (Icw): | 50 kA / 1s |
| Rated peak withstand current (Ipk): | 110 kA |
| Number of bars | L1, L2, L3, N, PE |
| | Neutral rating: N = 100 % |
| **Vertical busbar system:** | |
| Rated current (In): | 400A |
| Rated short time withstand current (Icw) | 50 kA /1s |
| Number of bars | L1, L2, L3, N |
| Neutral rating: | N = 100 % |
| **Incoming feeders and buscouplers** | |
| Circuit breaker | Air circuit breaker |
| Poles | 4-pole |
| Rated current (In): | As per schedule of LV Protection and Switching Devices below |
| Rated ultimate short circuit breaking capacity (Icu): | 50 kA |
| **Outgoing feeder units** | |
| Protection | Moulded Case Circuit Breaker |
| Poles | 4-pole |
| Rated current (In): | As per schedule of LV Protection and Switching Devices below |
| Design | Plug-in design |
| Safety | Switch interlocked with the door which can only be opened in OFF-position of the switch<br>Padlock facility on the rotary handle |
| Degree of protection | At least IP2X in the test and isolation position |
| | |

## 14. TESTING AND COMMISSIONING

Testing at site shall be carried out by experienced testing engineers approved by the Employer. Functional tests shall be inherent in all test procedures. The Contractor shall record the test results in an approved test form in such a manner that the test reports can be used as the basis for future maintenance tests. Test methods and equipment shall be noted on the test sheets. The test protocols shall be submitted to the Employer in advance for approval

A complete test report in 4 sets shall be handed over to the Engineer not later than one month after the Plant being commissioned. The test engineers shall at site keep a complete record of correction made during testing and one set of corrected drawings shall be kept at site after commissioning and

one set handed over to the Engineer.

Commissioning shall be carried out by the Contractor in the presence of the Employer

Once the pre-commissioning tests are complete, the testing engineer shall submit all the preliminary tests reports for review prior to the energising of the equipment. The tests shall be accompanied with a complete procedure for energising and loading of the equipment. The procedure shall include; a detailed commissioning schedule showing the sequence to follow step by step in all connections, including control of phase sequence and other pertinent factors. Switching of energized components will be performed by the Employer.

## 15. TRAINING

### 15.1. Factory Training

The Contractor shall allow for formal training in the manufacturers' factory done to one (1) Kenya Airports Authority nominated maintenance and operational staff. This training shall be organized and done on near completion of manufacture of the equipment and shall be for a minimum of one day. More training to the maintenance staff shall be undertaken during installation.

The training program will include but not be limited to the operation, maintenance and diagnostics of the installed equipment and specifically on the following:

a. Identify switchgear and its ratings
b. Rack breakers into or out of connected position safely
c. Perform rack out/lock out/tag out procedure
d. Mechanical and electrical switchgear operation
e. Locate and replace close and trip coils and motors
f. Test insulation and vacuum integrity
g. LV switchgear maintenance and repair
h. Interpretation of schematics and wiring diagrams

### 15.2. On-Site Training

Operational and maintenance training to fifteen (15) technical staff on site shall be undertaken during installation and before the commissioning of the equipment.

# PART III – CONDITIONS OF CONTRACT AND CONTRACT FORMS

## SECTION VIII - GENERAL CONDITIONS OF CONTRACT

### 1. GENERAL CONDITIONS

### 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 there after 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.

**"Dayworks"** 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 Engineer 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 maybe) 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 Clause19 [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 Engineer 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 Engineer 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**

131 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 there quest was issued.

132 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 Engineer or the other Party, as the case may be.

**1.4 Law and Language**

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

142 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

h) The Drawings,
i) The Bills of Quantities and
j) The Schedules and any other documents forming part of the Contract.

If an ambiguity or discrepancy is found in the documents, the Engineer 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 as sign 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**

18.1 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.

18.2 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 Engineer two copies of each of the Contractor's Documents.

18.3 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.

18.4 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**

19.1 The Contractor shall give notice to the Engineer 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.

19.2 If the Contractor suffers delay and/or incurs Cost as a result of a failure of the Engineer 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 Engineer 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.

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

1.9.4 However, if and to the extent that the Engineer 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 in eligibility pursuant to the Procuring Entity's prevailing sanctions procedures).

## 2. THE PROCURING ENTITY

**Right of Access to the Site**

2.1 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.

2.2 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].

2.3 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 Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
i. 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
ii. payment of any such Cost-plus profit, which shall be included in the Contract Price.

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

2.5 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.

**1.2 Permits, Licenses or Approvals**

1.2.1 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.

**1.3 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].

**1.4 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 **Engineer Duties and Authority**

3.2 The Procuring Entity shall appoint the Engineer who shall carry out the duties as signed to him in the Contract. The Engineer staff shall include suitably qualified Assistants and other professionals who are competent to carry out these duties. The Engineer Name and Address shall be provided in the **Special Conditions of Contract.**

3.3 The Engineer shall have no authority to amend the Contract.

3.4 The Engineer may exercise the authority attributable to the Engineer as specified in or necessarily to be implied from the Contract. If the Engineer is required to obtain the approval of the Procuring Entity before exercising a specified authority, the requirements shall be as stated in the S**pecial Conditions of Contract**. The Procuring Entity shall promptly inform the Contractor of any change to the authority attributed to the Engineer.

3.5 However, whenever the Engineer 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 Engineer to provide evidence of such approval before complying with the instruction.

3.6 Except as otherwise stated in these Conditions:

a) Whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Engineer shall be deemed to act for the Procuring Entity;

b) the Engineer 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 Engineer (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 Engineer in response to a Contractor's request shall be notified in writing to the Contractor within 14 days of receipt.

3.7 The following provisions shall apply:

The Engineer 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-Clause13.4: Specifying the amount payable in each of the applicable three currencies.

3.7 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 Engineer 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.

**3.8 Delegation by the Engineer**

4.4.1 The Engineer 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 both Parties have received copies. However, unless otherwise agreed by both Parties, the Engineer shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations].

4.4.1 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:

3.8..1 Any failure to disapprove any work, Plant or Materials shall not constitute approval, and shall therefore not prejudice the right of the Engineer to reject the work, Plant or Materials;

3.8..2 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.

### 3.9 Instructions of the Engineer

4.4.1 The Engineer may issue to the Contractor (at anytime) 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.

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

1. Gives an oral instruction,
2. receives a written confirmation of the instruction, from (or on behalf of) the Contractor, within two working days after giving the instruction, and
3. 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 Engineer or delegated assistant (as the case may be).

**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.

### 3.10 Determinations

4.4.1 Whenever these Conditions provide that the Engineer shall proceed in accordance with this Sub-Clause3.5 to agree or determine any matter, the Engineer shall consult with each Party in an endeavor to reach agreement. If agreement is not achieved, the Engineer shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.

3.5.1 The Engineer 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 Engineer 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 designor 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:

i. The Contractor shall submit to the Engineer the Contractor's Documents for this part in accordance with the procedures specified in the Contract;

ii. 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 Engineer to add to the Drawings for co-ordination of each Party's designs;

iii. 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

iv. Prior to the commencement of the Tests on Completion, the Contractor shall submit to the Engineer 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.

**4.2 Performance Security**

4.2.1 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.

4.2.2 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.

4.2.3 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.

4.2.4 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.

4.2.5 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.

4.2.6 The Procuring Entity shall return the Performance Security to the Contractor within 14 days after receiving a copy of the Taking-Over Certificate.

4.2.7 Without limitation to the provisions of the rest of this Sub-Clause, whenever the Engineer 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 Engineer request promptly increase, or may decrease, as the case may be, the value of the Performance Security in that currency by an equal percentage.

### 4.3 Contractor's Representative

4.3.1 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.**

4.3.2 Unless the Contractor's Representative **is named in the Contract**, the Contractor shall, prior to the Commencement Date, submit to the Engineer for consent the name and particulars of the person the Contractor proposes to appoint as Contractor's Representative. If consent is with held 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 an other suitable person for such appointment.

4.3.3 The Contractor shall not, without the prior consent of the Engineer, revoke the appointment of the Contractor's Representative or appoint are placement.

4.3.4 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 Engineer prior consent, and the Engineer shall be notified accordingly.

4.3.5 The Contractor's Representative shall, on behalf of the Contractor, receive instructions under Sub-Clause 3.3 [Instructions of the Engineer].

4.3.6 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 Engineer has received prior notice signed by the Contractor's Representative, naming the person and specifying the powers, functions and authority being delegated or revoked.

4.3.7 The Contractor's Representative shall be fluent in the language for communications defined in Sub-Clause1.4 [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.

### 4.4 Sub-contractors

4.4.1 The Contractor shall not subcontract the whole of the Works. The contractor may however subcontract the works as provided in Clause 34.2.

4.4.2 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:

(i). 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;

(ii). The prior consent of the Procuring Entity shall be obtained to other proposed Subcontractors;

(iii). 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

(iv). 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].

4.4.3 The Contractor shall ensure that the requirements imposed on the Contractor by Sub-Clause 1.12 [Confidential Details] apply equally to each Subcontractor.

4.4.4 Where practicable, the Contractor shall give fair and reasonable opportunity for contractors from Kenya to be appointed as Subcontractors.

### 4.5 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.

### 4.6 Co-operation

4.6.1 The Contractor shall, as specified in the Contract or as instructed by the Engineer, allow appropriate opportunities for carrying out work to:

i. The Procuring Entity's Personnel,

ii. Any other contractors employed by the Procuring Entity, and

iii. 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.

4.6.2 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.

4.6.3 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 Engineer 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 Engineer 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 Engineer 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 thise.

### 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 Engineer 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 Engineer 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 Engineer as soon as practicable.

4.12.3 This notice shall describe the physical conditions, so that they can be inspected by the Engineer 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 Engineer 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 Engineer 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 Engineer 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 Engineer 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 Engineer 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 be tween 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 Engineer 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 Contractor's 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 hall 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 Engineer 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's hall 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 Engineer in accordance with Sub-Clause 2.5 [Procuring Entity's Claims] and Sub-Clause3.5 [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 Engineer of any shortage, defect or default in these materials. Unless otherwise agreed by both Parties, the Procuring Entity shall immediately rectify the notified shortage, defector 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.

### 4.21 Progress Reports

4.21.1 Unless otherwise stated in the Special Conditions, monthly progress reports shall be prepared by the Contractor and submitted to the Engineer 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.

4.21.2 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.

### 4.22 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.

### 4.23 Contractor's Operations on Site

4.23.1 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 Engineer 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.

4.23.2 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.

4.23.3 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.

**4.24 Fossils**

4.24.1 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.

4.24.2 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 Engineer 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 Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

## 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 fulfil 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 Engineer 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 Engineer 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 Engineer in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and

ii) Submits to the Engineer 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.

## 6.0 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 are 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 labor from amongst the Procuring Entity's Personnel.

6.4 **Labor Laws**

The Contractor shall comply with all the relevant labor 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 Engineer 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, if work done outside the normal working hours shall be considered and paid for as overtime.

6.6 **Facilities for Staff and Labor**

6.7 **Health and Safety**

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.

6.7.1 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 Engineer 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 fulfil the Contractor's obligations, the Contractor shall provide all necessary super intendance 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 Contractors Key personnel shall be named in the Special Conditions of Contract. The Engineer 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:

i. Persists in any misconduct or lack of care,
ii. Carries out duties in competently or negligently,
iii. fails to conform with any provisions of the Contract,
iv. persists in any conduct which is prejudicial to safety, health, or the protection of the environment, or
v. 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 Sitea n 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 a tall 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 there of by Contractor's Personnel.

6.16 **Prohibition of Forced or Compulsory Labor.**

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, 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 labor 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 employ mentor retirement, and discipline.

## 7.0 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 Engineer 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 Engineer 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 Engineer whenever any work is ready and before it is covered up, put out of sight, or packaged for storage or transport. The Engineer shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the Contractor that the Engineer 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 Engineer 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 Engineer shall give the Contractor not less than 24 hours' notice of the Engineer intention to attend the tests. If the Engineer 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 Engineer 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 Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

i. 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

ii. payment of any such Cost-plus profit, which shall be included in the Contract Price.

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

7.4.7 The Contractor shall promptly forward to the Engineer duly certified reports of the tests. When the specified tests have be enpassed, the Engineer shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect. If the Engineer has not attended the tests, he shall be deemed to

have accepted the readings as accurate.

### 7.5 Rejection

7.5.1 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 Engineer 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.

7.5.2 If the Engineer 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.

### 7.6 Remedial Work

7.6.1 Notwithstanding any previous test or certification, the Engineer may instruct the Contract or to:

i) Remove from the Site and replace any Plant or Materials which is not in accordance with the Contract,

ii) remove and re-execute any other work which is not in accordance with the Contract, and

iii) Execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseen able event or otherwise.

7.6.2 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).

7.6.3 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.

7.6.4 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 in corporated 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].

### 7.8 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 fabricated), except to the extent that disposal are as within the Site are specified in the Contract.

## COMMENCEMENT, DELAYS AND SUSPENSION

### 8.1 Commencement of Works

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 Engineer notification recording the agreement of both Parties on such fulfilment and instructing to commence the Work is received by the Contractor:

i. Signature of the Contract Agreement by both Parties, and if required, approval of the Contract by relevant authorities of Kenya;

ii. 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.

iii. 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.

If the said Engineer 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].

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

8.3.2 The Contractor shall submit a detailed time programme to the Engineer 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:

i) 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,

ii) each of these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),

iii) the sequence and timing of inspections and tests specified in the Contract, and

iv) a supporting report which includes: general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and 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.

8.3.3 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.

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

8.3.5 If, at anytime, the Engineer 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 Engineer in accordance with this Sub-Clause.

### 8.4 Extension of Time for Completion

8.4.1 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.

8.4.2 If the Contractor considers itself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Engineer in accordance with Sub-Clause 20.1 [Contractor's Claims]. When determining each extension of time under Sub-Clause 20.1, the Engineer shall review previous determinations and may increase, but shall not decrease, the total extension of time.

### 8.5 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].

### 8.6 Rate of Progress

8.6.1 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 Engineer 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.

8.6.2 Unless the Engineer 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.

8.6.3 The Procuring Entity shall pay additional costs of revised methods including acceleration measures, instructed by the Engineer to reduce delays resulting from causes listed under Sub-

Clause 8.4 [Extension of Time for Completion] without generating, however, any other additional payment benefit to the Contractor.

**8.7 Delay Damages**

8.7.1 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 Engineer may at anytime 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 Engineer 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 Engineer instructions under Sub- Clause 8.8 [Suspension of Work] and/or from resuming the work, the Contractor shall give notice to the Engineer 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 Engineer shall proceed in accordance with Sub-Clause3.5 [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 Engineer 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 Engineer permission to proceed. If the Engineer 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 Engineer 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 Engineer an instruction to this effect under Clause 13 [Variations and Adjustments].

## TESTS ON COMPLETION

### 9.1 Contractor's Obligations

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].

The Contractor shall give to the Engineer 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 Engineer shall instruct.

In considering the results of the Tests on Completion, the Engineer 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

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.

If the Contractor is unduly delaying the Tests on Completion, the Engineer 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.

If the Contractor fails to carryout the Tests on Completion within the period of 21 days, the Procuring Entity's Personnel may proceed with the Test sat 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 asaccurate.

### 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 Engineer 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**

If the Works, or a Section, fail to pass the Tests on Completion repeated under Sub-Clause 9.3 [Retesting], the Engineer shall be entitled to:

i) Order further repetition of Tests on Completion under Sub-Clause 9.3; or

ii) 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-Clause1 1.4 [Failure to Remedy Defects].

## 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 Engineer 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 Contract or may similarly apply for a Taking-Over Certificate for each Section.

10.1.3 The Engineer shall, within 30 days after receiving the Contractor's application:

a. Issue the Taking-Over Certificate to the Contract or, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor out standing 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.

10.1.4 If the Engineer 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.

**10.2 Taking Over of Parts of the Works**

10.2.1 The Engineer may, at the sole discretion of the Procuring Entity, issue a Taking-Over Certificate for any part of the Permanent Works.

10.2.2 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 Engineer 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:

i. The part which is used shall be deemed to have been taken over as from the date on which it is used,

ii. 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

iii. if requested by the Contractor, the Engineer shall issue a Taking-Over Certificate for this part.

10.2.3 After the Engineer 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.

10.2.4 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 Contractor agreed by the Contractor, the Contractor shall (i) give notice to the Engineer 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 Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this accrued cost.

10.2.5 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 Engineer 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.

### 10.3 Interference with Tests on Completion

10.3.1 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.

10.3.2 The Engineer 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 Engineer 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.

10.3.3 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 Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

i. 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

ii. payment of any such accrued costs, which shall be included in the Contract Price.

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

### 10.4 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.

## 11.0 DEFECTS LIABILITY

### 11.1 Completion of Outstanding Work and Remedying Defects

11.2 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:

3.5.4.1 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

3.5.4.2 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).

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

11.4 **Cost of Remedying Defects**

11.4.1 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.

11.4.2 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.

**11.5 Extension of Defects Notification Period**

11.5.1 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.

11.5.2 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 defectsor damage occurring more than two years after the Defects Notification Period for the Plant and/ or Materials would otherwise have expired.

**11.6 Failure to Remedy Defects**

11.6.1 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.

11.6.2 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 Engineer 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.

**11.7 Removal of Defective Work**

If the defector 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.

**11.8 Further Tests**

11.8.1 If the work of remedying of any defector damage may affect the performance of the Works, the Engineer 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.

11.8.2 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.

**11.9 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.

**11.10 Contractor to Search**

The Contractor shall, if required by the Engineer, search for the cause of any defection 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 Engineer in accordance with Sub-Clause 3.5 [Determinations] and shall be included in the Contract Price.

**11.11 Completion Certificate**

11.11.1 Performance of the Contractor's obligations shall not be considered to have been completed until the Engineer has issued the Completion Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.

11.11.2 The Engineer shall issue the Completion Certificate within 30days after the latest of the expiry dates of the Defects Liability Period, or as soon there after 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.

11.11.3 Only the Completion Certificate shall be deemed to constitute acceptance of the Works.

**11.12 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.

**11.13 Clearance of Site**

11.13.1 Upon receiving the Completion Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.

11.13.2 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.

11.13.3 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.

## 12.0 MEASUREMENT AN 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 Engineer requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:

12.1.2.1 promptly either attend or send another qualified representative to assist the Engineer in making the measurement, and

12.1.2.2 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 Engineer 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 Engineer of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Engineer 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 Engineer 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 Engineer 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.

12.3.2 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.

12.3.3 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.

12.3.4 However, for a new item of work, a new rate or price shall be appropriate for such item of work if:

12.3.4.1 The work is instructed under Clause13 [Variations and Adjustments],

12.3.4.2 no rate or price is specified in the Contract for this item, and

12.3.4.3 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.

12.3.5 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.

12.3.6 Until such time as an appropriate rate or price is agreed or determined, the Engineer shall determine a provisional rate or price for the purposes of Interim Payment Certificates as soon as the concerned work commences.

12.3.7 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: *(corrected tender price– tender price)/ tender price X 100*.

**12.4 Omissions**

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

a) 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;

b) The omission of the work will result (or has resulted) in this sum not forming part of the Contract Price; and

c) this cost is not deemed to be included in the evaluation of any substituted work; then the Contractor shall give notice to the Engineer accordingly, with supporting particulars. Upon receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this cost, which shall be included in the Contract Price.

## 13.0 VARIATIONS AND ADJUSTMENTS

**Right to Vary**

**13.1** Variations may be initiated by the Engineer 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 Engineer under this Clause shall in any way vitiate or in validate the Contract.

13.2 The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Engineer 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 Engineer shall cancel, confirm or vary the instruction.

13.3Each Variation may include:

a. changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation),

b. changes to the quality and other characteristics of any item of work,

c. changes to the levels, positions and/ or dimensions of any part of the Works,
d. omission of any work unless it is to be carried out by others,
e. 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.

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

**13.2. Variation Order Procedure**

13.2.1 Prior to any Variation Order under Sub-Clause 13.1.4 the Engineer 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 Engineer shall, after due consultation with the Employer and the Contractor, decide as soon as possible whether the variation shall be carried out. If the Engineer 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 Engineer and the Contractor are unable to agree the adjustment of the Contract Price, the provisions of Sub-Clause 13.2.2 shall apply.

**13.2.2 Disagreement on Adjustment of the Contract Price**

If the Contractor and the Engineer are 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 Engineer 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 Engineer shall on this basis determine the rates or prices to enable on-account payment to be included in certificates of payment.

**13.2.3 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-Clause31.3.

## 13.3 Value Engineering

13.3.1 The Contractor may, at anytime, submit to the Engineer 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.

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

13.2.3 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 Engineer 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 behalf (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 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.

## 13.4 Variation Procedure for Value Engineering proposal

13.4.1 If the Engineer requests a proposal, prior to instructing a Variation, the Contractor shall respond in writing a s 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.

13.4.2 The Engineer 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 a waiting a response.

13.4.3 Each instruction to execute a Variation, with any requirements for the recording of Costs, shall be issued by the Engineer to the Contractor, who shall acknowledge receipt.

13.4.4 Each Variation shall be evaluated in accordance with Clause 12 [Measurement and Evaluation], unless the Engineer instructs or approves otherwise in accordance with this Clause.

## 13.5 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.

**13.6 Provisional Sums**

13.6.1 Each Provisional Sum shall only be used, in whole or in part, in accordance with the Engineer 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 Engineer shall have instructed. For each Provisional Sum, the Engineer 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 Engineer 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 Engineer accurate statements in duplicate 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 Engineer 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 Engineer 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 Engineer 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 Im/Io**

where:

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

**A** and **B** are coefficients **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 **Io** 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 non adjustable 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.

13.9.4 The cost indices or reference prices stated in the table of adjustment data shall be used. If their source is in doubt, the Engineer shall determine it. 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.

139.5 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.

139.6 Until each current cost index is available, the Engineer 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.

139.7 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.

139.8 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.

## 14.0 CONTRACT PRICE AND PAYMENT

### 14.1 The Contract Price

14.1.1 Unless otherwise stated in the Special Conditions:

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.

i. 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;
ii. 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];
iii. 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:

a. of the Works which the Contractor is required to execute, or
b. for the purposes of Clause12 [Measurement and Evaluation]; and
c. 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 Engineer may take account of the break down when preparing Payment Certificates but shall not be bound by it.

### 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 instalments (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 Engineer shall deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate for the advance payment or its first instalment 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 Engineer in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates], as follows:

i. 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

ii. 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 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

14.2.7 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.

14.2.8 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 Engineer 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-Clause4.21 [Progress Reports].

14.3.2 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:

14.3.2.1 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);

14.3.2.2 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];

14.3.2.3 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**;

14.3.2.4 Any amounts to be added for the advance payment and (if more than one instalment) and to be deducted for its repayments in accordance with Sub-Clause 14.2 [Advance Payment];

14.3.2.5 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];

14.3.2.6 Any other additions or deductions which may have become due under the Contractor otherwise, including those under Clause 20 [Claims, Disputes and Arbitration]; and

14.3.2.7 The deduction of amounts certified in all previous Payment Certificates.

**14.4 Schedule of Payments**

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

i. The instalments 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];

ii. Sub-Clause 14.5 [Plant and Materials intended for the Works] shall not apply; and

iii. If these instalments 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 Engineer may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine revised instalments, which shall take account of the extent to which progress is less or more than that on which the instalments were previously based.

14.4.2 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.

**14.5 Plant and Materials intended for the Works**

14.5.1. 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].

14.5.2. 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.

14.5.3. The Engineer shall determine and certify each addition if the following conditions a resatisfied:

1) 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:

i) the relevant Plant and Materials:

ii) are those listed in the Schedules for payment when shipped,

iii) have been shipped to Kenya, enroute to the Site, in accordance with the Contract; and

iv) are described in a clean shipped bill of lading or other evidence of shipment, which has been submitted to the Engineer 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-Clause14.2 [Advance Payment] and shall be valid until the Plant and Materials are properly stored on Site and protected against loss, damage or deterioration; or

v) the relevant Plant and Materials:

1. are those listed in the Schedules for payment when delivered to the Site, and
2. 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.

14.5.4. The additional amount to be certified shall be the equivalent of eighty percent (80%) of the Engineer 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.

14.5.5. 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.

**14.6 Issue of Interim Payment Certificates**

14.6.1 No amount will be certified or paid until the Procuring Entity has received and approved the Performance Security. Thereafter, the Engineer 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 Engineer fairly determines to be due, with all supporting particulars for any reduction or withholding made by the Engineer on the Statement if any.

14.6.2 However, prior to issuing the Taking-Over Certificate for the Works, the Engineer 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 Engineer shall give notice to the Contractor accordingly.

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

i) 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

ii) 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.

14.6.4 The Engineer 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 Engineer 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], which ever is later;

b) The amount certified in each Interim Payment Certificate within 60 days after the Engineer 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 inter bank 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 Engineer 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 behalf (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 Engineer 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 behalf (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 Engineers hall 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-Clause13.8 [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 Engineer 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 Engineer 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 Contractor otherwise.

14.11.2 If the Engineer disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Engineer 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 Engineer 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 Engineer and the Contractor and any changes to the draft final statement which are agreed, it be comes evident that a dispute exists, the Engineer 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 out standing 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 30days 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 Engineer 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 Engineer shall request theContractor to do so. If the Contractor fails to submit an application within a period of 30 days, the Engineer 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 in demnification 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) otherpaymentsanddeductions 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.

## 15.0 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 Engineer 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:

15.2.1.1. Fails to comply with Sub-Clause 4.2 [Performance Security] or with a notice under Sub-Clause 15.1 [Notice to Correct],

15.2.1.2. Abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,

15.2.1.3. 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,

15.2.1.4. subcontracts the major part or whole of the Works or assigns the Contract without the consent of the Procuring Entity,

15.2.1.5. 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 theseacts or events, or

15.2.1.6. 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

15.2.1.7. If the contract or repeatedly fails to remedy delivers defective work,

15.2.1.8. 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.

15.2.2. 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.

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

15.2.4. 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.

15.2.5. 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.

15.2.6. 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.

**15.3 Valuation at Date of Termination**

Assoon as practicable after a notice of termination under Sub-Clause 15.2 [Termination by Procuring Entity] has taken effect, the Engineer 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.

**15.4 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;

i. 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.

ii. 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.

## 16.0 SUSPENSION AND TERMINATION BY CONTRACTOR

### 16.1 Contractor's Entitlement to Suspend Work

16.1.1 If the Engineer 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 bea nd 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 Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

i. 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

ii. payment of any such Cost-plus profit, which shall be included in the Contract Price.

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

### 16.2 Termination by Contractor

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

12.7.12.1 the Engineer fails, within 60 days after receiving a Statement and supporting documents, to issue the relevant Payment Certificate,

12.7.12.2 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-Clause1 4.7 [Payment] within which payment is to be made (except for deductions in accordance with Sub-Clause 2.5 [Procuring Entity's Claims]),

12.7.12.3 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,

12.7.12.4 a prolonged suspension affects the whole of the Works as described in Sub-Clause 8.11 [Prolonged Suspension], or

12.7.12.5 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.

12.7.12.6 the Contractor does not receive the Engineer 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].

16.2.2 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.

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

### 16.3 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 Engineer 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.

### 16.4 PaymentonTermination

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.

## 17.0 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:

17.1.1.1 Bodily injury, sickness, disease or death, of any person what so ever arising outo for 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

17.1.1.2 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, radiation 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.

**17.4 Consequences of Procuring Entity's Risks**

17.4.1 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 Engineer and shall rectify this loss or damage to the extent required by the Engineer.

17.4.2 If the Contractor suffers delay and/ or incurs Cost from rectifying this loss or damage, the Contractor shall give a further notice to the Engineer 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.

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

**17.5 Intellectual and Industrial Property Rights**

17.5.1 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.

17.5.2 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.

17.5.3 The Procuring Entity shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:

i. An unavoidable result of the Contractor's compliance with the Contract, or
ii. A result of any Works being used by the Procuring Entity:

a. for a purpose other than that indicated by, or reasonably to be inferred from, the Contract, or
b. 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.

17.5.4 The Contractor shall indemnify and hold the Procuring Entity harmless again stand 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.

17.5.5 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.

17.5.6 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 know how 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.

## 18.0 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:

i. Evidence that the insurances described in this Clause have been affected, and
ii. 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 at tempts 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 Contractor 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 Contractor 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, Material sand 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 sub-paragraph (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:

i. Shall be effected and maintained by the Contractor as insuring Party,
ii. 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,

iii. shall cover all loss and damage from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks],

iv. 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

v. may however exclude loss of, damage to, and reinstatement of:

a) 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),

b) apart 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,

c) apart 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

d) Goods while they are not in Kenya, subject to Sub-Clause 14.5 [Plant and Materials intended for the Works].

18.2.5. 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 asthe 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].

**18.3 Insurance against Injury to Persons and Damage to Property**

18.3.1 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.

18.3.2 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.

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

i. Shall be effected and maintained by the Contractor as insuring Party,

ii. shall be in the joint names of the Parties,

iii. 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

iv. may however exclude liability to the extent that it arises from:

a) the Procuring Entity's right to have the Permanent Works executed on, over, under, in

or

b) through any land, and to occupy this land for the Permanent Works,

c) damage which is an unavoidable result of the Contractor's obligations to execute the

d) Works and remedy any defects, and

e) a cause listed in Sub-Clause 17.3 [Procuring Entity's Risks], except to the extent that cover is available at commercially reasonable terms.

**18.4 Insurance for Contractor's Personnel and Sub Contractors**

18.4.1 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 and Sub Contractors employed by the Contractor.

18.4.2 The insurance shall cover the Procuring Entity and the Engineer 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 Sub Contractors employed by the Contractor, 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.

18.4.3 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.

## 19.0 FORCE MAJEURE

**19.1 Definition of Force Majeure**

19.1.1 In this Clause, "Force Majeure" means an exceptional event or circumstance:

i. Which is beyond a Party's control,

ii. Which such Party could not reasonably have provided against before entering into the Contract,

iii. which, having arisen, such Party could not reasonably have avoided or over come, and

iv. 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 lock out 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 Not withstanding 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:

19.4.2 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

19.4.3 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- Clause18.2 [Insurance for Works and Contractor's Equipment].

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

**19.5 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.

**19.6 Optional Termination, Payment and Release**

19.6.1 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].

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

i. theamountspayableforanyworkcarriedoutforwhichapriceisstatedintheContract;
ii. 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;
iii. other Cost or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;
iv. 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
v. the Cost of repatriation of the Contractor's staff and lab or employed wholly in connection with the Works at the date of termination.

### 19.7 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 fulfil 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.

## 20.0 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 an other location acceptable to the Engineer. Without admitting the Procuring Entity's liability, the Engineer 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 Engineer to inspect all these records and shall (if instructed) submit copies to the Engineer.

20.1.5 Within 42days 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 Engineer 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:

i. This fully detailed claim shall be considered as interim;

ii. The Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/ or amount claimed, and such further particulars as the Engineer may reasonably require; and

iii. 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 Engineer and approved by the Contractor, the Engineer 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 Engineer 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 Engineer does not respond within the time frame defined in this Clause, either Party may consider that the claim is rejected by the Engineer 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.

### 20.2 Procuring Entity's Claims

20.2.1 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 Engineer 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.

20.2.2 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.

20.2.3 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 Engineer 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].

20.2.4 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.

### 20.3 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.

### 20.4 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 Engineer 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.

### 20.5 Arbitration

20.5.1 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.

20.5.2 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.

20.5.3 Not withstanding 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.

20.5.4 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 a ward any sums which ought to have been the subject of or included in any certificate.

20.5.5 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.

20.5.6 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 Engineer from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.

20.5.7 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.

20.5.8 Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, and the Engineer shall not be altered by reason of any arbitration being conducted during the progress of the Works.

20.5.9 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

20.6.1 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

20.6.2 The institution written to first by the aggrieved party shall take precedence over all other institutions.

**20.7 Arbitration with Foreign Contractors**

20.7.1 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.

20.7.2 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-Clause1.4 [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**

20.9.1 The award of such Arbitrator shall be final and binding up on the parties.

20.9.2 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, the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and 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.

| Conditions | Sub-Clause | Data |
|---|---|---|
| **Part A - Contract Data** | | |
| Procuring Entity's name and address | Heading | Kenya Airports Authority<br>P.O Box 19001-00501<br>Nairobi |
| Name and Reference No. of the Contract | Heading and 1.1 | **PROPOSED CONSTRUCTION OF NEW**<br><br>**PASSENGER TERMINAL BUILDING AT**<br><br>**UKUNDA (DIANI) AIRSTRIP** |
| Project manager's Name and Address | Heading and 3.1.1 | General Manager- Projects & Engineering Services<br>Kenya Airports Authority<br>P.O Box 19001-00501<br>Nairobi<br><br>**Or his authorized representative**. |
| Time for Completion | 1.1. | 24 Months from Commencement Date. |
| Defects Liability Period | 1.1 | 365 days from date stated in Taking Over Certificate. |
| Sections | 1.1 | *N/A* |
| Electronic transmission systems | 1.3 | Refer to the invitation to tender |
| Time for the Parties entering into a Contract Agreement | 1.6 | The Parties shall enter into a Contract Agreement after the Contractor receives the Letter of Acceptance |
| Commencement Date | 8.1.1(a, b, c &d) | *Delete and replace with;*<br><br>*The Commencement Date shall be 28 days after the Project manager has issued Notice of Commencement. This shall be issued after the following precedent conditions have all been fulfilled:*<br><br>*a) Submission of Performance Guarantee in accordance with Clause 4.2 of the GCC*<br>*b) Signature of the Contract Agreement by both Parties.*<br>*c) Submission of revised program of works in the form and detail provided for under Clause 8.3 of GCC*<br>*d) Access to the Site as provided in Clause 2.1 of the SCC.*<br>*e) Submission of Insurance Policies* |
| Time for access to the Site | 2.1.1 | after issuance of Notice to Commence. |

| Conditions | Sub-Clause | Data |
|---|---|---|
| Architect Duties and Authority | 3.1.6 (b) (ii) | No variations that would result in an increase of the Contract Amount is allowed save as provided under the law. |
| Performance Security | 4.2.1 | N/A |
| | 4.2.2 | 10% of the Contract Sum |
| | 4.2.3 | *Delete and replace with:*<br><br>The Performance Security shall be issued by a bank located in Kenya, licensed by the Central Bank of Kenya and acceptable to the Procuring Entity and in the form provided in Section III.<br><br>The Procuring Entity shall seek authentication of the Performance Security from the issuing bank. It is the responsibility of the Contractor to ensure that: -<br>(i) the issuing bank responds with reasonable dispatch to an inquiry from the Procuring Entity. Failure by the issuing bank to respond to the inquiry within a reasonable period may lead to the Contractor's Performance Security being rejected and returned.<br><br>The Performance Security shall be valid and enforceable until the Contractor has executed and completed the Works and remedied any defects and up to the time of issuance of the Performance Certificate.<br><br>The Contractor shall furnish the Engineer with a copy of the performance security. |
| Delay damages for the Works | 8.7 & 14.15(b) | KES 50,000.00 per day |
| Maximum amount of delay damages | 8.7.1 | 10% of the final Contract Price. |
| Provisional Sums | 13.6. (b)(ii) | *As per priced bill of quantities* |
| Adjustments for Changes in Cost | 13.9 | Not Applicable |

| | | |
|---|---|---|
| Total advance payment | 14.2.1 | In the event that an advance payment is granted, the following shall apply: -<br><br>a) Provision in the PPADA 2015 shall be followed<br>b) No advance payment may be made before the Contractor has submitted proof of the establishment of deposit or of a directly liable guarantee satisfactory to the Employer in the amount of the advance payment. The guarantee shall be in the same currency as the advance.<br><br>c) Reimbursement of the advance shall be affected by deductions from monthly interim payments.<br><br>d) Reimbursement of the lump sum advance shall be made by deductions from the Interim payments and where applicable from the balance owing to the Contractor. Reimbursement shall begin when the amount of the sums due under the Contract reaches 20% of the original amount of the Contract. It shall have been completed by the time 80% of this amount is reached.<br><br>The amount to be repaid by way of successive deductions shall be calculated by means of the formula:<br><br>R = A (X1 – X11) 80 – 20<br><br>Where:<br>R = the amount to be reimbursed<br><br>A = the amount of the advance which has been granted<br><br>X1 =the amount of proposed cumulative payments as a percentage of the original amount of the Contract. This figure will exceed 20% but not exceed 80%.<br>X11 = The amount of the previous cumulative payments as a percentage of the original amount of the Contract. This figure will be below 80% but not less than 20%.<br><br>(e) With each reimbursement the counterpart of the directly liable guarantee may be reduced accordingly |

| Conditions | Sub-Clause | Data |
|---|---|---|
| Repayment amortization rate of advance payment | 14.2.5 (b) | N/A |
| Percentage of Retention | 14.3.2 (c) | 10% of each Interim Payment Certificate |
| Limit of Retention Money | 14.3.2 (c) | The limit of Retention Money (if any) shall be 10% of the Contract Amount. |
| Plant and Materials | 14.5.3(b)(i) | N/A |
| | 14.5.3(c)(i) | N/A |
| Minimum Amount of Interim Payment Certificates | 14.6.2 | N/A |
| Publishing source of commercial interest rates for financial charges in case of delayed payment | 14.8 | Calculated at the annual rate of three percentage points above the discount rate as determined by Central Bank of Kenya. |
| Maximum total liability of the Contractor to the Procuring Entity | 17.6.2 | *10% of the contact sum* |
| Periods for submission of insurance:<br>a. evidence of insurance.<br><br>b. relevant policies | 18.1.6 | **a**. evidence of insurance. - 14days after signing of Contract<br>b. relevant policies __14 days after signing of Contract |
| Maximum amount of deductibles for insurance of the Procuring Entity's risks | 18.2.4 (d) | *10% of Contract Amount* |
| Minimum amount of third-party insurance | 18.3.2 | *10% of the contract* |
| The place of arbitration | 20.7.2 | Nairobi Centre for International Arbitration (NCIA) |

## SECTION X - CONTRACT FORMS

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD

FORM NO. 2 – REQUEST FOR REVIEW

FORM No. 3-LETTEROF AWARD

FORM No. 4 - CONTRACT AGREEMENT

FORM No. 5 - PERFORMANCE SECURITY [Option 1 - Unconditional Demand Bank Guarantee]

FORM No. 6- PERFORMANCE SECURITY [Option 2– Performance Bond] FORM No. 7 - ADVANCE PAYMENT SECURITY

FORM No. 8 - 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 FOR REVIEW (r.203(1))**

**PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD**

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

**BETWEEN**

**.....APPLICANT**

**AND**

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

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

**REQUEST FOR REVIEW**

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

1.

2.

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

1.

2.

SIGNED .....(Applicant) Dated on.....day of ...../...20.....

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FOR OFFICIAL USE ONLY Lodged with the Secretary Public Procurement Administrative Review Board on.....day of .....20.....

**SIGNED**

**Board Secretary**

## FORM NO 3: 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 here by 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 4: 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 PROPOSED REHABILITATION OF KAA HEADQUATERS' ROOF 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. 5 - 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 PROPOSED REHABILITATION OF KAA HEADQUATERS' ROOF (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 of.....,2.....[2], 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.*

---

[1] *The 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.*

[2] *Insert 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. 6- 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:** *[insert name and Address of*

Procuring Entity*]* **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 Obligee (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. 7 - 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 **PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP** (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*_____)[1] 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_____,2_____,[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.*

[1] *The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency of the advance payment as specified in the Contract.*

[2] *Insert the expected expiration date of the Time for Completion. The Procuring Entity should note that in the event of an extension of the time 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 guarant*

## FORM NO. 8 – 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 **PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP** *[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*_____*])*[1] 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 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.....[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.*

[1] *The Guarantor shall insert an amount representing the amount of the second half of the Retention Money.*

[2] *Insert a date that is twenty-eight days after the expiry of retention period after the actual completion date of the contract. 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.*

**COMMITMENT TO PROVIDE BENEFICIAL OWNERSHIP INFORMATION**

I, ..... of P. O. Box ..... being a resident of ..... in the Republic of do hereby make a state as follows: -

THAT I am the Chief Executive Officer/Managing Director/Principal Officer/Director/ Authorized Officer of..... *(Insert name of the Company)* who is a Bidder in respect of Tender No. **KAA/..... PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP**

and duly authorized and competent to make this statement.

1. THAT I do hereby commit to provide Beneficial Ownership Information in conformity with the Beneficial Ownership Disclosure Form to the procuring entity upon receipt of notification of award in the event we are the successful tenderer in this subject procurement proceeding. I fully understand that failure to furnish the procuring entity with the Beneficial Ownership Information within the period provided for in the letter of award shall invalidate my award and may considered as refusal to enter into a written contract which is punishable under Section 41(1) (e) of the Public Procurement and Asset Disposal Act, 2015.

Name of the Firm/Company.....

Registered Physical Address of the Company.....

Posta Address.....

Telephone No..... Mobile Number .....

Email Address .....

Name of Authorized Signatory.....

Designation .....

Signatory.....

Date.....

Witnessed by .....

Signature of Witness.....

Date.....

**BENEFICIAL OWNERSHIP DISCLOSURE FORM**

***INSTRUCTIONS TO TENDERERS***

*This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful tenderer pursuant to Regulation 4 of the Companies (Beneficial Ownership Information) (Amendment) Regulations, 2022. In case of joint venture, the tenderer must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.*
*For the purposes of this Form, a Beneficial Owner of a Tenderer is any natural person who ultimately owns or controls the legal person (tenderer) or arrangements or a natural person on whose behalf a transaction is conducted, and includes those persons who exercise ultimate effective control over a legal person (Tenderer) or arrangement.*
Tender No.**: KAA/..... PROPOSED CONSTRUCTION OF NEW PASSENGER TERMINAL BUILDING AT UKUNDA (DIANI) AIRSTRIP**
In response to the requirement in your notification of award dated_____*[insert date of notification of award]* to furnish additional information on beneficial ownership:_____*[select one option as applicable and delete the options that are not applicable]*

I) We here by provide the following beneficial ownership information.
*Details of beneficial ownership*

| | **Details of all Beneficial Owners** | | **% of shares a person holds in the company Directly or indirectly** | **% of voting rights a person holds in the company** | **Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer (Yes / No)** | **directly or indirectly exercises significant influence or control over the tenderer /company (Yes / No)** |
|---|---|---|---|---|---|---|
| 1. | Full Name | | Directly---------- % of shares<br><br>Indirectly---------- % of shares | Directly..... % of voting rights<br><br>Indirectly----------% of voting rights | | |
| | National identity card number or Passport number | | | | | |
| | Personal Identification Number (where applicable) | | | | | |
| | Nationality | | | | | |
| | Date of birth *[dd/mm/yyyy]* | | | | | |
| | Postal address | | | | | |

| | **Details of all Beneficial Owners** | | **% of shares a person holds in the company Directly or indirectly** | **% of voting rights a person holds in the company** | **Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer (Yes / No)** | **directly or indirectly exercises significant influence or control over the tenderer /company (Yes / No)** |
|---|---|---|---|---|---|---|
| | Residential address | | | | | |
| | Telephone number | | | | | |
| | Email address | | | | | |
| | Occupation or profession | | | | | |
| | | | | | | |
| 2. | Full Name | | Directly---------- % of shares<br><br>Indirectly---------- % of shares | Directly.....% of voting rights<br><br>Indirectly----------% of voting rights | | |
| | National identity card number or Passport number | | | | | |
| | Personal Identification Number (where applicable) | | | | | |
| | Nationality | | | | | |
| | Date of birth *[dd/mm/yyyy]* | | | | | |
| | Postal address | | | | | |
| | Residential address | | | | | |
| | Telephone number | | | | | |
| | Email address | | | | | |
| | Occupation or profession | | | | | |
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| 3.<br><br>etc. | | | | | | |
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II) Am fully aware that beneficial ownership information above shall be reported to the Public Procurement Regulatory Authority together with other details in relation to contract awards and

shall be maintained in the Government Portal, published and made publicly available pursuant to Regulation 5 of the Companies (Beneficial Ownership Information) (Amendment) Regulations, 2022

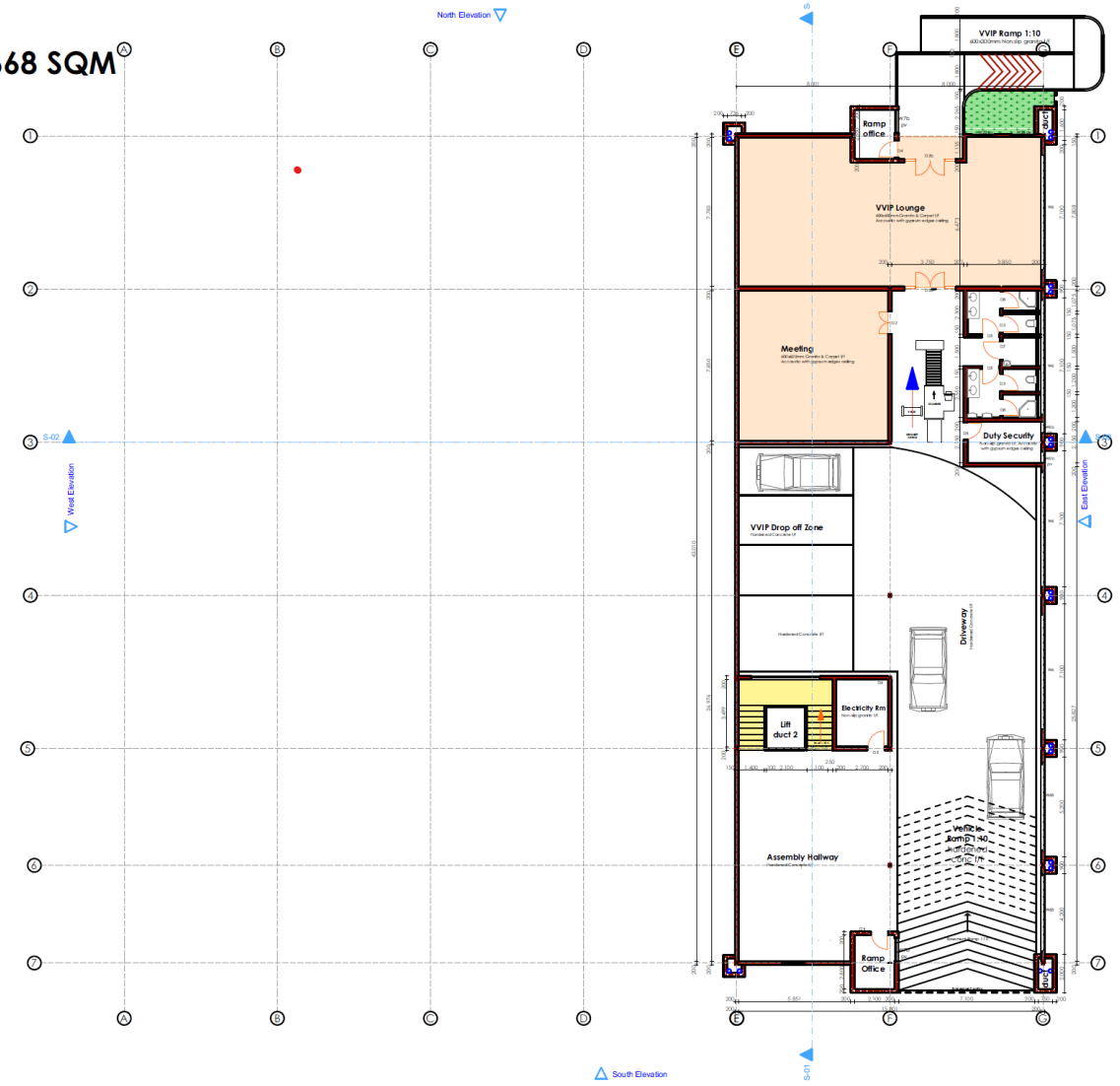
III) What is stated to herein above is true to the best of my knowledge, information and belief.

*Name of the Tenderer: .....*[insert complete name of the Tenderer]___*
*Name of the person duly authorized to sign the Tender on behalf of the Tenderer: ** [insert complete name of person duly authorized to sign the Tender]*
*Designation of the person signing the Tender: ..... [insert complete title of the person signing the Tender]*
*Signature of the person named above: ..... [insert signature of person whose name and capacity are shown above]*
*Date this ..... [insert date of signing] day of..... [Insert month], [insert year]*

Bidder Official Stamp/ Company Seal.

# DRAWINGS

**PLINTH AREA = 668 SQM**




**L (--) 002** **BASEMENT PLAN** **1:230**



2. All dimensions in mm unless stated should be read and not measured
3. All construction work to comply with latest K.B.S. code of practice Local Authority By- Laws and fire regulations.
4. Contractors must verify all dimensions and levels before commencing work,any descripances should be reported to the Architect before work is put at hand.
5. P.V denotes a permanent ventilation and must be provided above all doors and windows where indicated.
6. D.P.C denotes one layer of bitumen felt to be provided under all walls above 150mm G.L.
7. All drainage Road crossing to be incased in concrete to civil engineer's details.

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Kenya Airports Authority
P. O. Box 19001-00501 NAIROBI
Tel: 6611000/6612000
Fax: 822078
Email: info@kenyaairports.co.ke

**Project Title:**
PROPOSED CONSTRUCTION OF PASSENGER TERMINAL BUILDING, UKUNDA AIRSTRIP

**Job No:**
KAA/ OT/ UKD

**Dwg No.**
PTB-02

**Drawing Title:**
BASEMENT PLAN

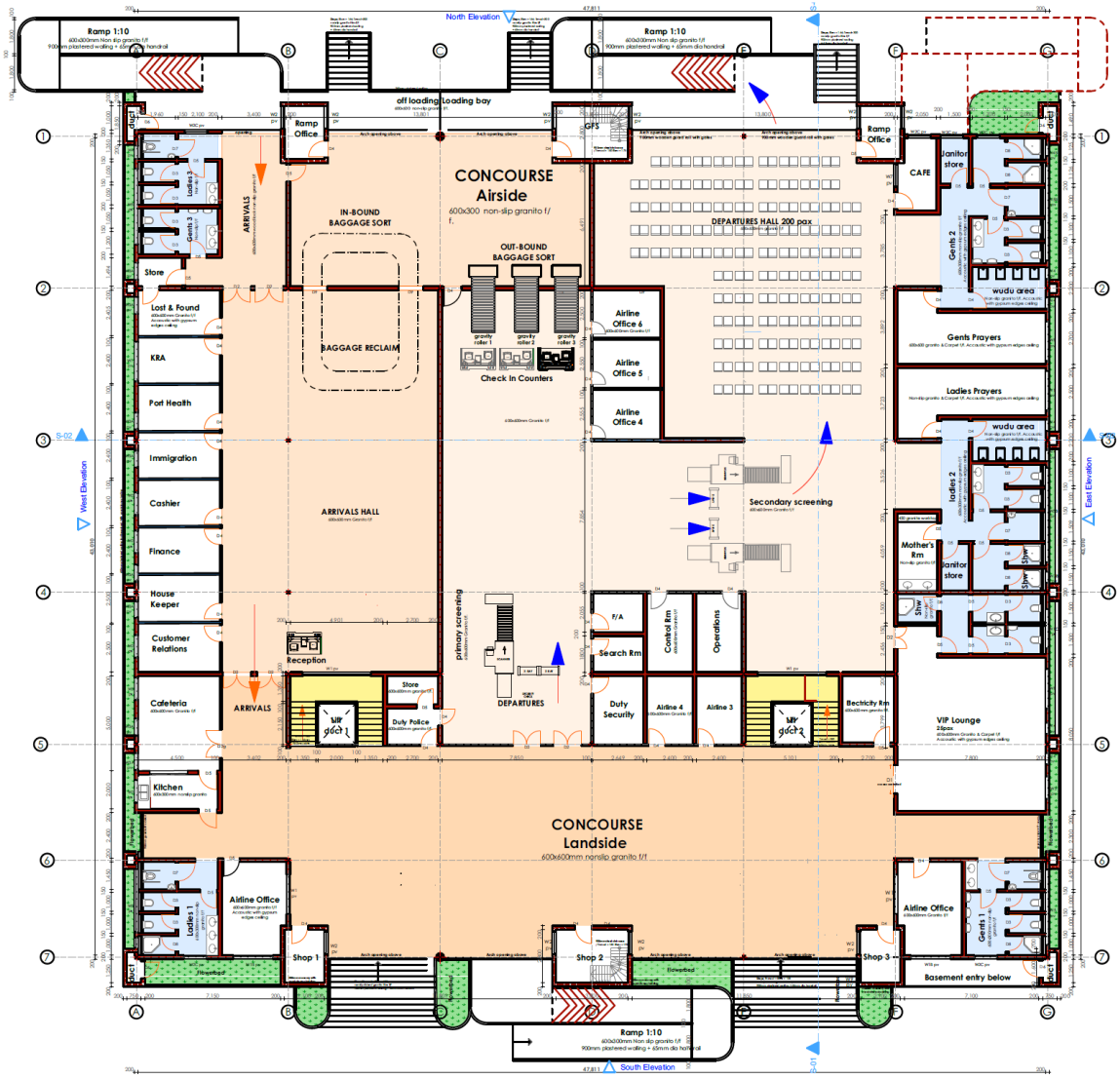
| Designed by: | Drawn by: |
|---|---|
| Arch. J. Achando | A. MINITO |

**Checked by:**
Eng. J. Wagai
Manager (AD&C).

**Approved by:**
Dr. Eng. Meshack Otwaro, PhD.
General Manager (P&ES).

**Date:** MARCH 2025

**Scale:** NTS




# PLINTH AREA = 2,255 SQM

L (--) 003

## GROUND FLOOR

1:230

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**Project Title:**
PROPOSED CONSTRUCTION OF PASSENGER TERMINAL BUILDING, UKUNDA AIRSTRIP

**Job No:**
KAA/ OT/ UKD

**Dwg No.**
PTB-03

**Drawing Title:**
GROUND FLOOR PLAN

| Designed by: | Drawn by: |
|---|---|
| Arch. J. Achando | A. MINITO |

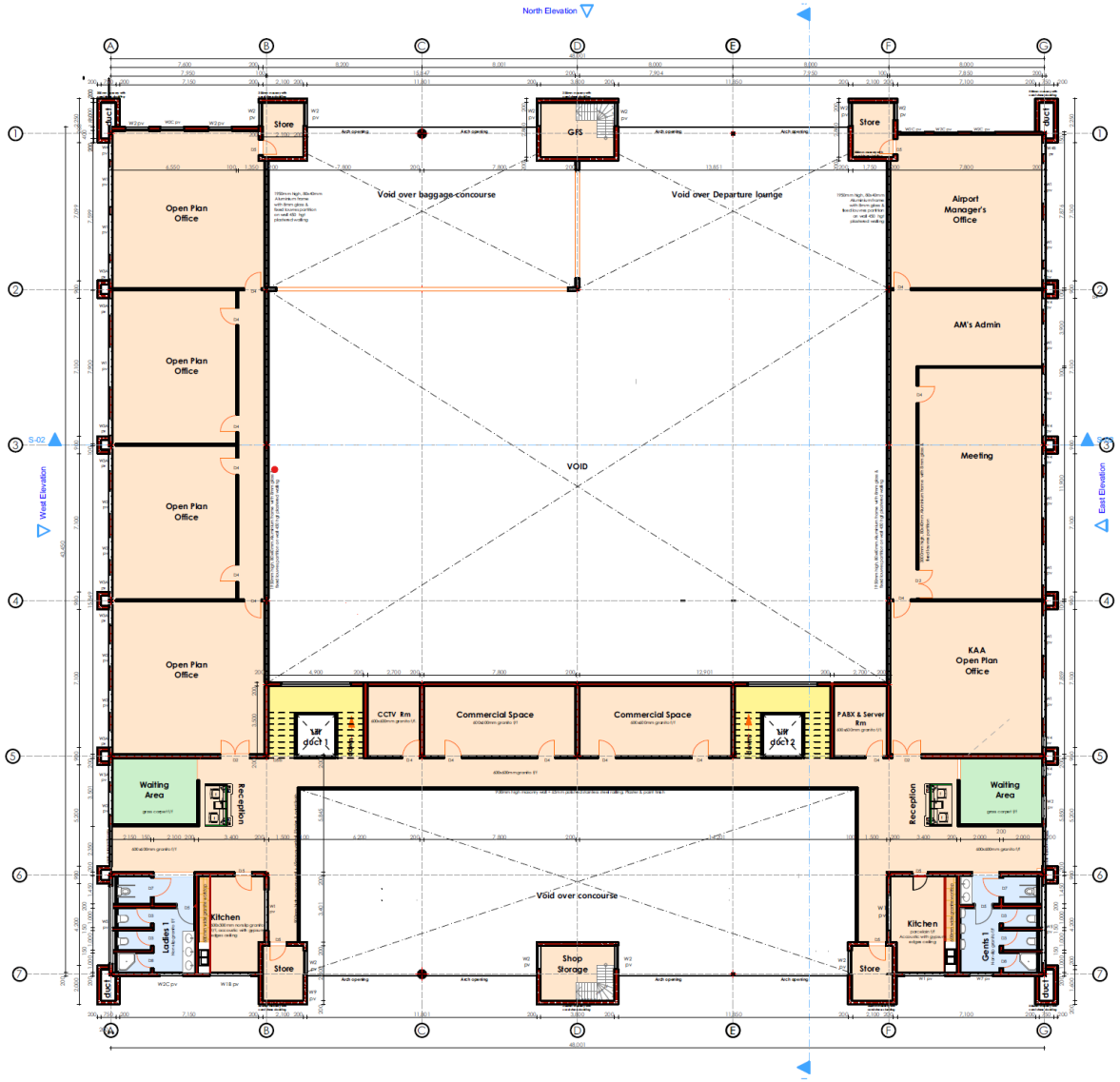
**Checked by:**
Eng. J. Wagai
Manager (AD&C).

**Approved by:**
Dr. Eng. Meshack Otwaro, PhD.
General Manager (P&ES).

**Date:**
MARCH 2025

**Scale:**
NTS

# PLINTH AREA = 885 SQM




L (--) 004 MEZZANINE FLOOR 1:230

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**Project Title:**
PROPOSED CONSTRUCTION OF PASSENGER TERMINAL BUILDING, UKUNDA AIRSTRIP

**Job No:**
KAA/ OT/ UKD

**Dwg No.**
PTB-04

**Drawing Title:**
MEZANINE /UPPER FLOOR PLAN

**Designed by:** Arch. J. Achando
**Drawn by:** A. MINITO

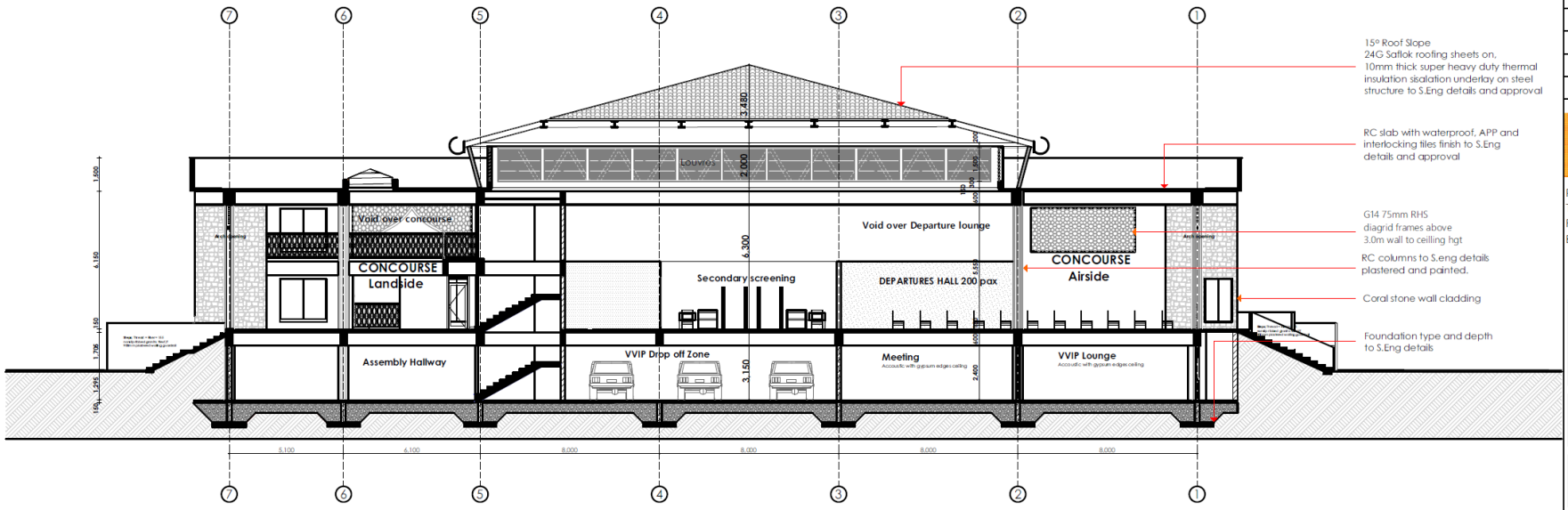
**Checked by:** Eng. J. Wagai
Manager (AD&C).

**Approved by:** Dr. Eng. Meshack Otwaro, PhD.
General Manager (P&ES).

**Date:** MARCH 2025

**Scale:** NTS

# PROPOSED CONSTRUCTION OF PASSENGER TERMINAL BUILDING, UKUNDA AIRSTRIP




**L (--) 005** **SECTION 01** **1:200**



2. All dimensions in mm unless stated should be read and not measured

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7. All drainage Road crossing to be incased in concrete to civil engineer's details.

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Fax: 822078
Email: info@kenyaairports.co.ke

**Project Title:**
PROPOSED CONSTRUCTION OF PASSENGER TERMINAL BUILDING, UKUNDA AIRSTRIP

**Job No:**
KAA/ OT/ UKD

**Dwg No.**

**Drawing Title:**

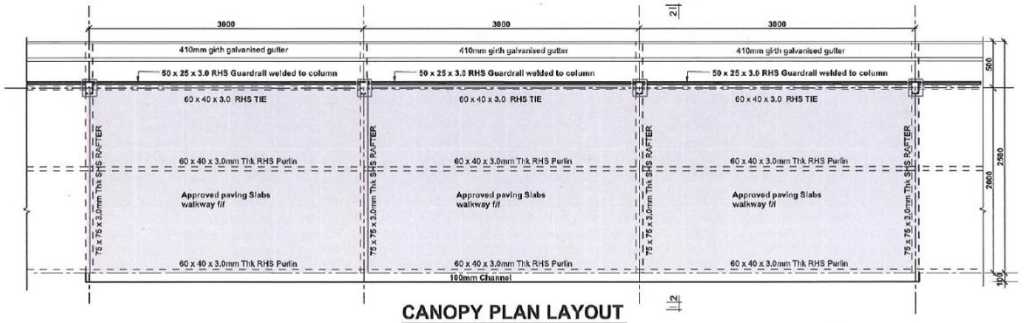
**Designed by:** Arch. J. Achando
**Drawn by:** A. Minito

**Checked by:** Eng. J. Wagai
Manager (AD&C).

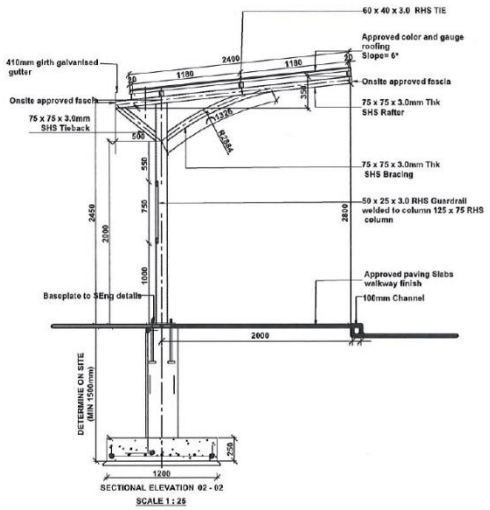
**Approved by:** Dr. Eng. Meshack Otwaro, PhD.
General Manager (P&ES).

**Date:** MARCH 2025

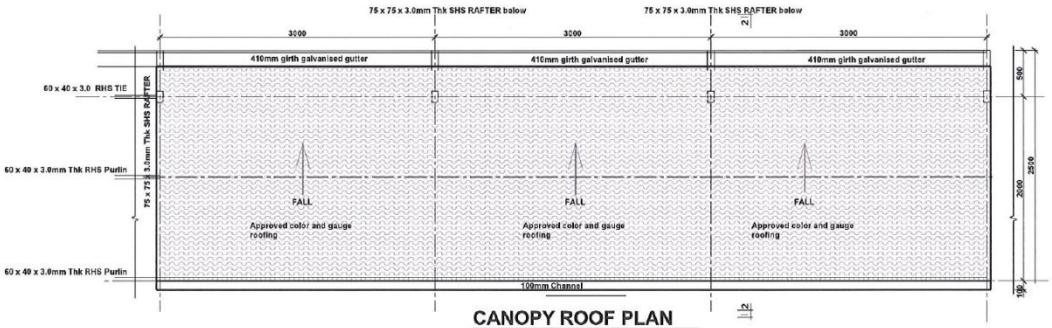
**Scale:**



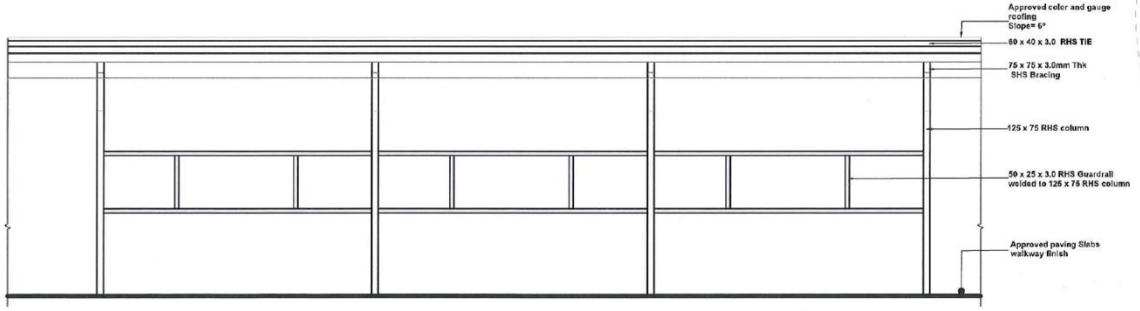

## CANOPY PLAN LAYOUT
SCALE 1 : 25



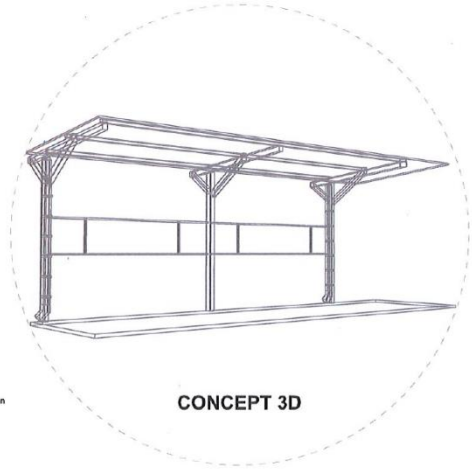

SECTIONAL ELEVATION 02 - 02
SCALE 1 : 25




## CANOPY ROOF PLAN
SCALE 1 : 25




## CANOPY FRONT ELEVATION
SCALE 1 : 25



## CONCEPT 3D

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| No | REVISION | Date |
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Kenya Airports Authority

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Fax: 822078
E.Mail: info@kenyaairports.co.ke

Project:
PROPOSED WALKWAY CANOPY FOR JKIA- T1 to T2

Job No:
KAA/ES/JKIA/1479/B

Dwg No.
L (--).002

Drawing Title:
PLANS, ELEVATION, SECTION

Drawn by:
J.A.A

Checked by:
Eng. R. Mukui

Approved by:
Arch. F. Odawo.
General Manager (P&ES).

Date:
OCT 2019

Scale:
1:25