



REQUEST FOR PROPOSAL

RFP No: 97314

Project: Building of WASH infrastructure in Freetown: 65 water kiosks and 15 public toilets

Country: Sierra Leone

Issued on: 14 December 2022

Contents

SECTION 1. LETTER OF INVITATION.....	5
SECTION 2. INSTRUCTION TO BIDDERS	6
GENERAL PROVISIONS	6
1. Introduction	6
2. Fraud & Corruption, Gifts and Hospitality.....	6
3. Eligibility.....	6
4. Conflict of Interests.....	7
PREPARATION OF PROPOSALS.....	7
5. General Considerations.....	7
6. Cost of Preparation of Proposal.....	7
7. Language.....	7
8. Documents Comprising the Proposal.....	8
9. Documents Establishing the Eligibility and Qualifications of the Bidder.....	8
10. Technical Proposal Format and Content.....	8
11. Financial Proposals	8
12. Proposal Security	8
13. Currencies.....	9
14. Joint Venture, Consortium or Association	9
15. Only One Proposal	10
16. Proposal Validity Period.....	10
17. Extension of Proposal Validity Period	10
18. Clarification of Proposal.....	10
19. Amendment of Proposals	11
20. Alternative Proposals.....	11
21. Pre-Bid Conference	11
SUBMISSION AND OPENING OF PROPOSALS.....	11
22. Submission	11
23. Deadline for Submission of Proposals and Late Proposals.....	13
24. Withdrawal, Substitution, and Modification of Proposals	13
25. Proposal Opening.....	13
EVALUATION OF PROPOSALS.....	13
26. Confidentiality.....	13
27. Evaluation of Proposals.....	13
28. Preliminary Examination	14
29. Evaluation of Eligibility and Qualification	14
30. Evaluation of Technical and Financial Proposals.....	14
31. Due Diligence	15
32. Clarification of Proposals	15
33. Responsiveness of Proposal	15
34. Nonconformities, Reparable Errors and Omissions	16
AWARD OF CONTRACT	16
35. Right to Accept, Reject, Any or All Proposals.....	16
36. Award Criteria	16
37. Debriefing	16
38. Right to Vary Requirements at the Time of Award	16
39. Contract Signature	16
40. Contract Type and General Terms and Conditions	17
41. Performance Security	17
42. Bank Guarantee for Advanced Payment.....	17
43. Liquidated Damages	17
44. Payment Provisions.....	17
45. Vendor Protest.....	17
46. Other Provisions	17
SECTION 3. BID DATA SHEET.....	19

SECTION 4. EVALUATION CRITERIA	22
SECTION 5. TERMS OF REFERENCE	26
PROJECT DESCRIPTION	26
<i>BACKGROUND</i>	26
<i>PROJECT BACKGROUND</i>	26
<i>OBJECTIVE</i>	27
SCOPE OF WORK	27
EXPECTED OUTPUTS	29
INSTITUTIONAL ARRANGEMENT	29
<i>UNITED NATIONS CAPITAL DEVELOPMENT FUND</i>	29
<i>FREETOWN CITY COUNCIL</i>	30
<i>GUMA VALLEY WATER COMPANY (GVWC)</i>	30
DURATION OF THE WORKS	31
LOCATION OF WORKS AND REPORTING REQUIREMENTS	31
<i>LOCATION OF WORKS</i>	
<i>REPORTING REQUIREMENTS</i>	
QUALIFICATIONS OF THE SUCCESSFUL CONTRACTOR	32
<i>HUMAN RESOURCES</i>	33
<i>MATERIAL RESOURCES AND EQUIPMENT</i>	34
SCOPE OF PROPOSAL PRICE AND SCHEDULE OF PAYMENTS	34
<i>LIST OF COMPLETED WORKS</i>	34
<i>TEMPORARY ACCOUNT STATEMENTS</i>	34
<i>FINAL ACCOUNT STATEMENT</i>	ERROR! BOOKMARK NOT DEFINED.
<i>FORCE MAJEURE</i>	
<i>WEATHER FLUCTUATIONS</i>	
<i>TERMINATION OF THE CONTRACT</i>	
<i>TEMPORARY ACCEPTANCE OF THE WORKS</i>	35
<i>WARRANTY PERIOD</i>	35
<i>FINAL ACCEPTANCE OF WORKS</i>	36
RECOMMENDED PRESENTATION OF PROPOSAL	36
CRITERIA FOR SELECTING THE BEST OFFER	36
ANNEXES	37
SECTION 6: RETURNABLE BIDDING FORMS / CHECKLIST	179
FORM A: TECHNICAL PROPOSAL SUBMISSION FORM	180
FORM B: BIDDER INFORMATION FORM	181
FORM C: JOINT VENTURE/CONSORTIUM/ASSOCIATION INFORMATION FORM	182
FORM D: QUALIFICATION FORM	183
FORM E: FORMAT OF TECHNICAL PROPOSAL	185
FORM F: FINANCIAL PROPOSAL SUBMISSION FORM	188
FORM G: FINANCIAL PROPOSAL FORM	189
FORM H: FORM OF PROPOSAL SECURITY	215

Section 1. Letter of Invitation

The United Nations Capital Development Fund (UNCDF) hereby invites you to submit a Proposal to this Request for Proposal (RFP) for the above-referenced subject.

This RFP includes the following documents and the General Terms and Conditions of Contract, which are inserted in the Bid Data Sheet (BDS):

- Section 1: This Letter of Invitation
- Section 2: Instruction to Bidders
- Section 3: Bid Data Sheet (BDS)
- Section 4: Evaluation Criteria
- Section 5: Terms of Reference
- Section 6: Returnable Bidding Forms
 - o Form A: Technical Proposal Submission Form
 - o Form B: Bidder Information Form
 - o Form C: Joint Venture/Consortium/Association Information Form
 - o Form D: Qualification Form
 - o Form E: Format of Technical Proposal
 - o Form F: Financial Proposal Submission Form
 - o Form G: Financial Proposal Form
 - o Form H: Form of Proposal Security (delete this line and the form, if not required as per BDS)

If you are interested in submitting a Proposal in response to this RFP, please prepare your Proposal in accordance with the requirements and procedure as set out in this RFP and submit it by the Deadline for Submission of Proposals set out in Bid Data Sheet.

Please acknowledge receipt of this RFP by sending an email to Uncdf.procurement@uncdf.org, indicating whether you intend to submit a Proposal or otherwise. You may also utilize the "Accept Invitation" function in the e-Tendering system, where applicable. This will enable you to receive amendments or updates to the RFP. Should you require further clarifications, kindly communicate with the contact person/s identified in the attached Bid Data Sheet as the focal point for queries on this RFP.

UNCDF looks forward to receiving your Proposal, and thank you in advance for your interest in UNCDF procurement opportunities.

Issued by
UNCDF Procurement Team
14 December 2022

Section 2. Instruction to Bidders

GENERAL PROVISIONS	
Introduction	1.1 Bidders shall adhere to all the requirements of this RFP, including any amendments in writing by UNCDF. This RFP is conducted in accordance with the UNCDF Programme and Operations Policies and Procedures (POPP) on Contracts and Procurement, which can be accessed at https://popp.undp.org/SitePages/POPPBSUnit.aspx?TermID=254a9f96-b883-476a-8ef8-e81f93a2b38d 1.2 Any Proposal submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Proposal by UNCDF. UNCDF is under no obligation to award a contract to any Bidder as a result of this RFP. 1.3 As part of the bid, it is desired that the Bidder registers at the United Nations Global Marketplace (UNGM) website (www.ungm.org). The Bidder may still submit a bid even if not registered with the UNGM. However, if the Bidder is selected for contract award, the Bidder must register on the UNGM prior to contract signature.
Fraud & Corruption, Gifts and Hospitality	1.4 UNCDF strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of UNCDF vendors and requires all bidders/vendors observe the highest standard of ethics during the procurement process and contract implementation. UNCDF's Anti-Fraud Policy can be found at http://www.undp.org/content/UNCDF/en/home/operations/accountability/audit/office_of_audit_andinvestigation.html#anti 1.5 Bidders/vendors shall not offer gifts or hospitality of any kind to UNCDF staff members including recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation, or invitations to extravagant lunches or dinners. 1.6 In pursuance of this policy, UNCDF (a) Shall reject a proposal if it determines that the selected bidder has engaged in any corrupt or fraudulent practices in competing for the contract in question; (b) Shall declare a vendor ineligible, either indefinitely or for a stated period of time, to be awarded a contract if at any time it determines that the vendor has engaged in any corrupt or fraudulent practices in competing for, or in executing a UNCDF contract. 1.7 All Bidders must adhere to the UN Supplier Code of Conduct, which may be found at https://www.un.org/Depts/ptd/sites/www.un.org.Depts.ptd/files/files/attachment/page/pdf/unscoc/conduct_english.pdf
Eligibility	1.8 A vendor should not be suspended, debarred, or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization. Vendors are therefore required to disclose to UNCDF whether they are subject to any sanction or temporary suspension imposed by these organizations. 1.9 It is the Bidder's responsibility to ensure that its employees, joint venture members, sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by UNCDF.

Conflict of Interests	1.10 Bidders must strictly avoid conflicts with other assignments or their own interests, and act without consideration for future work. Bidders found to have a conflict of interest shall be disqualified. Without limitation on the generality of the above, Bidders, and any of their affiliates, shall be considered to have a conflict of interest with one or more parties in this solicitation process, if they: a) Are or have been associated in the past, with a firm or any of its affiliates which have been engaged by UNCDF to provide services for the preparation of the design, specifications, Terms of Reference, cost analysis/estimation, and other documents to be used for the procurement of the goods and services in this selection process; b) Were involved in the preparation and/or design of the programme/project related to the services requested under this RFP; or c) Are found to be in conflict for any other reason, as may be established by, or at the discretion of UNCDF. 1.11 In the event of any uncertainty in the interpretation of a potential conflict of interest, Bidders must disclose to UNCDF, and seek UNCDF's confirmation on whether or not such a conflict exists. 1.12 Similarly, the Bidders must disclose in their proposal their knowledge of the following: a) If the owners, part-owners, officers, directors, controlling shareholders, of the bidding entity or key personnel are family members of UNCDF staff involved in the procurement functions and/or the Government of the country or any Implementing Partner receiving services under this RFP; and b) All other circumstances that could potentially lead to actual or perceived conflict of interest, collusion or unfair competition practices. Failure to disclose such an information may result in the rejection of the proposal or proposals affected by the non-disclosure. 1.13 The eligibility of Bidders that are wholly or partly owned by the Government shall be subject to UNCDF's further evaluation and review of various factors such as being registered, operated and managed as an independent business entity, the extent of Government ownership/share, receipt of subsidies, mandate and access to information in relation to this RFP, among others. Conditions that may lead to undue advantage against other Bidders may result in the eventual rejection of the Proposal.
PREPARATION OF PROPOSALS	
General Considerations	1.14 In preparing the Proposal, the Bidder is expected to examine the RFP in detail. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal. 1.15 The Bidder will not be permitted to take advantage of any errors or omissions in the RFP. Should such errors or omissions be discovered, the Bidder must notify the UNCDF.
Cost of Preparation of Proposal	1.16 The Bidder shall bear any and all costs related to the preparation and/or submission of the Proposal, regardless of whether its Proposal was selected or not. UNCDF shall not be responsible or liable for those costs, regardless of the conduct or outcome of the procurement process.
Language	1.17 The Proposal, as well as any and all related correspondence exchanged by the Bidder and UNCDF, shall be written in the language (s) specified in the BDS.

Documents Comprising the Proposal	1.18 The Proposal shall comprise of the following documents: c) Documents Establishing the Eligibility and Qualifications of the Bidder; d) Technical Proposal; e) Financial Proposal; f) Proposal Security, if required by BDS; g) Any attachments and/or appendices to the Proposal.
Documents Establishing the Eligibility and Qualifications of the Bidder	1.19 The Bidder shall furnish documentary evidence of its status as an eligible and qualified vendor, using the Forms provided under Section 6 and providing documents required in those forms. In order to award a contract to a Bidder, its qualifications must be documented to UNCDF's satisfaction.
Technical Proposal Format and Content	1.20 The Bidder is required to submit a Technical Proposal using the Standard Forms and templates provided in Section 6 of the RFP. 1.21 The Technical Proposal shall not include any price or financial information. A Technical Proposal containing material financial information may be declared non-responsive. 1.22 Samples of items, when required as per Section 5, shall be provided within the time specified and unless otherwise specified by UNCDF, and at no expense to UNCDF 1.23 When applicable and required as per Section 5, the Bidder shall describe the necessary training programme available for the maintenance and operation of the services and/or equipment offered as well as the cost to the UNCDF. Unless otherwise specified, such training as well as training materials shall be provided in the language of the Bid as specified in the BDS.
Financial Proposals	1.24 The Financial Proposal shall be prepared using the Standard Form provided in Section 6 of the RFP. It shall list all major cost components associated with the services, and the detailed breakdown of such costs. 1.25 Any output and activities described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, as well as in the final total price. 1.26 Prices and other financial information must not be disclosed in any other place except in the financial proposal.
Proposal Security	1.27 A Proposal Security, if required by BDS, shall be provided in the amount and form indicated in the BDS. The Proposal Security shall be valid up to thirty (30) days after the final date of validity of the Proposal. 1.28 The Proposal Security shall be included along with the Technical Proposal. If Proposal Security is required by the RFP but is not found along with the Technical Proposal, the Proposal shall be rejected. 1.29 If the Proposal Security amount or its validity period is found to be less than what is required by UNCDF, UNCDF shall reject the Proposal. 1.30 In the event an electronic submission is allowed in the BDS, Bidders shall include a copy of the Bid Security in their proposal and the original of the Proposal Security must be sent via courier or hand delivery as per the instructions in BDS. 1.31 The Proposal Security may be forfeited by UNCDF, and the Proposal rejected, in the event of any one or combination, of the following conditions:

	a) If the Bidder withdraws its offer during the period of the Proposal Validity specified in the BDS, or; b) In the event that the successful Bidder fails: i. to sign the Contract after UNCDF has issued an award; or 1.32 to furnish the Performance Security, insurances, or other documents that UNCDF may require as a condition precedent to the effectivity of the contract that may be awarded to the Bidder.
Currencies	1.33 All prices shall be quoted in the currency or currencies indicated in the BDS. Where Proposals are quoted in different currencies, for the purposes of comparison of all Proposals: a) UNCDF will convert the currency quoted in the Proposal into the UNCDF preferred currency, in accordance with the prevailing UN operational rate of exchange on the last day of submission of Proposals; and b) In the event that UNCDF selects a proposal for award that is quoted in a currency different from the preferred currency in the BDS, UNCDF shall reserve the right to award the contract in the currency of UNCDF's preference, using the conversion method specified above.
Joint Venture, Consortium or Association	1.34 If the Bidder is a group of legal entities that will form or have formed a Joint Venture (JV), Consortium or Association for the Proposal, they shall confirm in their Proposal that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the JV, Consortium or Association jointly and severally, which shall be evidenced by a duly notarized Agreement among the legal entities, and submitted with the Proposal; and (ii) if they are awarded the contract, the contract shall be entered into, by and between UNCDF and the designated lead entity, who shall be acting for and on behalf of all the member entities comprising the joint venture. 1.35 After the Deadline for Submission of Proposal, the lead entity identified to represent the JV, Consortium or Association shall not be altered without the prior written consent of UNCDF. 1.36 The lead entity and the member entities of the JV, Consortium or Association shall abide by the provisions of Clause 9 herein in respect of submitting only one proposal. 1.37 The description of the organization of the JV, Consortium or Association must clearly define the expected role of each of the entity in the joint venture in delivering the requirements of the RFP, both in the Proposal and the JV, Consortium or Association Agreement. All entities that comprise the JV, Consortium or Association shall be subject to the eligibility and qualification assessment by UNCDF. 1.38 A JV, Consortium or Association in presenting its track record and experience should clearly differentiate between: a) Those that were undertaken together by the JV, Consortium or Association; and b) Those that were undertaken by the individual entities of the JV, Consortium or Association. 1.39 Previous contracts completed by individual experts working privately but who are permanently or were temporarily associated with any of the member firms cannot be claimed as the experience of the JV, Consortium or Association or those of its members, but should only be claimed by the individual experts themselves in their

	presentation of their individual credentials. 1.40 JV, Consortium or Associations are encouraged for high value, multi-sectoral requirements when the spectrum of expertise and resources required may not be available within one firm.
Only One Proposal	1.41 The Bidder (including the individual members of any Joint Venture) shall submit only one Proposal, either in its own name or as part of a Joint Venture. 1.42 Proposals submitted by two (2) or more Bidders shall all be rejected if they are found to have any of the following: a) they have at least one controlling partner, director or shareholder in common; or b) any one of them receive or have received any direct or indirect subsidy from the other/s; or c) they have the same legal representative for purposes of this RFP; or d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about, or influence on the Proposal of, another Bidder regarding this RFP process; e) they are subcontractors to each other's Proposal, or a subcontractor to one Proposal also submits another Proposal under its name as lead Bidder; or f) some key personnel proposed to be in the team of one Bidder participates in more than one Proposal received for this RFP process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Proposal.
Proposal Validity Period	1.43 Proposals shall remain valid for the period specified in the BDS, commencing on the Deadline for Submission of Proposals. A Proposal valid for a shorter period may be rejected by UNCDF and rendered non-responsive. 1.44 During the Proposal validity period, the Bidder shall maintain its original Proposal without any change, including the availability of the Key Personnel, the proposed rates and the total price.
Extension of Proposal Validity Period	1.45 In exceptional circumstances, prior to the expiration of the proposal validity period, UNCDF may request Bidders to extend the period of validity of their Proposals. The request and the responses shall be made in writing, and shall be considered integral to the Proposal. 1.46 If the Bidder agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal. 1.47 The Bidder has the right to refuse to extend the validity of its Proposal, and in which case, such Proposal will not be further evaluated.
Clarification of Proposal	1.48 Bidders may request clarifications on any of the RFP documents no later than the date indicated in the BDS. Any request for clarification must be sent in writing in the manner indicated in the BDS. If inquiries are sent other than specified channel, even if they are sent to a UNCDF staff member, UNCDF shall have no obligation to respond or confirm that the query was officially received. 1.49 UNCDF will provide the responses to clarifications through the method specified in the BDS. 1.50 UNCDF shall endeavor to provide responses to clarifications in an expeditious

	manner, but any delay in such response shall not cause an obligation on the part of UNCDF to extend the submission date of the Proposals, unless UNCDF deems that such an extension is justified and necessary.
Amendment of Proposals	1.51 At any time prior to the deadline of Proposal submission, UNCDF may for any reason, such as in response to a clarification requested by a Bidder, modify the RFP in the form of an amendment to the RFP. Amendments will be made available to all prospective bidders. 1.52 If the amendment is substantial, UNCDF may extend the Deadline for submission of proposal to give the Bidders reasonable time to incorporate the amendment into their Proposals.
Alternative Proposals	1.53 Unless otherwise specified in the BDS, alternative proposals shall not be considered. If submission of alternative proposal is allowed by BDS, a Bidder may submit an alternative proposal, but only if it also submits a proposal conforming to the RFP requirements. UNCDF shall only consider the alternative proposal offered by the Bidder whose conforming proposal ranked the highest as per the specified evaluation method. Where the conditions for its acceptance are met, or justifications are clearly established, UNCDF reserves the right to award a contract based on an alternative proposal. 1.54 If multiple/alternative proposals are being submitted, they must be clearly marked as "Main Proposal" and "Alternative Proposal"
Pre-Bid Conference	1.55 When appropriate, a Bidder's conference will be conducted at the date, time and location specified in the BDS. All Bidders are encouraged to attend. Non-attendance, however, shall not result in disqualification of an interested Bidder. Minutes of the Bidder's conference will be disseminated on the procurement website and shared by email or on the e-Tendering platform as specified in the BDS. No verbal statement made during the conference shall modify the terms and conditions of the RFP, unless specifically incorporated in the Minutes of the Bidder's Conference or issued/posted as an amendment to RFP.
SUBMISSION AND OPENING OF PROPOSALS	
Submission	1.56 The Bidder shall submit a duly signed and complete Proposal comprising the documents and forms in accordance with the requirements in the BDS. The submission shall be in the manner specified in the BDS. 1.57 The Proposal shall be signed by the Bidder or person(s) duly authorized to commit the Bidder. The authorization shall be communicated through a document evidencing such authorization issued by the legal representative of the bidding entity, or a Power of Attorney, accompanying the Proposal. 1.58 Bidders must be aware that the mere act of submission of a Proposal, in and of itself, implies that the Bidder fully accepts the UNCDF General Contract Terms and Conditions.
Hard copy (manual) submission	1.59 Hard copy (manual) submission by courier or hand delivery allowed or specified in the BDS shall be governed as follows: g) The signed Proposal shall be marked "Original", and its copies marked "Copy" as appropriate. The number of copies is indicated in the BDS. All copies shall be

	http://www.undp.org/content/UNCDF/en/home/operations/procurement/business/procurement-notice/resources/
Deadline for Submission of Proposals and Late Proposals	1.62 Complete Proposals must be received by UNCDF in the manner, and no later than the date and time, specified in the BDS. UNCDF shall only recognize the date and time that the bid was received by UNCDF 1.63 UNCDF shall not consider any Proposal that is submitted after the deadline for the submission of Proposals.
Withdrawal, Substitution, and Modification of Proposals	1.64 A Bidder may withdraw, substitute or modify its Proposal after it has been submitted at any time prior to the deadline for submission. 1.65 Manual and Email submissions: A bidder may withdraw, substitute or modify its Proposal by sending a written notice to UNCDF, duly signed by an authorized representative, and shall include a copy of the authorization (or a Power of Attorney). The corresponding substitution or modification of the Proposal, if any, must accompany the respective written notice. All notices must be submitted in the same manner as specified for submission of proposals, by clearly marking them as "WITHDRAWAL" "SUBSTITUTION," or "MODIFICATION" 1.66 E-Tendering: A Bidder may withdraw, substitute or modify its Proposal by Canceling, Editing, and re-submitting the proposal directly in the system. It is the responsibility of the Bidder to properly follow the system instructions, duly edit and submit a substitution or modification of the Proposal as needed. Detailed instructions on how to cancel or modify a Proposal directly in the system are provided in Bidder User Guide and Instructional videos. 1.67 Proposals requested to be withdrawn shall be returned unopened to the Bidders (only for manual submissions), except if the bid is withdrawn after the bid has been opened
Proposal Opening	1.68 There is no public bid opening for RFPs. UNCDF shall open the Proposals in the presence of an ad-hoc committee formed by UNCDF, consisting of at least two (2) members. In the case of e-Tendering submission, bidders will receive an automatic notification once their proposal is opened.
EVALUATION OF PROPOSALS	
Confidentiality	1.69 Information relating to the examination, evaluation, and comparison of Proposals, and the recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process, even after publication of the contract award. 1.70 Any effort by a Bidder or anyone on behalf of the Bidder to influence UNCDF in the examination, evaluation and comparison of the Proposals or contract award decisions may, at UNCDF's decision, result in the rejection of its Proposal and may be subject to the application of prevailing UNCDF's vendor sanctions procedures.
Evaluation of Proposals	1.71 The Bidder is not permitted to alter or modify its Proposal in any way after the proposal submission deadline except as permitted under Clause 24 of this RFP. UNCDF will conduct the evaluation solely on the basis of the submitted Technical and Financial Proposals.

	1.72 Evaluation of proposals is made of the following steps: i) Preliminary Examination j) Minimum Eligibility and Qualification (if pre-qualification is not done) k) Evaluation of Technical Proposals l) Evaluation of Financial Proposals
Preliminary Examination	1.73 UNCDF shall examine the Proposals to determine whether they are complete with respect to minimum documentary requirements, whether the documents have been properly signed, and whether the Proposals are generally in order, among other indicators that may be used at this stage. UNCDF reserves the right to reject any Proposal at this stage.
Evaluation of Eligibility and Qualification	1.74 Eligibility and Qualification of the Bidder will be evaluated against the Minimum Eligibility/Qualification requirements specified in the Section 4 (Evaluation Criteria). 1.75 In general terms, vendors that meet the following criteria may be considered qualified: a) They are not included in the UN Security Council 1267/1989 Committee's list of terrorists and terrorist financiers, and in UNCDF's ineligible vendors' list; b) They have a good financial standing and have access to adequate financial resources to perform the contract and all existing commercial commitments, c) They have the necessary similar experience, technical expertise, production capacity where applicable, quality certifications, quality assurance procedures and other resources applicable to the provision of the services required; d) They are able to comply fully with UNCDF General Terms and Conditions of Contract; e) They do not have a consistent history of court/arbitral award decisions against the Bidder; and f) They have a record of timely and satisfactory performance with their clients.
Evaluation of Technical and Financial Proposals	1.76 The evaluation team shall review and evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference and other RFP documents, applying the evaluation criteria, sub-criteria, and point system specified in the Section 4 (Evaluation Criteria). A Proposal shall be rendered non-responsive at the technical evaluation stage if it fails to achieve the minimum technical score indicated in the BDS. When necessary and if stated in the BDS, UNCDF may invite technically responsive bidders for a presentation related to their technical proposals. The conditions for the presentation shall be provided in the bid document where required. 1.77 In the second stage, only the Financial Proposals of those Bidders who achieve the minimum technical score will be opened for evaluation. The Financial Proposals corresponding to Technical Proposals that were rendered non-responsive shall remain unopened, and, in the case of manual submission, be returned to the Bidder unopened. For emailed Proposals and e-tendering submissions, UNCDF will not request for the password of the Financial Proposals of bidders whose Technical Proposal were found not responsive. 1.78 The evaluation method that applies for this RFP shall be as indicated in the BDS, which may be either of two (2) possible methods, as follows: (a) the lowest priced method which selects the lowest evaluated financial proposal of the technically responsive Bidders; or (b) the combined scoring method which will be based on a combination of the technical and financial score.

	1.79 When the BDS specifies a combined scoring method, the formula for the rating of the Proposals will be as follows: <u>Rating the Technical Proposal (TP):</u> TP Rating = (Total Score Obtained by the Offer / Max. Obtainable Score for TP) x 100 <u>Rating the Financial Proposal (FP):</u> FP Rating = (Lowest Priced Offer / Price of the Offer Being Reviewed) x 100 <u>Total Combined Score:</u> Combined Score = (TP Rating) x (Weight of TP, e.g. 70%) + (FP Rating) x (Weight of FP, e.g., 30%)
Due Diligence	1.80 UNCDF reserves the right to undertake a due diligence exercise, also called post qualification, aimed at determining to its satisfaction, the validity of the information provided by the Bidder. Such exercise shall be fully documented and may include, but need not be limited to, all or any combination of the following: a) Verification of accuracy, correctness and authenticity of information provided by the Bidder; b) Validation of extent of compliance to the RFP requirements and evaluation criteria based on what has so far been found by the evaluation team; c) Inquiry and reference checking with Government entities with jurisdiction on the Bidder, or with previous clients, or any other entity that may have done business with the Bidder; d) Inquiry and reference checking with previous clients on the performance on on-going or contracts completed, including physical inspections of previous works, as necessary; e) Physical inspection of the Bidder's offices, branches or other places where business transpires, with or without notice to the Bidder; f) Other means that UNCDF may deem appropriate, at any stage within the selection process, prior to awarding the contract.
Clarification of Proposals	1.81 To assist in the examination, evaluation and comparison of Proposals, UNCDF may, at its discretion, ask any Bidder for a clarification of its Proposal. 1.82 UNCDF's request for clarification and the response shall be in writing and no change in the prices or substance of the Proposal shall be sought, offered, or permitted, except to provide clarification, and confirm the correction of any arithmetic errors discovered by UNCDF in the evaluation of the Proposals, in accordance with RFP. 1.83 Any unsolicited clarification submitted by a Bidder in respect to its Proposal, which is not a response to a request by UNCDF, shall not be considered during the review and evaluation of the Proposals.
Responsiveness of Proposal	1.84 UNCDF's determination of a Proposal's responsiveness will be based on the contents of the Proposal itself. A substantially responsive Proposal is one that conforms to all the terms, conditions, TOR and other requirements of the RFP without material deviation, reservation, or omission. 1.85 If a Proposal is not substantially responsive, it shall be rejected by UNCDF and may

	not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.
Nonconformities, Reparable Errors and Omissions	1.86 Provided that a Proposal is substantially responsive, UNCDF may waive any non-conformities or omissions in the Proposal that, in the opinion of UNCDF, do not constitute a material deviation. 1.87 UNCDF may request the Bidder to submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Proposal related to documentation requirements. Such omission shall not be related to any aspect of the price of the Proposal. Failure of the Bidder to comply with the request may result in the rejection of its Proposal. 1.88 For Financial Proposal that has been opened, UNCDF shall check and correct arithmetical errors as follows: a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of UNCDF there is an obvious misplacement of the decimal point in the unit price; in which case the line item total as quoted shall govern and the unit price shall be corrected; b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail. 1.89 If the Bidder does not accept the correction of errors made by UNCDF, its Proposal shall be rejected.
AWARD OF CONTRACT	
Right to Accept, Reject, Any or All Proposals	1.90 UNCDF reserves the right to accept or reject any Proposal, to render any or all of the Proposals as non-responsive, and to reject all Proposals at any time prior to award of contract, without incurring any liability, or obligation to inform the affected Bidder(s) of the grounds for UNCDF's action. UNCDF shall not be obliged to award the contract to the lowest priced offer.
Award Criteria	1.91 Prior to expiration of the proposal validity, UNCDF shall award the contract to the qualified Bidder based on the award criteria indicated in the BDS.
Debriefing	1.92 In the event that a Bidder is unsuccessful, the Bidder may request a debriefing from UNCDF. The purpose of the debriefing is to discuss the strengths and weaknesses of the Bidder's submission, in order to assist the Bidder in improving its future proposals for UNCDF procurement opportunities. The content of other proposals and how they compare to the Bidder's submission shall not be discussed.
Right to Vary Requirements at the Time of Award	1.93 At the time of award of Contract, UNCDF reserves the right to vary the quantity of services and/or goods, by up to a maximum twenty-five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions.
Contract Signature	1.94 Within fifteen (15) days from the date of receipt of the Contract, the successful Bidder shall sign and date the Contract and return it to UNCDF. Failure to do so may

	constitute sufficient grounds for the annulment of the award, and forfeiture of the Proposal Security, if any, and on which event, UNCDF may award the Contract to the Second Ranked Bidder or call for new Proposals.
Contract Type and General Terms and Conditions	1.95 The types of Contract to be signed and the applicable UNCDF Contract General Terms and Conditions, as specified in BDS, can be accessed at http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html
Performance Security	1.96 40.1 A performance security, if required in BDS, shall be provided in the amount specified in BDS and form available at https://popp.undp.org/layouts/15/WopiFrame.aspx?sourcedoc=/UNCDF POPP DOCUMENT LIBRARY/Public/PSU Solicitation Performance%20Guarantee%20Form.docx&action=default within fifteen (15) days of the contract signature by both parties. Where a performance security is required, the receipt of the performance security by UNCDF shall be a condition for rendering the contract effective.
Bank Guarantee for Advanced Payment	1.97 Except when the interests of UNCDF so require, it is UNCDF's preference to make no advance payment(s) (i.e., payments without having received any outputs). If an advance payment is allowed as per BDS, and exceeds 20% of the total contract price, or USD 30,000, whichever is less, the Bidder shall submit a Bank Guarantee in the full amount of the advance payment in the form available at https://popp.undp.org/layouts/15/WopiFrame.aspx?sourcedoc=/UNCDF POPP DOCUMENT LIBRARY/Public/PSU Contract%20Management%20Payment%20and%20Taxes Advanced%20Payment%20Guarantee%20Form.docx&action=default
Liquidated Damages	1.98 If specified in BDS, UNCDF shall apply Liquidated Damages resulting from the Contractor's delays or breach of its obligations as per the Contract.
Payment Provisions	1.99 Payment will be made only upon UNCDF's acceptance of the work performed. The terms of payment shall be within thirty (30) days, after receipt of invoice and certification of acceptance of work issued by the proper authority in UNCDF with direct supervision of the Contractor. Payment will be effected by bank transfer in the currency of contract.
Vendor Protest	1.100 UNCDF's vendor protest procedure provides an opportunity for appeal to those persons or firms not awarded a contract through a competitive procurement process. In the event that a Bidder believes that it was not treated fairly, the following link provides further details regarding UNCDF vendor protest procedures: http://www.undp.org/content/UNCDF/en/home/operations/procurement/business/protest-and-sanctions.html
Other Provisions	1.101 In the event that the Bidder offers a lower price to the host Government (e.g. General Services Administration (GSA) of the federal government of the United States of America) for similar services, UNCDF shall be entitled to same lower price. The UNCDF General Terms and Conditions shall have precedence. 1.102 UNCDF is entitled to receive the same pricing offered by the same Contractor in contracts with the United Nations and/or its Agencies. The UNCDF General Terms and Conditions shall have precedence. 1.103 The United Nations has established restrictions on employment of (former) UN staff who have been involved in the procurement process as per bulletin ST/SGB/2006/15

Section 3. Bid Data Sheet

The following data for the services to be procured shall complement, supplement, or amend the provisions in the Request for Proposals. In the case of a conflict between the Instructions to Bidders, the Data Sheet, and other annexes or references attached to the Data Sheet, the provisions in the Data Sheet shall prevail.

BDS No.	Ref. to Section.2	Data	Specific Instructions / Requirements
1	7	Language of the Proposal	English
2		Submitting Proposals for Parts or sub-parts of the TOR (partial bids)	Not Allowed
3	20	Alternative Proposals	Shall not be considered
4	21	Pre-proposal conference	Will be Conducted Zoom link for the virtual meeting shall be posted in the advertisement site. The UNDP focal point for the arrangement is: Alfred Akibo-Betts E-mail: alfred.akibo-betts@uncdf.org
5	10	Proposal Validity Period	120 days
6	14	Bid Security	Required in the amount of USD 10% of the submitted contract price Acceptable Forms of Bid Security Bank Guarantee (See Section 8 for template)
7	41	Advanced Payment upon signing of contract	Allowed up to a maximum of 10% of contract value
8	42	Liquidated Damages	Will not be imposed
9	40	Performance Security	Required in the amount of 10% of the total contract price, which shall be held by UNCDF, and will be released to the Contractor as

			soon as the following actions are completed : (a) UNCDF's issuance of the Certificate of Completion of All Works to the Contractor; and (b) receipt by UNCDF of a bank guarantee in the amount of 3% of the contract amount as security for the defects liability period of 12 months.
10	18	Currency of Proposal	United States Dollar
11	31	Deadline for submitting requests for clarifications/ questions	15 days before the submission deadline
12	31	Contact Details for submitting clarifications/questions	Focal Person in UNCDF: UNCDF Procurement E-mail address: uncdf.procurement@uncdf.org
13	18, 19 and 21	Manner of Disseminating Supplemental Information to the RFP and responses/clarifications to queries	Posted directly to the same site as the advertisement for this tender. Bidders are encouraged to visit the site frequently
14	23	Deadline for Submission	31 December 2022, 11:59 pm, UTC
14	22	Allowable Manner of Submitting Proposals	x Submission by email
15	22	Proposal Submission Address	uncdf.procurement@uncdf.org
16	22	Electronic submission (email or eTendering) requirements	▪ Format: PDF files only ▪ File names must be maximum 60 characters long and must not contain any letter or special character other than from Latin alphabet/keyboard. ▪ All files must be free of viruses and not corrupted. ▪ Password for technical proposal <u>must</u> not be provided to UNCDF until the date as indicated in No. 14 (<i>for email submission only</i>) ▪ Password for financial proposal <u>must</u> not be provided to UNCDF until requested by UNCDF ▪ Max. File Size per transmission: 35 MB Mandatory subject of email: RFP/ UNCDF/ 97314 Building of WASH infrastructure in Freetown: 65 water kiosks and 15 public toilets ▪ Documents which are required in original (e.g. Proposal Security) should be sent to the below address with a PDF copy submitted as part of the electronic submission:

17	27 36	Evaluation Method for the Award of Contract	Combined Scoring Method, using the 70%-30% distribution for technical and financial proposals respectively The minimum technical score required to pass technical review is 70%.
18		Expected date for commencement of Contract	<i>February 15, 2023</i>
19		Maximum expected duration of contract	18 months
20	35	UNCDF will award the contract to:	One Proposer Only
21	39	Type of Contract	Purchase Order and Contract for Goods and Services for UNDP http://www.UNCDF.org/content/UNCDF/en/home/procurement/business/how-we-buy.html
22	39	UNCDF Contract Terms and Conditions that will apply	UNDP General Terms and Conditions for Mixed Goods and Services http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html
23		Other Information Related to the RFP	<i>[All other instructions and information not yet mentioned so far in this Data Sheet but are relevant to the RFP must be cited here, and any further entries that may be added below this table row]</i>

Section 4. Evaluation Criteria

Preliminary Examination Criteria

Proposals will be examined to determine whether they are complete and submitted in accordance with RFP requirements as per below criteria on a Yes/No basis:

- Appropriate signatures
- Power of Attorney
- Minimum documents provided
- Technical and Financial Proposals submitted separately
- Bid Validity
- Bid Security submitted as per RFP requirements with compliant validity period

Minimum Eligibility and Qualification Criteria

Eligibility and Qualification will be evaluated on Pass/Fail basis.

If the Proposal is submitted as a Joint Venture/Consortium/Association, each member should meet minimum criteria, unless otherwise specified in the criterion.

Subject	Criteria	Document Submission requirement
ELIGIBILITY		
Legal Status	Vendor is a legally registered entity.	Form B: Bidder Information Form
Eligibility	Vendor is not suspended, nor debarred, nor otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization in accordance with ITB clause 3.	Form A: Technical Proposal Submission Form
Conflict of Interest	No conflicts of interest in accordance with ITB clause 4.	Form A: Technical Proposal Submission Form
Bankruptcy	Not declared bankruptcy, not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against the vendor that could impair its operations in the foreseeable future.	Form A: Technical Proposal Submission Form
QUALIFICATION		
History of Non-Performing Contracts¹	Non-performance of a contract did not occur as a result of contractor default for the last 3 years.	Form D: Qualification Form
Litigation History	No consistent history of court/arbitral award decisions against the Bidder for the last 3 years.	Form D: Qualification Form
Previous Experience	Minimum 10 years of relevant experience.	Form D: Qualification Form
	Minimum 03 contracts with similar nature and complexity implemented over the last 10 years,	Form D: Qualification Form

¹ Non-performance, as decided by UNCDF, shall include all contracts where (a) non-performance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the contractor. Non-performance shall not include contracts where Employers decision was overruled by the dispute resolution mechanism. Non-performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Bidder have been exhausted.

	each contract with a value of at least \$ 1.5 million that have been successfully and substantially completed (at least 80% complete), received satisfactory reference from the client shall be provided for each listed project. The similarity shall be based on the specifications, physical size, complexity, and methods/technology. General and specific experiences as stated in the Project sheets/completion certificates/signed contracts shall be compared to the requirements stated in the TOR; existence of the included projects/ assignments in the firm's project sheets; accuracy of the included project details. <i>(For JV/Consortium/Association, all Parties cumulatively should meet requirement).</i>	
Financial Standing	Minimum average annual turnover of USD 3 million USD for the last 3 years. Net income over the past 2 years should be equal or higher than the price proposal submitted, and the current ratio should be at least 1.0 or higher. <i>(For JV/Consortium/Association, all Parties cumulatively should meet requirement).</i>	Form D: Qualification Form
	Bidder must demonstrate the current soundness of its financial standing and indicate its prospective long-term profitability. <i>(For JV/Consortium/Association, all Parties cumulatively should meet requirement).</i>	Form D: Qualification Form
	Any additional criteria if required	

Technical Evaluation Criteria

Summary of Technical Proposal Evaluation Forms		Points Obtainable
1.	Bidder's qualification, capacity and experience	500
2.	Proposed Methodology, Approach and Implementation Plan	200
3.	Management Structure and Key Personnel	300
	Total	1000

Section 1. Bidder's qualification, capacity and experience		Points obtainable
1.1	Reputation of Organization and Staff Credibility / Reliability / Industry Standing	80
1.2	General Organizational Capability which is likely to affect implementation: management structure, financial stability and project financing capacity, project management controls, extent to which any work would be subcontracted	80

1.3	Relevance of specialized knowledge and experience on similar engagements done in the region/country	80
1.4	Quality assurance procedures and risk mitigation measures	80
1.5	Organizational Commitment to Sustainability (mandatory weight) -Organization is compliant with ISO 14001 or ISO 14064 or equivalent – 15 points -Organization is a member of the UN Global Compact -10 points -Organization demonstrates significant commitment to sustainability through some other means- 5 points, for example internal company policy documents on women empowerment, renewable energies or membership of trade institutions promoting such issues	30
1.6	Material resources and equipment mobilized (the assessment will be conducted in comparison with the description in the subsection “Material resources and equipment” in the Terms of References)	150
Total Section 1		500

Section 2. Proposed Methodology, Approach and Implementation Plan		Points obtainable
2.1	Understanding of the requirement: Have the important aspects of the task been addressed in sufficient detail? Are the different components of the project adequately weighted relative to one another?	30
2.2	Description of the Offeror’s approach and methodology for meeting or exceeding the requirements of the Terms of Reference	50
2.3	Details on how the different service elements shall be organized, controlled and delivered	30
2.4	Description of available performance monitoring and evaluation mechanisms and tools; how they shall be adopted and used for a specific requirement	30
2.5	Assessment of the implementation plan proposed including whether the activities are properly sequenced and if these are logical and realistic	30
2.6	Demonstration of ability to plan, integrate and effectively implement sustainability measures in the execution of the contract	30
Total Section 2		200

Section 3. Management Structure and Key Personnel (the assessment will be conducted in comparison with the description in the subsection “Human resources” in the Terms of References)			Points obtainable
3.1	Composition and structure of the team proposed. Are the proposed roles of the management and the team of key personnel suitable for the provision of the necessary services?		90
3.2	Qualifications of key personnel proposed		
3.2 a	Team Leader		80
	- General Experience	10	
	- Specific Experience relevant to the assignment	45	
	- Regional/International experience	15	

	- Language Qualifications	10	
3.2 b	Deputy team Leader		70
	- General Experience	10	
	- Specific Experience relevant to the assignment	40	
	- Regional/International experience	10	
	- Language Qualifications	10	
3.2 c	Site supervisor and field workers		60
	- General Experience	10	
	- Specific Experience relevant to the assignment	30	
	- Regional/International experience	10	
	- Language Qualifications	10	
Total Section 3			300

Section 5. Terms of Reference

REQUIREMENT: Building of WASH infrastructure in Freetown: Water Kiosks and Public Toilets

UN AGENCY: UN Capital Development Fund (UNCDF)

LOCATION OF WORK: Freetown, Sierra Leone

EXPECTED DURATION OF CONTRACT: One (1) year

PROJECT DESCRIPTION

Background

The United Nations Capital Development Fund (UNCDF) makes public and private finance work for the poor in the world's 47 least developed countries. With its capital mandate and instruments, UNCDF offers “last mile” finance models that unlock public and private resources, especially at the domestic level, to reduce poverty and support local economic development. UNCDF's financing models work through three channels: inclusive digital economies, connecting individuals, households, and small businesses with financial eco-systems that catalyze participation in the local economy, and provide tools to climb out of poverty and manage financial lives; local development finance, that capacitates localities through fiscal decentralization, innovative municipal finance, and structured project finance to drive local economic expansion and sustainable development; and investment finance, that provides catalytic financial structuring, de-risking, and capital deployment to drive SDG impact and domestic resource mobilization. By strengthening how finance works for poor people at the household, small enterprise, and local infrastructure levels, UNCDF contributes to Sustainable Development Goal-SDG 1 on eradicating poverty and SDG 17 on the means of implementation. By identifying those market segments where innovative financing models can have a transformational impact in helping to reach the last mile and address exclusion and inequalities of access, UNCDF contributes to a broad diversity of SDGs. UNCDF Local Finance Development Unit in Western and Central Africa is dedicated to partner with Freetown City Council (FCC - the municipal government of the city of Freetown, the capital of Sierra Leone, established in 1893) to enable its access to market financing for its development plan “Transform Freetown”, thereby contributing to transforming the City of Freetown for the benefit of Freetown's residents. UNCDF and FCC will partner through the Blue Peace Financing initiative set up within the framework of UNCDF partnership with the Swiss Agency for Development and Cooperation and Geneva Water Hub. DocuSign The Blue Peace Movement is a global movement led by the Government of Switzerland that aims to develop a culture of peace and preserve freshwater resources, while achieving equitable and sustainable use of water across boundaries, sectors, and generations. Blue Peace Movement promotes solutions from international organizations, governmental agencies, the private sector, NGOs, research institutes, artists, and young people. Using a variety of diplomatic, political, technical, and financial tools, the Blue Peace Movement advocates for creative and innovative thinking on how to use, manage and invest in water resources.

Project Background

Freetown is one of the most overcrowded cities in the world, with about 8,450 people per square km; about a third of the population lives in settlements where the density can be as high as ten times this figure. City-wide, access to water is a massive challenge, with the current public service only able to meet the demand of about 40% of the population. In some settlements, nearly all residents

lack access to water most of the time, particularly in the dry season. About 80% of residents living off a daily wage (as traders, day laborer or peddlers, or by support from others), and move around the city streets on public transport and in markets relying on public sources of water for handwashing and drinking. One of the other vulnerabilities of the city is being that of the very limited capacity of the health system. This is making the need for reliance on prevention instead of treatment critical. With focusing on WASH, it is possible to work within the extent which includes persons with a level of vulnerability that directly impacts their response ability. This goes hand in hand with the national and local trend led by FCC development plan "Transform Freetown" requirement, which is supporting WASH for vulnerable populations and areas in the City. Improved access to water with an emphasis on public spaces (i.e. schools) is essential for making possible handwashing and sanitation as a mean to lower transmission. Moreover, there is a strong plan requirement to prevent any additional crisis because of, among others, the lack of sufficient sanitary systems (e.g.: COVID-19); access to clean water in schools is a cornerstone in strengthening the sanitary system in Freetown and is therefore of high importance in response to higher the community readiness in terms of hygiene. "Transform Freetown" has been launched by FCC in January 2019 with a focus on 11 priority sectors divided into 4 clusters. FCC uses inclusive data-approach including multi-stakeholder working groups in conceptualizing the project and planning for its activities implementation, the priority sector "water" is within "healthy city cluster". FCC and UNCDF agreed on Building of WASH infrastructure in Freetown: water kiosks and public toilets structures as one of the investments covered by Blue Peace Initiative within the priority sector "water".

OBJECTIVE

The objective of the assignment is to enhance the municipality's resilience and facilitate access to water and sanitation by Building of WASH infrastructure in Freetown, in the form of water kiosks and public toilets.

SCOPE OF WORK

For both water kiosks and public toilets, works shall be carried out in the placements listed in Annex1 according to drawings (drawings' models are available in Annex 3), technical specifications (annex 2) and bills of quantities.

The works shall include the following tasks ² :

For water kiosks:

40 water kiosks must be built, they will relate to water sources and their tanks be supplied through solar pumping systems, 5 alternatives (models) (annex 2) each water kiosk will be built according to one of five possible alternatives/models; the selected alternative for each water kiosk placement is indicated in Annex1. Alternatives have been defined based on space availability.

Table 1: number of water kiosks by alternative /model

Alternative/model number ³	Number of water kiosks
--	---------------------------

² In case the contractor has any proposal to change in the items, drawings, or technical characteristics of the infrastructure, he shall explain, discuss, and get the approval by FCC and UNCDF prior to take actions, non-approved changes will not be accepted by FCC and UNCDF

	1	12
	2	22
	3	16
	4	6
	5	9
Total number of water kiosks		65

Works will include:

- **Supply and install chain link fence with gate:** Clearing the whole site of unwanted materials remove debris from site, concrete work in chain link fence foundations, water tank base and support, plain mild steel bar reinforcement, formwork to sides/soffit, concrete in perimeter well (provisional), straight and bent bars, 16mm diameter, in perimeter well, woodwork, painting
- **Supply and install water tank and support**
- **Supply and install Metal Kiosk with woodwork and painting**
- **Achieve hand dug well /spring water improvement:** demolish concrete /blockwork round perimeter, examine existing well remove submersible pump and store, provide, and install new submersible solar pump as approved by the consultant
- **Supply and install mechanical services installation- Cold Water Supply and Distribution Network:** MDPE raw water storage tank, inlet with accessories for, outlet and water float, purified delivery water storage tank, Fixed Speed Submersible Pressure Boosting Pumps, pre-treatment filters, Ultraviolet (UV) water disinfection system, Polypropylene (PPR) pipes, Polypropylene (PPR) pipe fittings, Testing & Commissioning
- **Electrical services installation for ceiling mounted indoor led light points, weatherproof outdoor led security light points, light switch point (ATM room), and double socket outlet (solar power):** supply and install electrical system first fix, electrical wiring, fittings, and accessories, earthing and bonding, lightning protection system, testing and commissioning
- **Supply and install standalone PV off grid solar power services installation:** solar panels, inverter, solar charge controller, deep cycle battery, and cables and accessories testing & commissioning

For Public toilets:

15 public toilets are aimed to be built according to the drawings in annex 2, their placements are indicated in annex1, works will include:

:

- **Supply and install material and equipment/ achieve works for Substructure:** site cleanse, excavation, concrete work in pit , mild steel bar reinforcement

- **Supply and install material and equipment/ achieve works for superstructure:** concrete work, blockwork (roofing, woodwork), doors, ironmongery, plumbing installation (pipe installation, equipment, and ancillaries), floor, walls and ceiling finishing, walls, paginating

Public toilets will not be linked to boreholes, they are aimed to be equipped with rainwater harvesting system to fill their reservoirs

EXPECTED OUTPUTS⁴

Output ⁵	Estimated due date (counting from contracting date)
Water kiosks built and accepted	18 months
Public toilets built and accepted	18 months

INSTITUTIONAL ARRANGEMENT

United Nations Capital Development Fund. The UNCDF must be responsible for:

- Undertaking direct supervision of the Contractor, together and in consultation with, the FCC as its project partners and end-user of the works from this contract;
- Ensuring timely feedback on issues regarding performance of the contractor;
- Disbursing payments upon completion of all required approvals and acceptances of outputs from the contractor, including, but not limited to, the feedback from the FCC and GVWC;
- Supporting the contractor in works control, reviewing on a regular basis implementation progress and assessing the quality and acceptability of completed works, with the intention of ensuring completion of the project activities on time;
- Providing support and intervention for implementation issues that the contractor may encounter during the life of the contract;
- Liaising with all other project partners from Sierra Leone, where needed or requested by the contractor;
- Monitoring changes in the environment and identifying any risks to the assignment and sharing such information with key stakeholders in a timely manner; and
- Undertaking contract amendments, such as time extensions, or any other changes, as may be mutually agreed by and between UNCDF and the Contractor.

⁴ The expected infrastructure shall be compliant with to the minimum technical requirements detailed in the technical specifications and international standards

⁵ FCC and UNCDF will organize sites visit for the interested contractors before submitting their offers, date will be communicated on UNDP procurement platform two weeks ahead

Freetown City Council. FCC must be responsible for:

- a) Undertaking quality control, provide day-to-day technical review and assessment of the ongoing works and their compliance with the technical specifications including, but not limited to, the appointment of works controlling unit,
- b) Holding and filling daily construction log,
- c) Evaluation and confirmation of initial acceptance of works (which shall be further subject to UNCDF's final acceptance), communication of any information, issues, and updates to UNCDF that might affect smooth execution of the assignment at the local level, with the intention of jointly resolving real and potential causes of delays and quality concerns;
- d) Organizing and providing the necessary documentation/information to facilitate the smooth completion of the assignment by the contractor at the city and community level, including, but not limited to, liaising with other Government, private entities and other stakeholders that may provide the contractor with information/data/literature/facilities relevant to the successful completion of the assignment;
- e) Participation in project meetings at the national and local level where necessary;
- f) Contributing to collaborative working relationships with the Contractor and other local stakeholders at the local level by building linkages and networks to facilitate smooth implementation of the assignment;
- g) Providing logistical support to the Contractor where critical and feasible;
- h) Carrying out regular monitoring and spot checks during the implementation of the assignment at the local level and sharing monitoring reports/feedback with UNCDF; and
- b) Informing UNCDF of any risks for mismanagement or deviation from the agreed assignment, an any other situations that may require action or intervention from and by UNCDF.

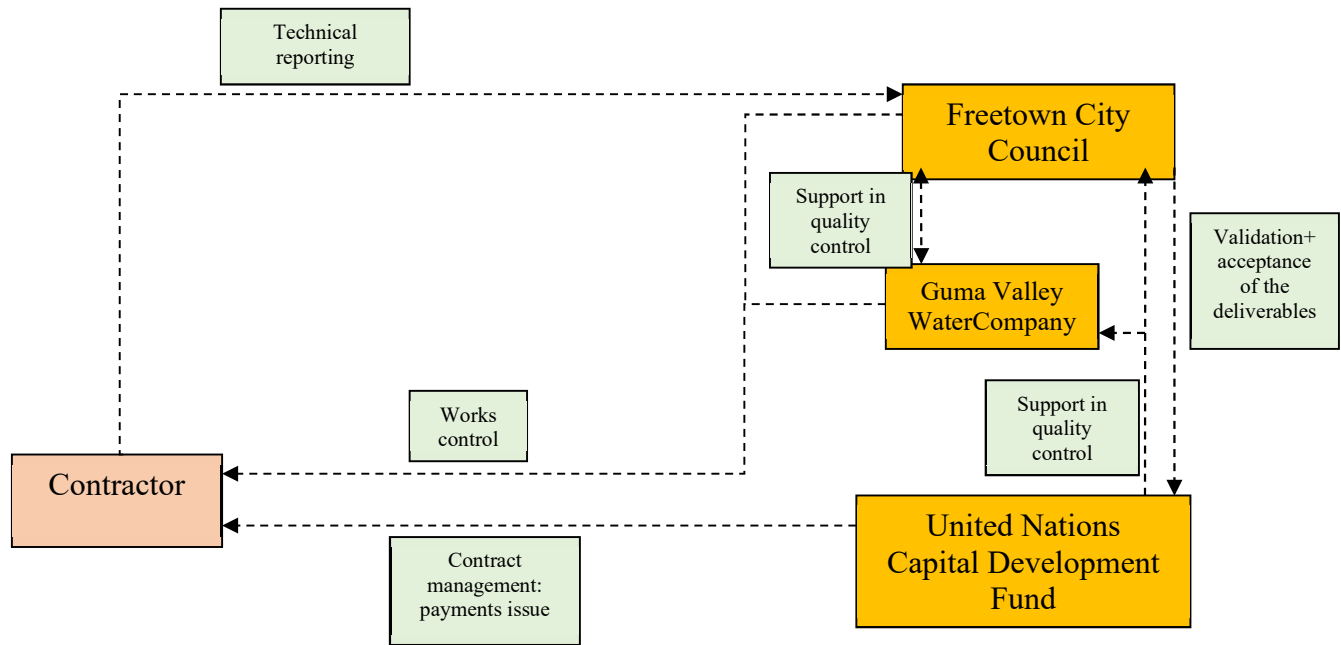
Guma Valley Water Company (GVWC). GVWC must be responsible for:

- a) Providing data/information/technical knowledge needed for the proper work completion;
- b) Providing quality control in coordination with FCC; and
- c) Providing support in managing technical issues.

Contractor. The Contractor must be responsible for:

- a) Complete the works in accordance with the specifications, quality standards and other details based on the contract and the requirements of this RFP;
- b) Comply with instructions/directives from UNCDF as may be issued by UNCDF during the life of the contract;
- c) Notify FCC and UNCDF and other partners of any issues and bottlenecks that may potentially or actually cause delays on the completion of the works, with the intention of resolving them in a timely manner;
- d) Notify and request UNCDF in a timely manner of any change, contract amendment or time extensions that may be necessary, ensuring that sufficient time is provided to UNCDF to review the reasons and process the amendment accordingly.

Project management structure



DURATION OF THE WORKS

The estimated duration of the assignment is (15) fifteen months. The target commencement date of the contract is **15 February 2023** and is expected to be completed by **15 August 2024**. Any time extension that the Contractor may request beyond this period may be granted, upon justification, without additional cost.

LOCATION OF WORKS AND REPORTING REQUIREMENTS

The complete locations of works are listed in Annex 1.

The contractor shall be reporting directly to the UNCDF Investment Officer in Freetown who shall then be the focal person in UNCDF for the progress on the work of the Contractor. He shall be supported by the UNCDF Regional Coordinator of West and Central Africa who will undertake any administrative assistance required in the management of the contract, such as, but not limited to, processing contract amendments.

The Contractor shall prepare, submit, and present detailed quarterly progress report to UNCDF including, but not limited to, those listed as in the table below in paper deliverables. They shall be in the English language and, if presented in the form of hard copy, shall be on A4 sized paper to the UNCDF. One copy of the drawings shall be submitted in A1 size and the remainder of the copies shall be reduced to A3 size. Should they be submitted in electronic format, they should be immediately printable in those sizes.

All reports (except Progress Reports) shall be submitted initially as draft versions, which shall be subject to UNCDF'S review and comments before they are finalized. Thereafter, a soft copy will also be provided to the UNCDF [in PDF and Microsoft Word for the reports and AutoCAD for the

drawings] with the hard copies. Drafts and final reports/drawings shall be submitted in a format compatible to Windows 7 or higher.

Report	Contents	No of Hard /Soft Copies	Due Date (After Start Date)
Execution Drawings in .dwg format and paper form	Floor plans, civil engineering plans, electrical and solar pumping plans, water pipes plans and all the parts) of different components (borehole housing, pipes connections, fitting, concrete leg tower)	04/04	1 month
Quarterly report	Progress, challenges, way forward	04/04	One report each 3 months, or at any time that UNCDF may request for any official reason/purpose
As built drawings	Final versions of all plans and drawings, specially where changes have been made on the originally submitted plan, to be handed over to UNCDF		Upon completion of the works and prior to the release of the final payment

QUALIFICATIONS OF THE SUCCESSFUL CONTRACTOR

The Technical Proposal shall be evaluated as indicated in Section 4 of this RFP consisting, among others, of the following:

- (i) General and specific experience of the contractor (as a firm) relevant to the Assignment
- (ii) Adequacy and quality of the proposed methodology, and work plan in responding to the Terms of Reference (ToRs)
- (iii) Key professional staff qualifications, presented following the prescribed format in Section 3 of Form E herein attached
- (iv) Material and equipment to be mobilized and competence for the assignment

Similar experience shall be defined as having completed at least three (03) contracts within the last ten (10) years, each with a value of at least \$ 1.5 million that have been successfully and substantially completed (at least 80% complete), received satisfactory reference from the client shall be provided for each listed project. The similarity shall be based on the specifications, physical size, complexity and methods/technology.

General and specific experiences as stated in the Project sheets/completion certificates/signed contracts shall be compared to the requirements stated in the TOR; existence of the included projects/ assignments in the firm's project sheets; accuracy of the included project details.

Human resources

The bidder shall submit CVs and Statements of Exclusivity and Availability for the following experts. The experts input in person-months and the project phase when the expert will be required is indicated.

- ***Team leader /Works engineer:*** The Team Leader shall be responsible for the overall management of the project including the feasibility assessments related to different components and shall be the principal contact person with the UNCDF. He shall be responsible for supervising and instructing the construction team as well as subcontractors, educating site workers on construction safety regulations and accident protocol, enforcing site safety rules to minimize work-related accidents and injuries, handling site accidents in accordance with established accident protocol, maintaining an accurate record of construction employee attendance, evaluating the performance of construction employees and instituting disciplinary measures as needed, analyzing blueprints to ensure that construction projects meet design, safety, and budget specifications, and recommending changes to construction operations or procedures to increase efficiency. The Staff must have a master's degree qualifications of drilling engineering or (related field with minimum 4 years of experience); with minimum experience of ten (10) years; and must be registered/member with a relevant professional regulatory body and have a current practicing certificate. Possession of the postgraduate qualifications in the relevant field shall be added advantage. The Staff must have served in a similar capacity on at least three (3) projects of similar magnitude and complexity in the past 10 years. In addition, he/she must have a working experience at least of 3 years in West Africa. Fluency in written and spoken English is mandatory.
- ***Deputy team leader/WASH specialist:*** The WASH specialist must have a minimum experience of ten (10) years in WASH projects and works supervising on site, he will oversee the elaboration of the execution of all the necessary drawings including water pumping, housings, concrete leg tower, electrical and drainage, he will also identify the needed works in terms of rehabilitation of toilets in the schools with minimum experience of ten (10) years; and must be registered/member with a relevant professional regulatory body and have a current practicing certificate. Possession of the postgraduate qualifications in the relevant field shall be added advantage. The Staff must have served in a similar capacity on at least three (3) projects of similar magnitude and complexity in the past 10 years. In addition, he/she must have a working experience at least of 3 years in West Africa. Fluency in written and spoken English is mandatory.
- ***Site supervisor and field workers:*** The proper number of workers with the adequate competencies shall be mobilized by the contractor with explanation of their qualifications, experience and organization, the workers shall have the experience in similar projects in drilling and its appurtenances (borehole solar pumping equipment and related civil engineering/WASH works). The proposed number of workers and teams experience, qualification and organization will be evaluated within the technical offer.

The proposed staff must at least include those listed above. The bidder, however, shall be required to also provide a list complementary staff according to the approach and methodology, as well as the CV of all other key personnel that may be proposed.

Material resources and equipment

Material resources and equipment shall be listed with explanation of their characteristics (brand, manufacturing date, current condition current location, and age) in the technical proposal (engines, vehicles, toolboxes, and others) with all the necessary proofs of authorizations/approval to operate.

Material resources and equipment presence on site shall comply with the technical proposal requirements. UNCDF reserves the right to ask the contractor to change any equipment/material which turns out to be inadequate, inefficient (in poor condition), dangerous or environmentally detrimental.

SCOPE OF PROPOSAL PRICE AND SCHEDULE OF PAYMENTS

The sum of the amounts paid to the contractor shall be made in a statement of account (submitted by the contractor based on the work's progress) by applying the prices included in the bill of quantities to the quantity of completed works that were accepted by FCC

List of completed works

Lists of the completed works are prepared by UNCDF's engineer works' controller and FCC's assigned engineer based on field inspection in the presence of the contractor or its authorized representative.

Account statements

A statement of account for the completed and accepted works shall be prepared by the contractor based on the completed lists after being accepted by FCC and UNCDF based on which UNCDF will issue the payments⁶:

	Milestone accomplishment as Basis for Payment: Estimated quantity of accepted work	Payment Amount Disbursement	Target Completion Counting from the effectivity of the contract	Basis for the disbursement of payment
1 st payment	Contractor mobilization	10% of the total contract amount	0 months	Joint inspection and unanimous written acceptance by all the following personnel: a) FCC's engineer b) UNCDF's works'
2 nd payment	10% of the total number of water kiosks and public toilets built and accepted	10% of the total contract amount	2 months	
3 rd payment	25 % of the total number of water kiosks and public toilets built and accepted	10 % of the total contract amount	5 months	
4 th payment	45 % of the total number of water kiosks and public	15 % of the total contract amount	8 months	

⁶ Payments will be based on the accepted quantities of works

	toilets built and accepted			c) UNCDF's investment officer in Sierra Leone
5 th payment	55 % of the total number of water kiosks and public toilets built and accepted	10 % of the total contract amount	10 months	
5 th payment	65 % of the total number of water kiosks and public toilets built and accepted	10 % of the total contract amount	12 months	
6 th payment	85 % of the total number of water kiosks and public toilets built and accepted	20 % of the total contract amount	15 months	
7 th payment	100 % of the total number of water kiosks and public toilets built and accepted	15 % of the total contract amount	18 months	
		100 % of the contract price		

Acceptance of the works

The inspection of the works shall be performed jointly by FCC's engineer, UNCDF's works' controller, and UNCDF's investment officer in Sierra Leone after the completion of all the various stages of the works stipulated in the contract.

During the verification process in the facilities/infrastructure and in the event of the emergence of deficiencies, the contractor is required without delay to rectify them. The entry into the facilities and location of works, wholly or partially, before carrying out the required repairs, is not considered a temporary receipt, and the contractor cannot consider this as a justification for separating from carrying out the necessary works/fixing.

Defects Liability Period

The defects liability period for all the works and warranty for any equipment shall be set for a period of twelve (12) months, starting from the date of final acceptance of the completed works.

Throughout this period, the contractor remains committed to fully guaranteeing the completed installations/infrastructure and delivered equipment and to perform the required maintenance works and the necessary repairs/rectification to restore the facility/equipment/infrastructure to its normal condition. Accordingly, the Contractor shall conduct field inspection visits to ensure the safety of installations and faults, if any, and repairs them at its own expense after the approval of FCC and UNCDF.

For the duration of the defects and liability period, the contractor shall provide UNCDF with a bank guarantee equal to 3% of the total contract amount. In case the contractor breached from its commitment during the defect's liability period (i.e., failing to conduct rectifications based on UNCDF's request), UNCDF shall make claims on the bank guarantee.

Upon receipt of the bank guarantee to cover the defects liability period, and upon completion of all works, UNCDF shall issue to the Contractor the following: (a) the certificate of completion of works; and (b) release the performance security.

Final acceptance of works

The final acceptance of the works shall take place after the contractor has fulfilled all the administrative and technical conditions, and all works have been handed over to FCC, and duly witnessed by UNCDF.

RECOMMENDED PRESENTATION OF PROPOSAL

Proposers are required to complete, sign and submit documents listed in Section 6: Returnable Bidding Forms / Checklist.

CRITERIA FOR SELECTING THE BEST OFFER

The Criteria for selecting the best offer are described in Section 4 of this RFP.

ANNEXES

Annex1: Placement of water kiosks and public toilets

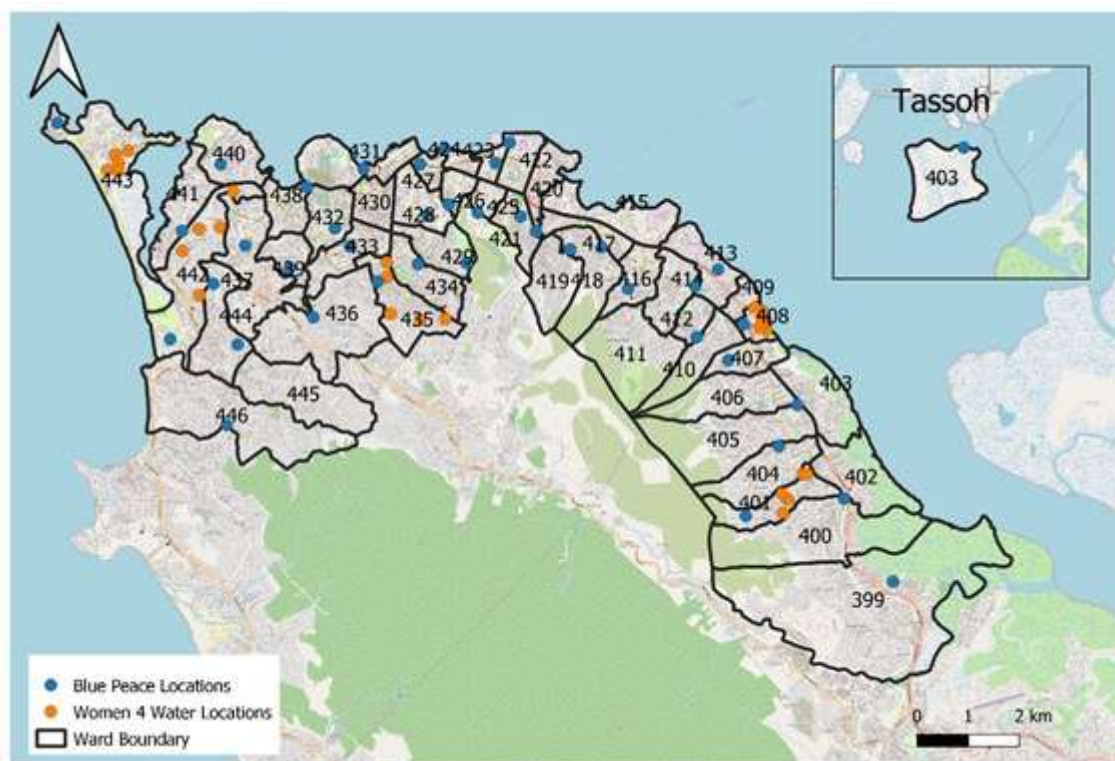
Table: placements and building alternatives/models

S/N	Type	Water point	Ward	Latitude	Longitude	Location	Water Kiosk Alternative	Area covered by water kiosk	Area covered by public toilet (if applicable)
1	Spring/well	5000L	444	8.4676558	-13.2680966	Babadorie Lumley	2	41.2	19.36
2	Spring/well	5000L	445	8.4801129	-13.22111126	Kamayama Engine, Lumley	1	25	
3	Spring/well	5000L	442	8.4912894	-132269097	Sima Compound Lumley	3	40.1	19.36
4	Spring/well	5000L	401	8.430087	-13.164587	Mayenkeneh Calaba Town	3	40.1	
5	Spring/well	5000L	414	8.465202	-13.184831	Thunder Hill, Kissy	1	25	
6	Spring	5000	423	8.4888335	13.2179074	Oldfield street froubay	4	43.71	
7	Hand Dug Well	10000	418	8.4740507	13.1990799	Sankine Street Kisy	2	41.2	
8	borehole	5000	426	8.4815763	13.2262466	mountain cut	4	43.71	19.36
9	Hand Dug Well	10000	429	8.4713017	13.2230433	Leicester peak/pole	5	44.91	
10	Spring	5000	436	8.4617749	13.2503023	hill top/back of US Embassy	5	44.91	
11	Hand Dug Well	5000	446	8.4429419	13.2656926	Juba Bridge	2	41.2	
12	Hand Dug Well	5000	434	8.4711102	13.2317233	Upper sumaila town by Dam.	2	41.2	
13	Spring	10000	440			Olorshoroh	3	40.1	19.36
14	Hand Dug well	5000	435	8.4680312	13.2388408	Oba' water	1	25.0	19.36
15	Spring	10000	432	8.4773557	13.2464492	Berwick Street/Savage street	3	40.1	
16	Bore hole	10000	424	8.4912894	13.2269097	Mabala/Dove cut	4	43.71	
17	Borehole	5000	422	8.492378	13.2154036	Canteen Street/Oxley Street	4	43.71	
18	Spring	10000	441	8.4769116	13.2736253	Carlton Carew Road/Wilkinson	5	44.91	19.36
19	Spring/Well	5000	438	8.4846309	13.2515019	Congo town/Kolleh town	5	44.91	19.36
20	Spring	5000	399	8.4154892	13.1472762	Allentown	3	40.1	19.36
21	Hand Dug well	5000	402	8.4299729	13.1559526	Calaba Town via Old road	2	41.2	
22	Protected dug well	5000	403	8.5654667	13.066225	Tassoh	2	41.2	19.36
23	Hand Dug well	5000	404	8.4391764	13.1675377	Gassama street, calaba town.	2	41.2	
24	Hand Dug Well	5000	406	8.4464271	13.1642862	wellington Maxwell street	2	41.2	19.36
25	Spring	5000	412	8.4582858	13.1822037	Kuntolor, Brima lane	5		19.36
26	Spring Well	5000	419	8.4736762	13.2046012	Mamba Ridge /Kissy Brook	3	40.1	19.36
27	Hand Dug Well	5000	420	8.4768533	13.2107214	Kulbort, Cline town	2	41.2	
28	Spring	5000	425	8.4801129	13.2211126	Ginger hall	5	44.91	19.36
29	Guma pipe	5000	428	8.4796273	13.2300109	Brima Lane	3	40.1	

30	Hand Dug well	10000	430			Waterloo street by Pademba road	3	40.1	
31	underground	5000	433	8.4742734	13.2546155	Redpump, Brookfields	3	44.91	
32	Spring	10000	437	8.4756734	13.2556165	Gwent Height/back of old school	5	44.91	
33	Spring	5000	439	8.4702644	13.2957883	Tengbeh town	3	40.1	19.36
34	borehole	5000	443	8.4958533	13.2637759	Hillstation	3	40.1	
35	Spring	10000	431	8.487778		kroo bay	5	44.91	
36	Spring	10000	427	8.285794752	13.134430748	James Street/Timinie Church	1	25.0	
37	Hand Dug Well	10000	413	8.4796289	13.2302209	Grass Field Kissy	2	41.2	
38	Spring	10000	416	8.4322464	13.1688377	First street, Kissy	2	41.2	
39	Spring	10000	407	8.4391873	13.1677877	New Road Willington	3	40.1	
40	Hand Dug Well	10000	408	8.4383764	13.1675177	Mansaray street, Rokupa	3	40.1	
41	Hand Dug Well	5000	435	8.4613053	-13.231306	Lass Station	2	41.2	
42	Hand Dug Well	5000	435	8.4624075	-13.236577	Upper Sumailia Town	2	41.2	
43	Hand Dug Well	5000	435	8.4614739	-13.226849	Dwazark Spain Baptist	2	41.2	
44	Hand Dug Well	5000	435	8.468875	-13.237278	New England Dwazark Mosque Bunafan	1	25.0	
45	Hand Dug Well	5000	435	8.4713906	-13.237249	New England Dwazark Back of SLBC	1	25.0	
46	Hand Dug Well	5000	442	8.4776342	-13.266897	Lumley Beach road (Site 2)	2	41.2	
47	Hand Dug Well	5000	442	8.4656526	-13.270542	Lumley - Smart Farm (Site 4)	3	40.1	
48	Hand Dug Well	5000	442	8.4838841	-13.264564	Lumley, Smart farm (Dipo) - Site 6	1	25.0	
49	Hand Dug Well	5000	442	8.4772192	-13.27062	Lumley, lightfoot Boston road - site 7	2	41.2	
50	Hand Dug Well	5000	442	8.4734069	-13.273583	Elvis Drive (Camabala)	1	25.0	
51	Hand Dug Well	5000	443	8.4903285	-13.285513	Abuja - Aberdeen	1	25.0	
52	Hand Dug Well	5000	443	8.4875277	-13.286929	Kelyah Compound	2	41.2	
53	Hand Dug Well	5000	443	8.490925	-13.283206	Kingston (Off FAO drive) - crab town	3	40.1	
54	Hand Dug Well	5000	443	8.4887725	-13.284884	Aberdeen crab town 1	2	41.2	
55	Hand Dug Well	5000	443	8.4874499	-13.284937	Aberdeen crab town 2	1	25.0	
56	Hand Dug Well	5000	401	8.4343484	-13.163354	Upper mayenkineh - Site 1	2	41.2	
57	Hand Dug Well	5000	401	8.4342706	-13.16258	Upper mayenkineh - Site 2	2	41.2	
58	Hand Dug Well	10000	401	8.4274751	-13.166841	Kenneh drive	5	44.91	
59	Hand Dug Well	5000	401	8.4298484	-13.16591	Off sanda street	2	41.2	
60	Hand Dug Well	5000	401	8.4308599	-13.166998	Sesay street	2	41.2	
61	Hand Dug Well	5000	408	8.4628274	-13.170422	Seaside	1	25.0	
62	Hand Dug Well	5000	408	8.4594396	-13.169779	Mefleh 2	3	40.1	
63	Spring	5000	408	8.4599194	-13.170959	Cain Stick	4	43.71	

64	Hand Dug Well	5000	408	8.4609568	-13.170566	Off Mabel Brown Street	4	43.71	
65	Hand Dug Well	5000	408	8.4634595	-13.171903	Rokupa Wharf	1	25.0	

Map showing infrastructure's locations



Annex 2: Technical specifications

Description of materials, good, and workmanship

1.0 GENERAL

1.1 Responsibility

No approval by the FCC assigned engineer and UNCDF's works controller shall in any way relieve the Contractor of his contractual responsibility for the quality of materials and the standard of workmanship in the finished works.

1.2 Variations

No variations to these Technical Specifications may be made unless approved by the FCC assigned engineer and UNCDF's works controller in writing

1.3 Standard Specification

In all instances in which articles and materials specified by reference to a British Standard (BS) Specification in these Bills, articles and materials complying with an alternative standard specification may be substituted provided they are:

- a. In no respect lower in standard, grade or quality than those specified.
- b. Similar in size and shape to those described.
- c. Equally suitable for the purpose for which they are required.
- d. Approved in writing by the FCC assigned engineer and UNCDF's works controller prior to their incorporation into the Works.

Description of materials, goods and workmanship given in anyone-work section shall apply equally to all work sections.

All materials, goods and workmanship shall comply with the requirements and recommendations of the relevant BS or CP where applicable, unless otherwise stated. Any reference in these Bills, which is at variance with any provision in a BS or CP, shall be deemed to take precedence over and to over-ride same.

Notwithstanding any of the foregoing the whole of the materials, goods and workmanship shall be subject to the approval of the FCC assigned engineer and UNCDF's works controller.

1.4 Proprietary Articles of Materials

In all instances in which articles and materials of a proprietary manufacture are described in these Bills, articles and materials of a different manufacture may be substituted provided they are:

- a. Similar in design and details, size, shape and quality to those described
- b. Equally suitable for the purpose for which they are required.
- c. Approved in writing by the FCC assigned engineer and UNCDF's works controller prior to their incorporation into the Works.

1.5 Defective Materials or Goods

Any materials and goods that have been damaged, contaminated or deteriorated or have not been approved or have been condemned shall be rejected and removed from the site within 24 hours and replaced at the Contractor's expenses.

1.6 Defective Work

Any crack or otherwise defective work, including deviation from the working details in respect of setting out, correct lines and levels, size or thickness of members, shall be removed and reconstructed or otherwise rectified to the approval of the FCC assigned engineer and UNCDF's works controller, and the Contractor shall be responsible for all additional cost incurred, all such remedial work shall be executed without undue delay.

The FCC assigned engineer and UNCDF's works controller reserve the right to check the work executed by the Contractor and his setting out in such cases and at such times as he may deem fit, there is, however, no duty on his part to make such checks and any failure by him to observe errors shall not relieve the Contractor of his responsibilities in these respects.

2.0 EXCAVATION AND EARTHWORKS, ETC

2.1 Site Clearance and Felling of Trees

The Contractor shall include in his prices for clearing the site of all unwanted trees, shrubs, roots, old foundations, and materials arising from the site clearances, etc, that may be deemed necessary by the FCC assigned engineer and UNCDF's works controller (unless otherwise described).

All the works are to be executed in such manner as to cause the least possible disturbance and in the most careful manner to cause the minimum or annoyance and inconvenience to the owners and occupiers of the lower floors and adjacent premises and to the public. The Contractor must provide for properly watering and all other necessary precautions to minimize dust. Where necessary, the Contractor will be required to provide and erect all necessary dust-sheets, tarpaulins, etc.

2.2 Nature of the Ground

The Contractor is deemed to have visited the site and ascertained the nature of the ground to be excavated and works to be done and must accept all responsibility for the cost of excavation.

The Contractor shall allow for breaking up and removing all obstructions met during the excavations, including old foundations, drains, etc, and disinfecting wells, septic tanks, and cesspit, etc, and filling with dry hard-core well consolidated.

Where rocks or similar hard natural materials is encountered during the course of excavations the Consultant must be notified immediately so that approval or agreement as to its extent and method of removal is determined before the rock is actually excavated.

2.3 Site Levels

Before commencing any excavation, the Contractor shall satisfy himself that any site levels, whether spot or contours shown on the drawings are correct.

If he is not satisfied with the accuracy of these levels, he shall at once give written notice to the FCC assigned engineer and UNCDF's works controller; otherwise, no claim will be entertained in respect of the inaccuracy of these levels.

2.4 Excavation Measured Net

The quantities of excavation and filling have been ascertained by taking the net dimensions of the void to the lines and levels shown on the drawing, no allowance has been made for increase in bulk after excavation or for sloping sides or timbering.

2.5 Excavation Beyond True Line

No more ground shall be removed than is necessary and if loose, soft or hard ground is met, the matter shall be reported at once to the Consultant.

Should the Contractor excavate to a greater depth or width than shown on the drawings or as instructed by the FCC assigned engineer and UNCDF's works controller at his own expenses he shall fill in such greater depth or width of excavation with concrete as described for foundation.

2.6 Excavation in Rock

Quantities for excavation in rock have been shown as "extra over" the excavation in which rock occurs. Excavations which in the opinion of the FCC assigned engineer and UNCDF's works controller are best carried out by wedges, levers, compressed air or other similar plants, has been described as such.

2.7 Support of Sides of Excavations

The sides of excavations shall be supported using any methods the Contractor elects in such a way as may be sufficient to secure them from falling in and the supports shall be maintained for as long as necessary.

The Contractor will be held responsible for upholding the sides of all excavations and earthworks and no claim for addition excavations, concrete or other materials will be considered in this report.

2.8 Disposal of Spoil

The whole of the spoil arising from the excavation (where not required to be returned for infilling at once) shall be moved to spoil heaps where required on the site for infilling around foundations or to make up levels under floors and outside lines of building and any surplus is to be removed from the sites, filling has been measured separately.

Selected and approved materials from excavation suitable for fill materials shall be kept separate for re-use as directed.

2.9 Protection of Excavations

The Contractor shall provide all necessary board or coverings and lay same to protect trenches or excavations from the effect of inclement weather, if so required by the FCC assigned engineer and UNCDF's works controller.

The Contractor shall allow for keeping the excavations free from water by pumping or bailing.

2.10 Termite Treatment Solution

Not applicable.

2.11 Approval of Excavations and Concreting Foundation

The Contractor shall report to the Architect when excavations are ready to receive concrete foundation and shall not proceed with concreting until the excavations have been approved by the Architect, any concrete or other work put in before this has been done shall be removed, if so required, by the Architect. The Contractor shall not fill in over any work until it has been approved by the Architect.

2.12 Filling

Selected materials arising from excavation shall be brought back from the place where it was temporarily deposited, and the trenches or other excavations to be filled, levelled with spoil in layers of not more than 6' (150mm) thickness. Each layer shall be carefully rammed and further consolidated by the addition of water.

All filling to raise the level of the site shall be done in similar layers, carefully rammed and consolidated to the satisfaction of the Architect.

3.0 CONCRETE WORK

3.1 General

The following terms whenever used hereafter, shall be taken to have that meanings assigned to them below.

“Structural props” shall mean those components of the strutting to form work, which carry the weight of the concrete and will be retained in position when the shuttering is removed from concrete faces.

“Approved or Approval” shall mean, approved by or approval of the FCC assigned engineer and UNCDF’s works controller in writing.

“Required” shall mean required by the terms of this Specification or other Contract Documents.

“Satisfaction” shall mean to the satisfaction of the FCC assigned engineer and UNCDF’s works controller.

“Testing Authority” shall mean an organization, approved by the FCC assigned engineer and UNCDF’s works controller, fully equipped to carry out all tests and checks required by this specification. It shall be an independent firm or a laboratory.

Reinforced concrete design

The reinforced concrete works has been designed generally in accordance with the recommendations contained in the Code of Practice 114, 1957, and the Contractor shall comply with the recommendations made in section 2.5 and 2.6 of the Code of Practice, unless specifically excluded or modified hereafter. A copy of the Code of Practice 114 shall be kept permanently on the site.

Precast and unreinforced concrete

Precast and unreinforced concrete shall comply with all relevant requirements of this specification.

Rates

The Contractor’s rates for all items relating to the concrete works and tests shall include for carrying out the work in accordance with all the terms and requirements listed hereafter. The Contractor is to take full responsibility for providing an adequate key for plastering etc. on the concrete, wire brushing of timber formwork will be permitted and when metal form work is used hacking of concrete will be allowed. The use of a retarder on the formwork will not be permitted in any circumstances.

The Contractor should note that all reinforcement and formwork has been measured separately, except that for precast work, the rates shall include for formwork and reinforcement as specified.

Defective work

Where in the opinion of the FCC assigned engineer and UNCDF’s works controller any of the finished works or materials or workmanship in any part of the works do not comply with all relevant requirements of these Preambles, that part of the Works shall be classed as defective work.

All work classed as defective work, shall be cut, and removed from the Work and replaced to the satisfaction of the Consultant. The extent of the work to be removed and the methods to be used in the removal and replacement of this work shall be in accordance with the FCC assigned engineer and UNCDF's works controller's instructions.

3.2 Materials

All materials used in the Works shall comply in all respects with the relevant BS except for any deviations specifically authorized in subsequent clauses of these preambles.

Concrete shall be made with Portland Cement, fine aggregate, coarse aggregate and water. No other agent or ingredient shall be added to the concrete.

3.2.1 Cement

The cement shall be Portland Cement complying with BS12 and shall be delivered to the site in sealed bags. The cement shall be always protected from damaged by the weather or any other causes before use. It shall be stored in weather tight and ventilated shed of adequate capacity fitted with a boarded floor suitably raised clear off the ground. Cement shall be used in rotation in order of its delivery to site. Any cement, which has become caked or otherwise adversely affected, shall not be used in any part of the works and is to be removed from the site.

3.2.2 Aggregate

Fine aggregate shall be river or pit sand thoroughly washed with clean water until all salts and other impurities are removed and complying with BS 882.

Coarse aggregate shall be broken syenite, washed clean and free from impurities and complying with BS 882.

Aggregate shall be stored in hard paved self-draining areas with adequate dividing walls to prevent mixing of different types of aggregates.

For structural concrete trades the minimum size of fine aggregate shall be able to pass a Nr 7 sieve and the coarse aggregate shall be as listed in Table 1.

The grading of coarse aggregate shall be in accordance with Table 1 BS 882, 1965. The percentage of broken stone and sand shall be in accordance therewith, subject however, to possible modifications to be approved by the FCC assigned engineer and UNCDF's works controller.

If the grading of any aggregate changes, the FCC assigned engineer and UNCDF's works controller shall approve the mix content.

All sampling and testing of aggregates shall be carried out in accordance with the relevant recommendations of BS 882.

At the commencement of the contract, the Contractor shall deliver to the Testing Authority for inspection and analysis three separate and sufficient samples of each type of aggregate to be used in the structural concrete grades. For each type of aggregate, the samples shall be taken at the proposed source of supply at intervals of not less than one day

The quality of water contained in the aggregate shall be determined by an approved methods at least once a day when concrete mixing is in progress.

3.2.3 Water

The water to be used in the works shall be clean and free from impurities.

3.2.4 Reinforcement

Bars for reinforcement shall be mild steel and or high tensile bars complying with BS 4449.

Mesh for reinforcement shall comply with BS 4483. All mesh shall be delivered as flat sheets.

Reinforcement shall be stored clear off the ground.

3.3 Test

3.3.1 Test

All test and checks carried on site shall be in the presence of, or as directed by the FCC assigned engineer and UNCDF's works controller.

The Contractor shall send copies of all test results to the FCC assigned engineer and UNCDF's works controller.

An item is included elsewhere in these Bills for the cost of testing.

No claims will be entertained for any tests called for by the FCC assigned engineer and UNCDF's works controller in consequence of any failure by the Contractor to comply with these specifications.

3.3.2 Concrete Tests

All concrete test cubes shall be made, cured and tested and the result recorded in accordance with the recommendation of BS 1881, 1970, unless specifically modified in subsequent clauses of these Preambles. The testing shall be carried out by the Testing Authority.

The test specimen shall be 150mm cubes, made in steel moulds of approved design. The test cubes shall be taken from typical batches of concrete as directed by and in the presence of the FCC assigned engineer and UNCDF's works controller' representative without prior notice.

Slump tests of the mixed concrete shall be carried out at regular intervals to be directed by the Consultant and the results recorded and kept on site.

3.3.3 Load Test

Load tests of complete parts of the structure may be called for by the FCC assigned engineer and UNCDF's works controller whenever a dispute arises as to the sufficiency of the work done by the Contractor.

The standard of acceptance for structure load test, as stipulated in Clause 6.05 of the BS Code of Practice 144, is specifically excluded from these Preambles. The test procedure and the standard of acceptance will be specified by the Consultant. Where the results of such tests indicate that any member or part of the structure does not comply with these specifications, that part of the structure shall be classed as defective work.

3.4 Design and Control of Concrete and Mortar Mixes

For structural concrete mixes, made with ordinary Portland Cement, the average 7- and 28-days strength for each mix shall not be less than that specified in Table 1.

3.4.1 Preliminary Strength

For each structural concrete mix, the twenty-eight days preliminary strength shall be calculated as the average of all the cubes tested at twenty-eight days and seven days preliminary strength shall be calculated as the average of all the cubes tested at seven days.

If, for any mix in Table 1, the test results of one set of three cubes, tested at twenty-eight days, fall below these requirements, the mix shall be rejected, the proportions revised by the Contractor and the testing procedure repeated.

Results of all preliminary tests shall be sent to the FCC assigned engineer and UNCDF's works controller as soon as they are available.

3.4.2 Work Strength

Work strength cube tests shall be carried out during the contract period.

A sample of the concrete shall be taken on each of the first four days the mix is used on the site. Six cubes shall be made for each sample, three for tests at seven days and three for tests at twenty-eight days and shall be accepted as satisfactory if the crushing strength of all three cubes is greater than specified for that mix.

Subsequently, a sample of the concrete shall be taken, and six cubes made from the sample for every day of casting of structural concrete or as directed by the FCC assigned engineer and UNCDF's works controller and these cubes shall be tested at seven and twenty-eight days to provide a record.

The Contractor shall maintain on the site a complete record of the date, time, grade and location in the works of the mix from which the sample was taken and shall submit this information with the test results to the FCC assigned engineer and UNCDF's works controller as soon as they are available.

3.4.3 Works Test Failure

If any set of seven days tests results indicates low twenty-eight days strength to be expected, the FCC assigned engineer and UNCDF's works controller shall be notified immediately, and no props shall be removed from the affected part of the structure until the cause is determined.

If any of twenty-eight days cube test results fall below the specified strength, the FCC assigned engineer and UNCDF's works controller shall be notified immediately, and the cause of the failure investigated.

The extent of the area of the structure affected shall be as defined by the FCC assigned engineer and UNCDF's works controller.

Table 1

Nominal Description	Quantity of Dry Materials			Min. Cube Strght. 28 days	Max Size of agg.
	1. Kg	m3	m3	Mn/M2	mm
A. Mass Concrete 1:3:6	213	0.59	0.91	16	40
B. Mass Concrete 1:2 1/2:5	261	0.58	0.89	21	18
C. Reinforced and Precast Concrete 1:2:4	317	0.56	0.86	25	18
D. Concrete below water level mix 1:1 1/2:3	380	0.52	0.80	30	18

Mortar

1:2	224	5
1:3	224	7 1/2
1:4	224	10
1:6	224	15

3.4.4 Preliminary Strength

Preliminary strength cube tests shall be carried out to check the calculated proportions for each structural concrete mix.

Preliminary cubes shall be made for each mix from three samples of aggregate and the samples of cement sent to the approved Testing Authority. From each sample of aggregate six cubes shall be made, three for test at seven days and three for test at twenty-eight days.

Each set of three cubes tested at twenty-eight days shall be accepted as satisfactory if either or all three cubes have a crushing strength greater than the preliminary strength or the average strength of the three cubes is greater than the preliminary strength and the difference between the greater and the least is not more than 10% of that average.

All costs and all charges in consequence of the courses of action, the Contractor is directed to follow, shall be borne by the Contractor.

3.5 Formwork

3.5.1 General

Before construction commences, the Contractor shall notify the FCC assigned engineer and UNCDF's works controller of the general method and system of formwork he proposes to use.

All joints in the formwork and joints between the formwork and previous work shall be sufficiently tight to prevent loss of liquid from the concrete through these joints.

Concrete tolerance as described in the general concrete specification shall be adhered to.

No metal part of any device for maintaining formwork in the correct location shall remain permanently within the specified concrete cover to the main reinforcement.

Any bolt holes must be grouted with an approved mix of cement mortar slightly recessed from the surface of the surrounding concrete.

The position and design of all spacer bolts agreed with the FCC assigned engineer and UNCDF's works controller but under no circumstances will wire ties passing through the finished concrete be allowed.

The use of concrete retarders or similar preparation on the formwork surfaces will not be permitted.

Shutters shall be lightly oiled immediately after manufacture and just before pouring with approved mould oil.

The mould oil used shall not come into contact with the reinforcement.

Spacer blocks in reinforcement shall be plastic or cement mortar blocks and to a design approved by the FCC assigned engineer and UNCDF's works controller.

All fair surfaces and arises shall be adequately protected against damage and surface staining during the execution of subsequent works.

Formwork shall be removed without risk of shake or vibration to the finished work.

Any finished work, which is subject to the subsequent damage or surface staining, shall be treated as defective work.

Immediately after striking, the shuttering shall be carefully wire-brushed so as not to destroy the grain pattern and then lightly oiled.

When not in use, all shuttering, soldiers, Wallings and shorting shall be

stored flat and thoroughly protected from the weather.

After removal of the shuttering, the concrete shall be cured by being kept in a wet condition for at least seven days, in accordance with curing clause.

3.5.2 Mortises, Holes, Chases in Concrete

Fixing blocks and ends of brackets and bars and bolts etc., shall be cast in the concrete at the time of placing and together with all mortises, holes, apertures, chases and grooves, etc., shall be accurately set out in the formwork before the concrete is placed. No part of the concrete works shall be cut away for any such item or for any other reason without the FCC assigned engineer and UNCDF's works controller approval.

The Contractor shall obtain from all Public Utility Authorities complete information of their requirements regarding conduit pipes, fixing bolts, chases, holes and any other items to be cast or formed in concrete members subject to the conditions that failure or a sub-contractor to supply such information shall not be allowed to delay the progress of the contract.

The Contractor shall ensure that all Public Utilities Authorities are informed of his program for the structural works at the commencement of the contract.

3.5.3 Propping

The vertical propping to all formworks shall be carried down sufficiently far to provide the necessary support without damage or overstress or displacement of any part of the construction.

Structural props shall be retained in position until the new construction is sufficiently complete and strong to support its own weight and any loads to be placed on it during the concrete period.

All formwork to soffits shall be constructed so that it can be removed without disturbing the structural props.

3.5.4 Cambers

Unless otherwise detailed on the drawings, the formwork of all beams and slabs shall be constructed with appropriate upward camber.

3.5.5 Final Preparation

The internal faces of the formwork may be coated with an approved preparation to prevent adhesion of the concrete to the forms provided that the use of this preparation will not stain the surface of the finished concrete.

None of this preparation shall be allowed to touch the reinforcement.

Immediately before the concrete is placed in any of the formwork, the interior of that section shall be completely cleaned of all extraneous materials including water.

Each section of the formwork to structural members shall be inspected and passed by the FCC assigned engineer and UNCDF's works controller immediately before concrete is placed in that section.

3.6 Reinforcement

3.6.1 General

Reinforcement bending schedules will be provided if requested by the Contractor listing the cut length and diameter or size and bending dimensions and location of each bar in the work.

Before the bars are cut to length, the Contractor must check that: -

1. Reinforcement schedules are provided for each part of the structure sufficiently in advance of his concreting programme.
2. Each schedule includes the correct quantities of reinforcement as detailed on the drawing to which it relates;
3. The grades of reinforcement given in each schedule correspond to those shown on the relevant drawing.

The Consultant shall be notified of any errors disclosed by these checks.

3.6.2 Bending

All reinforcement bars shall be accurately shaped and bent in a manner that will not injure the material. Bars shall not be bent hot.

3.6.3 Cleaning

All reinforcement shall be free of all loose mill scale and thoroughly cleaned to remove all loose rust, oil and grease or other harmful matter immediately prior to being placed in position in the works.

3.6.4 Placing

All reinforcement shall be accurately placed with the correct cover and securely fixed in the positions shown on the drawings by an approved method and inspected by the FCC assigned engineer and UNCDF's works controller.

The Contractor shall supply and fix all necessary concrete spacers required to maintain the reinforcement in the correct position. The cost of chairs shall be included in the rates for reinforcement in these bills.

No metal part of any device used for connecting bars or for maintaining reinforcement in the correct position against faces exposed to the elements

shall remain permanently within the specified minimum concrete cover to the reinforcement.

3.7 Concreting

3.7.1 General

The Contractor shall ensure that each stage in the contract of the reinforced concrete work including the making and testing of cubes and the maintenance and calibration of mixing and measuring plant, is supervised and finally inspected by competent and responsible members of his site staff.

3.7.2 Proportions

The proportions of materials for concrete shall be accurately measured. The cement, including bagged cement, and all aggregate shall be measured in weighing batches approved by the Consultant.

Where aggregates are gauged by volume, accurate gauge boxes shall be constructed to the approval of the FCC assigned engineer and UNCDF's works controller. The boxes shall be completely filled, and the top struck off level.

In measuring the water for each batch, due allowance shall be made for the water content of the aggregates.

The water content of the aggregates shall be measured before each day's concreting begins and when they are to be used immediately after delivery.

3.7.3 Mixing

Concrete shall be mixed in an approved mechanical type of concrete mixer. Mixing shall be continued until there is a uniform distribution of the materials in the mixer and the mass is uniform in color.

The mixing time for each batch shall not be less than the minimum period recommended by the mixer manufacturer, checked by an approved timing device, and shall be continued until concrete is uniform in colour and consistency.

The volume of mixed materials in each batch shall not exceed the rated capacity of the mixer. Each batch of concrete shall be discharged completely before the mixer drum is recharged.

The mixer drum shall be thoroughly washed out whenever mixing ceases.

3.7.4 Transport

Concrete shall be transported as quickly as possible from the mixer to its final position without segregation or loss of any of the ingredients.

All plant and equipment used for transporting concrete shall be kept clean. All containers used for transporting concrete shall be thoroughly washed out whenever mixing ceases.

Runs or gangways for concrete transporting and main runs for foot traffic shall not be supported by or allowed to bear on the fixed reinforcement.

3.7.5 Placing

Concrete shall be placed while still sufficiently plastic for adequate compaction.

At all times whenever reinforced concrete is being placed, a competent steel fixer shall be in continuous attendance on the concrete to adjust and correct the position of any reinforcement which may be displaced.

The FCC assigned engineer and UNCDF's works controller shall be given due notice that concrete is to be placed in a particular part of the works when he so directs.

The Contractor shall keep on site a complete record of the works, showing the time and date when concrete is placed in each part of the works. The records shall be available at all times for inspection by the FCC assigned engineer and UNCDF's works controller.

Once concreting has commenced, it shall proceed continuously without a break until the forms are filled or a designed joint is reached.

Vigilance will be necessary during pours of lift to ensure that any grout leaks or spillages are thoroughly brushed off with clean water immediately.

Reinforcement left exposed, projecting from poured concrete, must be protected to avoid danger of rust staining the completed work.

Subject to the Consultant's approval, the use of foam rubber or plastic gaskets to ensure no loss of grout at the foot of lifts will be permitted, provided they do not materially affect the appearance of the finished work.

3.7.6 Compacting

Concrete shall be thoroughly compacted during placing and shall be carefully worked around all reinforcement, embedded fixtures and into the sides and corners of the formwork.

All structural concrete shall be compacted by the use of approved mechanical vibrators, preferably the internal type.

3.7.7 Curing

All surfaces of freshly placed structural concrete shall be covered with approved materials and cured by being kept continuously moist for seven days.

Soffit and side forms left in position will be regarded as effective in keeping those surfaces moist.

The Contractor shall notify the FCC assigned engineer and UNCDF's works controller of the system and methods of curing he proposes to use for all structural concrete members before work is commenced.

3.8 Striking of Formwork

3.8.1 General

The structure shall not be distorted, damaged or overloaded in any way by the removal of the formwork from concrete members.

The responsibility for the safe removal of any part of the formwork shall rest with the Contractor.

3.8.2 Minimum Striking Times

The minimum time from completion of placing concrete to the removal of formwork from structural members shall be determined from the following table or as the FCC assigned engineer and UNCDF's works controller may direct.

LOCATION	MINIMUM STRIKING TIMES FOR CONCRETE IN DAYS
Beam and wall sides.....	1
Columns.....	1
Beams soffits (structural props left in).....	7

3.9 Finished Work to Concrete Faces

3.9.1 General

After removal of the formwork, no treatment of any kind other than the application of specified finishes and such treatment as is required for curing the concrete shall be applied to the concrete faces.

Where rubbed down, plain smooth or fair face finish is specified, the concrete shall be brought to a perfectly true, smooth, and even surface by rubbing with carborundum stone dipped in cement grout. Alternatively, the Contractor is permitted at his own expense to provide smooth linings to the form, which will achieve the required finish without rubbing down. Rubbed down surfaces shall be true to form and free from all board marks, joint marks, honeycombing, pitting, etc.

3.9.2 Fair Face Finish

Unless otherwise specified, all concrete faces to be exposed in the finished works shall be left as struck with a plain smooth face true to line and level within the specified tolerance for the work.

These clauses in no way vary the Preambles clause for reinforced concrete. It is essential that in both the preparation of the formwork and in the casting of the concrete, considerable care should be taken to achieve a first class uniform appearance. This appearance is of such importance that special effort will be necessary to avoid staining and to achieve uniformity in colour. No repair or patching up whatsoever will, be allowed.

After inspection of superfluous fins and similar projections shall be carefully removed. No render or other applied finish shall be used to obtain a fair face to the concrete.

All concrete face to be exposed in the finished works shall be adequately protected against damage or surface staining during the execution of subsequent works.

Any finished work, which the Consultant's shall judge inferior in any respect to the standard of the relevant, approved sample, or which is subjected to subsequent damage or surface staining shall be rejected and treated as defective work.

3.9.3 **Tolerances**

Unless otherwise indicated in the drawings, the setting out dimensions, levels of the finished works, and sizes of structural elements, shall be within the maximum tolerance given below:

<u>Description</u>	<i>Max. Tolerance</i>
1. All dimensions of 3m and over	± 6mm (1/4")
2. All dimensions less than 3m	± 3mm (1/8")
3. Slab to surface levels (all points in surface)	± 6mm (1/4")

Surfaces exposed in the finished work shall not depart by more than 5mm for 1500mm straight edge placed anywhere on the surface.

Columns and walls shall not be more than 6mm out of plumb in any one storey height and not more than 18mm out of plumb in the total height.

Unless otherwise indicated in the drawings, that tolerance to which units are to be cast shall be within the following:-

<u>Description</u>	<i>Max. Tolerance</i>
1. All dimensions shall be within	± 3mm (1/8")
2. Maximum permissible bow	± 3mm (1/8")

3. Maximum permissible twist from any plain surface as defined by any three exterior corners $\pm 3\text{mm } (1/8'')$

3.10 **Precast Concrete Work – NOT APPLICABLE**

4.0 **BLOCKWORK**

4.1 **Materials**

4.1.1 **Cement**

The cement shall be Ordinary Portland Cement to BS 12 as before desc

4.1.2 **Sand**

The sand shall be river or pit sand and as before described.

4.1.3 **Water**

The water shall be clean and free from impurities.

4.1.4 **Precast Sand Crete/Concrete Blocks**

Concrete blocks shall be manufactured in accordance with BS 2028; 1364' 1968.

All types of blocks to be made in approved concrete blocks making machine with pallets true to shape and square edges to all sides.

The external dimensions of the blocks within the tolerance specified shall be as follows:

<u>Description</u>			<i>Max. Tolerance</i>	
1.	Length	450mm (18'')	$\pm$	3mm ($1/8''$)
2.	Height	200mm(8'')	$\pm$	3mm ($1/8''$)
3.	Thickness of solid blocks	225/150/100mm (9''/6''4'')	$\pm$	3mm ($1/8''$)

Sand Crete blocks shall be composed of one part cement to six parts sand by volume and shall have a minimum compressive strength of 2.8N/mm² and an average of 3.5N/mm² in twenty-eight days.

The cement and sand shall be mixed and unless otherwise specified or directed by the FCC assigned engineer and UNCDF's works controller, turned three times dry until an even color and consistency is achieved.

Water shall then be added gently through a rose; the quantity of water added being just sufficient to secure adhesion.

After removal from the machine, the blocks on pallets shall be matured under shade in separate rows, one block high, with a space between each block for at least 24 hours.

They shall then be removed from pallets but shall not be stacked up or be removed from shade for at least a further seven days, and then stacked not more than five blocks high in the shade for minimum of fourteen days and always kept well-watered.

No blocks shall be built into any part of the building until they have matured for at least twenty-eight days. The face of blocks, except where otherwise described shall be left rough for plastering or rendering.

Blocks of special size and shape shall be cast true to shape, even in size, square and free from flaws or blow holes with clean and sharp arises and equal to samples approved by the FCC assigned engineer and UNCDF's works controller. All blocks shall be carefully handled. Blocks with broken arises shall not be used.

4.1.5 Samples to be Submitted

At least two weeks before block-laying is to commence twelve samples of each type of precast sand Crete blocks to be used in the Works shall be submitted to the approved Testing Authority. Should the test be unsatisfactory further samples will be required.

4.1.6 Mortar

The cement and sand mortar shall be composed of one part Portland Cement and six part of sand by volume. An approved plasticizers additive may be used in accordance with the manufacturer's instruction.

The mortar shall be used within one hour of mixing. Such mortar shall not be used or mixed with any other mortar after it has begun to set nor shall any other mortar of any kind of previous day's mixing be used.

A proper stage shall be provided to receive the mortar when made.

4.1.7 Block Laying

The whole of the blockwork shall be constructed as shown on the drawings. All blocks shall be well soaked before being laid. Blockwork shall, unless otherwise described, be built in stretcher bond.

All blocks shall be levelled carefully through every second course. All corners, junctions and reveals shall be properly bonded. All walls, perpends, quoins and the like shall be left strictly true, square and plumb. Blockwork shall be carried out in uniform manner and no other portion shall be raised more than 1 meter above another at any one time.

Mortar joints shall not exceed 12mm thickness. Special care shall be taken that all vertical joints are filled with mortar.

All faces to be rendered shall have joints raked out to a depth of 12mm.

The Contractor shall properly execute all rough cutting, bonding, weighting, and trimming up to soffits, plumbing angles, building in or cutting and pinning in ends of lintels, sills, joints and the like.

Any defective blocks found in the works shall be cut out and replaced by sound ones at the Contractor's expenses.

5.0 ROOFING

5.1 Roofing

Corrugated Iron roof sheeting shall be 0.7mm thick long span Aluminum of approved with 10/3 corrugation and to comply with the relevant BS laid and fixed with galvanized j- bolts, felt washers in accordance with manufacturers printed instruction and the drawing and instruction,

5.2 Protection

The Contractor is to case up, cover and adequately protect all roofing work from abrasion, impact, acid, alkaline oil or solvents, and is to leave the roof in a sound and clean condition.

6.0 WOODWORK AND IRONMONGRY

6.1 General

All timber for carpenter and joiner's work shall be approved timber properly seasoned, straight cut, free from sap, twists, large loose or dead knots etc. and shall conform to BS 1186 Part I. Sawn timber shall hold the full scantlings specified after being sawn.

Wrought timber shall be finished even, clean and smooth. An allowance of 1.5mm will be made for each wrought face off the size specified unless otherwise stated.

6.2 Workmanship

All workmanship shall be of the best quality. Carpentry and joinery shall be executed in a workmanlike manner and where not fully detailed on the Drawings, to details prepared by the Contractor but with the approval of the FCC assigned engineer and UNCDF's works controller and shall conform to BS 1186 Part II.

All joinery shall be framed up and stacked in a dry place, but it is not to be glued, wedged up or delivered to site until required in the building. Any joinery, which warps or develops shakes or other defect, shall be replaced by new one before being wedged up.

Frames shall be properly jointed at corners and mortised, tenoned and wedged in the best manner.

The Contractor shall provide all nails, brads, screws, glass paper and tools etc. for the proper execution of the works. The heads of all nails, brads, etc. shall be punched below the surface.

The Contractor shall properly execute all fitted ends, mitres, housing, returned ends, junctions of circular ends and straight end as may be necessary. All skirtings, architraves and other joinery shall be accurately scribed to any irregular surface to which they abut.

Hardwood fixing plugs 100 x 75mm minimum size or approved metal holdfast shall be built into the joints of blockwork or cast into concrete for fixing door frames or other joinery at the rate of one 800mm of height. Minimum of 3 fasteners for each side of each doorframe.

The term plugging includes the provision of hardwood plugs of adequate dimension built, or cut and pinned, or cast into the wall surface and planted on.

Unless otherwise described on the Drawings, all joinery is to be fixed by screwing.

6.3 Preservative Treatment

All timber and joinery work not to be painted shall be treated with two coats of coloured wood preservative, or other approved preservative before erection. This includes hidden as well as exposed roof construction.

6.4 Protect Joinery

All fixed joinery, which, in the opinion of the FCC assigned engineer and UNCDF's works controller, is liable to become bruised or damaged in any way shall be completely, cased and protected by the Contractor until the completion of the works.

6.5 Cleaning Up

The Contractor is to clear out and destroy or remove all cut ends, shavings, and other wood waste from all parts of the building and the site generally, as the work progresses and at the conclusion of the work.

6.6 Door and Window Frames

Frames shall be to the sizes and details shown on the Drawings. Frames shall be properly fixed with iron cramps or fixing slips as detailed above under workmanship.

6.7 Plywood

The Plywood to cupboards, etc. shall be a Grade A W.B.P faced with close grained timber free from furry patches.

6.8 Carcassing (wall plates, roof framing, etc.)

Wall plates shall be fixed with ½” (12mm) diameter mild steel rag bolts firmly grouted into the block work beam at (2000mm) centres. All joinery shall be halved. See details Drawings.

All edges, rafters, hips, purlins and other structural woodwork shall be formed from the longest length of timber obtainable.

Where joints are unavoidable, they shall be properly scarfed and wedged, the length of the joint being twice the depth of the member and shall be secured with 12mm diameter mild steel bolt and knots.

6.9 Defective Work

Where defects occur to joints or members generally, including framed and stored joinery, the work shall be taken down and repaired or renewed including any necessary making good and redecoration at the Contractor's expense and to the satisfaction of the FCC assigned engineer and UNCDF's works controller.

6.10 Iron Mongery

Ironmongery shall be supplied from an approved supplier. The ironmongery shall be fixed with matching undamaged screws.

All joinery shall be properly morticed or worked as necessary for fixing the ironmongery.

6.11 Samples

The Contractor shall, if requested, submit samples of all ironmongery for approval before fixing.

6.12 Protection

All ironmongery shall be protected until completion of the works. Any damaged ironmongery shall be repaired or renewed at the Contractor's expense and to the satisfaction of the FCC assigned engineer and UNCDF's works controller.

6.13 Completion

On completion all locks shall be fitted with two keys. The keys shall be properly labelled, paired together and handed to the FCC assigned engineer and UNCDF's works controller.

All ironmongery is to be oiled and adjusted and left in perfect working order.

7.0 STEEL WORK

7.1 Materials

7.1.1 Steel

The steel generally shall comply with BS4360 weldable structural steels. Rolled mild steel section shall comply with BS 4848 Part 4: Equal and

unequal angles. Hollow sections shall comply with BS4848 Part 2: hollow sections.

7.2 Sundries

Black bolts, screws and knots shall comply with BS 4190

Close tolerance precision bolts, screws and plain washers shall comply with BS 3692.

Black taper washers shall comply with BS 3410.

High strength friction grip bolts shall comply with BS 4395.

Electrodes shall be grade 'A' best heavy coated quality and comply with BS 5639.

7.3 Workmanship

7.3.1 Fabrication

Work off-site shall conform with the appropriate Clauses of BS 449: The use of Structural Steel in Building.

All surfaces in contact and all surfaces inaccessible after assembly shall be treated according to these specifications before assembly.

7.3.2 Welding

Welding procedure shall comply with BS 1856, BS 938 and BS 2642 as appropriate.

The equipment to be used shall be of a type, which produces proper current so that the welder can produce satisfactory welds.

Welding in shop and on site shall be carried out by experienced and well qualified welders.

Surface preparation and assembly shall be carried out strictly in accordance with BS 1856 and BS 449 and BS 2642 as appropriate.

7.4 Work on Site

All handling of Works during transport and on the site shall be planned and carried out by the Contractor to proceed in a manner designed to protect the painted surfaces from damage.

All members stored on site shall be laid out on timber sleepers, kept clean and free from construction dirt. Markings on individual members shall be visible when members have been stacked together.

The position of all points of support for structural steelworks shall be set so that the distances between any two points joined by a shop fabricated component of structural steel are within ½" of the required dimension. Individual fabricated members shall conform to a degree of accuracy compatible with the tolerances laid down by this clause.

The position of any column or support wall shall be set out with a tolerance of 1" in 100ft., but no point shall be more than 1" away from the position shown on the Drawings.

The Contractor shall erect temporary bracing as necessary to maintain all structural steel works in the correct position until the structure is complete.

7.5 Site Connections

The site bolting of permanent connections shall conform to BS 449.

Washers shall be provided under all knots and all bolts shall show after tightening at least two clear threads beyond the knot. During the tightening operation, the bolt head shall be prevented from rotating.

Welding on site will not be permitted without the Consultant's written approval.

7.6 Protection Against Corrosion

All mill scale and rust is to be removed by hand in accordance with Clause 505f CP 2008: 1966. Two coats red lead primer are to be applied to all structural steelworks before delivery to site. Any damaged plain surfaces must be made good on site prior to application of a succeeding coat of paint.

Any surfaces, which will be inaccessible after erection, are to be painted before erection.

8.0 METALWORK

8.1 Materials

8.1.1 Steel

Steel shall be as described for structural steel works.

8.1.2 Aluminum

Aluminum extruded sections shall be mill finish with surfaces free from blemishes blur or other defects and shall comply with BS 1474

8.1.3 Sundries

All sundry items shall be as described for structural steel works.

8.1.4 Windows and Doors

The windows and doors are to be generally to the approval of the Consultant. The Contractor shall submit samples of windows, doors and all ironmongery for approval and once approval has been given the quality of the sample must be strictly adhered to.

8.2 Workmanship

8.2.1 Fixing the Windows

The Contractor shall be responsible for the testing of the windows and shall ensure that sashes when opened, are perfectly horizontal and line through with corresponding blades on the façade of the building.

On completion of the works, the Contractor shall leave the window carriers in a clean and perfect working condition to the satisfaction of FCC assigned engineer and UNCDF's works controller.

Provide all necessary supports and fixing such as screws, strips, lugs and dowels.

8.2.2 Grounds for built-in Metalwork

Where metalwork is specified to be "built-in" or inserted in the position they are to occupy after the surrounding or enclosing carcass has been constructed, it shall be the responsibility of the Contractor to ensure that the necessary fixing are incorporated in the carcass.

8.2.3 Alternatively

Construct such ground works as are required to provide a suitable base for the metalwork. Secure built-in metalwork so that they are plump and true to the shape and dimensions shown on the drawings and details. Metalwork shall not be fixed in position until after all floor, wall and ceiling surfaces have been formed or constructed unless otherwise detailed.

8.2.4 Delivery and Fixing

Manufacture, deliver to the site and fix in the buildings all metalwork described in the Bills of Quantities and as shown on the drawings including the supply and fixing of:-

1. All metal straps, lugs, plugs and dowels
2. All on-site and off-site priming.
3. All furniture specified or shown on the drawings.

8.2.5 Protective Coating

All steel that does not have any other form of protective coating, shall be given one coat of red lead oxide for internal work and two coats of red lead oxide for external work, prior to delivery on site and the application of the decorative finish specified.

9.0 PLUMBING INSTALLATION

9.1 Materials and Workmanship

The pipes have been measured nett as fixed and rates shall include for all short

lengths, cutting waste and extra joints.

The rates for fixing UPVC pipework shall include for clips or brackets at centers not exceeding those recommended by the manufacturer.

9.1.1 PVC Pipes and Fixtures

All PVC pipes and fittings for drainage, sanitary, hot and cold-water installation shall be heavy grade as specified by the Consultant or other equal and approved. The installations are to be carried out strictly in accordance with the manufacturer's instructions and recommendations.

All equipment and ancillaries shall be of an approved type and comply with the relevant BS and shall be fixed strictly in accordance with the manufacturer's instructions.

Water storage tanks shall be galvanized steel and shall comply with BS 417, grade A and complete with ball valve, overflow and outlet connections and drain cock.

On completion of the installation and immediately prior to testing the whole of the Installation shall be thoroughly flushed through to remove all dirty water, debris, etc.

All pipework is to be subject to hydraulic test for water pressure in the presence of the FCC assigned engineer and UNCDF's works controller. Such tests are to be applied by test pump and are to comprise a test pressure of 161 lb. per square inch carried for thirty minutes. Leaks or other defects are to be repaired at the Contractor's own expenses and the same test repeated until the whole of the pipework is proved to be completely free from defects to the satisfaction of the FCC assigned engineer and UNCDF's works controller.

The Contractor shall include for marking the positions of all holes, mortises, chases, etc. in the structure for the installation in this Section. Holes through concrete work or blockwork may be formed during construction and the Contractor shall include for all necessary setting out.

10.0 ELECTRICAL INSTALLATION

10.1 General

10.1.1 Scope

The work shall include the supply of all materials, unless otherwise stated, labour, tools and equipment necessary to install, test and commission all the services described in these Bills or as shown on the Contract Drawings.

10.1.2 Standard of Works

The work and all materials and workmanship shall comply with the following:-

1. The Supply Authority (National Power Authority, NPA) Regulations.

2. The current appropriate British Standards and the British Standard Code of Practice for Electrical Installation.

10.1.3 Supply

The electricity supply to the site will be provided by the Supply Authority where applicable and will be of a suitable voltage.

10.1.4 Testing by Supply Authority

The Contractor shall serve all notices, on the Supply Authority for testing, pay all fees in connection therewith, and should any additional charges be made for re-testing, they shall be paid by the Contractor.

10.1.5 Earthing

The whole of the electrical installations and all other equipment connected thereto shall be earthed in conformity with the requirements of the Supply Authority.

10.1.6 Testing Materials and Work

The Consultant shall have full power to require any materials or work to be tested at the Contractor's expense to prove their soundness and efficiency.

The cables, conduits and sheaths shall be tested for installation and continuity in accordance with the Supply Authority Regulations, as the work proceeds, before any connections are made to switch and distribution board terminals. In case any materials or work shall, with or without being tested, be considered defective, such work shall forthwith be amended in a proper and satisfactory manner, on being notified by the FCC assigned engineer and UNCDF's works controller.

10.1.7 Certificates for equipment

Where certificates are required from manufacturers of specialized equipment before handing over, the Contractor shall pay all charges incurred in obtaining these certificates

10.1.8 Position of equipment

The position of all points and equipment shown on the accompanying drawings shall be assumed correct for the purpose of tender, but it is the Contractor's responsibility to check the positions with the drawings which will be available on site. Any variations of position or height may be allowed with extra charge unless such alterations are made after conduits, cables, etc., are fixed.

10.2 MATERIALS AND EQUIPMENT

10.2.1 Ring Main Unit and Transformer

Where applicable the outdoor ground mounting HT transformer shall be as specified and approved by the FCC assigned engineer and UNCDF's works controller.

10.2.2 Feeder Pillar Boxes

The LV transformer pillar-box shall be as specified. It shall be of welded steel weatherproof construction compound type and suitable for 3-core cable up to 105mm² and equipped with the following:

- a. 1NR 800 Amps Unit for incoming transformer cable.
- b. 3Nr 600 Amps distribution unit for outgoing cables.
- c. 1Nr – 3-phase KWH meter and a maximum demand KVA indicator

Each unit shall consist of HRC cartridge fuse-links in porcelain carrier on the phase and a link on the neutral. These are to be mounted on a steel supporting bar by means of porcelain insulators with the bus-bar at the rear of the units and sweating type conductor fittings at the front to enable sweating to be carried out with rear access. The unit shall be provided with mechanical glands for cables.

The distribution load center pillar-boxes shall be multi-service fiberglass cover pillars, non-fused non-disconnecting model with "tee-off" facilities for spur connection from the incoming main and provided with eight outgoing services. They shall be of approved quality. Cable clamps and sockets for 95mm² cables shall be provided on the incoming side of each pillar. The loop connections on each shall be provided with cable clamp and sockets for 70mm² cables for future extension.

10.2.3 Service Cut-out

Outdoor service cut-out shall be heavy-duty ironclad and as specified by the FCC assigned engineer and UNCDF's works controller. They shall be provided with wiping glands, suitable for use with copper conductors and provided with wedge type cartridge fuse links in porcelain carriers.

10.2.4 Distribution Panels

All distribution panels shall consist of substantial sheet cases with hinged doors. This metalwork shall be primed and finished in a good quality stove enamel. Colour finish to BS 318C.

Gaskets shall be fitted to the doors to prevent the ingress of moisture and dust.

The distribution panels shall be supplied with end plates and the Contractor shall drill two extra 25mm diameter holes in each plate over and above those required for the circuits detailed.

The spare holes shall be fitted with hexagonal stopping plugs and locknuts. All neutral bars shall have sufficient ways to enable the maximum number of single-phase circuits to be connected without bunching. Connections to

neutral bars shall be made in such a manner that they correspond to phase connections.

Where distribution panels are installed in locations remote from their controlling switches they shall have 'on load' isolating switches of ratings schedules mounted adjacent to integral panel.

On each distribution panel a circuit list shall be provided on the inside of the panel door, clearly marked in indelible ink.

10.2.5 Conduits

Conduits shall be heavy gauge high impact PVC not less than 15mm external diameter and manufactured to BS 4607. All conduits shall be free from mechanical damage and shall be adequately protected both when on site and when installed in building structure. The Contractor shall be responsible for inspecting the conduit and accessories for damage before the final building finishes are applied.

All joints in conduits shall be made using push-in type of couplers and accessories, assembled with the adhesive supplied by the manufacturer.

Where conduits cross expansion joints, the Contractor shall install expansion couplers at the position of the expansion joint and at right angles to it.

10.2.6 Cables

All cables shall be colour coded in accordance with the Supply Authority Regulations. The extra type of cable shall be as specified on the drawings. The cable types between equipment and/or buildings shall be as specified. No jointing of cables will be permitted.

10.2.7 Cables in Conduit and/or Trunking

The number of cables to be installed in conduits and/or trunking shall be as specified on the drawings and shall not be permitted to exceed that given in the current edition of the IEE Regulations. The Cables shall be installed in such a manner that it is possible to withdraw any number without distributing the remainder. The Contractor must always refer to the derating factors for cable grouping as given in the current IEE Regulations.

10.2.8 Light Fittings

All fittings shall be provided to walkways as directed by the FCC assigned engineer and UNCDF's works controller.

Fluorescent tube lamp shall have Ri-pin Cap.

Lamps shall be installed in lighting fittings immediately prior to practical completion and shall not be used as means of temporary lighting. The

lamps can only be used for test of the lighting installation and during handover inspection.

10.2.9 Socket Outlets

Unless otherwise specified, all general socket outlets shall be rated at 13Amp and be of the three rectangular pin type to BS 1363. 1967.

10.2.10 Lightning Protection

The Contractor shall provide a complete lightning protection system. The whole shall be in accordance with British Standard Codes of Practice No. CP 326.

The position of the whole of the installation shall be agreed with the FCC assigned engineer and UNCDF's works controller before work commences.

10.3 Installation

10.3.1 External

From the LV pillar-box in the sub-station, cables shall be routed underground to secondary pillar-boxes located near the load centers for local distribution.

Details of switchgear, switch fuses and sizes of cables etc. are as indicated on the drawings.

The cables shall be installed at a minimum of 450mm from finished ground level. All cables shall be laid on a minimum of 80mm depth of sand covered with interlocking cables slabs, with further 80mm depth of sand cover over.

The whole are to be backfilled with riddle earth at a depth of 150mm from ground level.

A continuous PVC cable warning tape or equal and approved tape shall then be installed over the length of the run of cable. Then the trench to be finally backfilled.

The Architect shall be notified before backfilling is commenced to allow adequate time for inspection.

Where cables pass under roadways and unless otherwise specified size(s) and depth(s) required are noted on the drawings than these shall be contained in continuous 100mm diameter circular earth on ware ducts as Hepduct or equally approved at minimum depth of 0.75 meters.

Where the route of cable changes direction then a cable marker shall be located at finish ground level. The marker shall be permanent concrete slab at dimensions 400mm x 450mm.

At all intersections and junctions of route of paper insulated cables in ducts and trenches, each cable shall be identified by an engraved level securely fixed to the sheathing of cable. Where the cables enter or leave ducted area adjacent to any joints or where they cross expansion joints, the cable shall be snaked in a manner as to provide 600mm of slack cable.

Cable armoring shall be effectively bonded by means of the armor clamp, with copper tape to the switchgear or other apparatus to which the cable is connected.

The cable cross cores shall be connected to the apparatus by means of mechanical clamp logs.

10.3.2 Intake

In each floor the Contractor shall construct substantial intake panel in the position shown adjacent to the entry position for the service cable and consisting of the number and types of control gear specified.

10.3.3 Lighting sub-circuits

From the distribution panels run PVC insulated cable as specified in concealed PVC conduits to the various lighting points shown on the drawings. Terminate at each point either in plain pendants or in the special fittings specified. Switches shall be of substantial construction and shall be flush and all-insulated. No more than 12 lighting points shall be connected to one fuse way or mob.

10.3.4 Small Power Sub-circuits

From the power distributing panels run PVC insulated cables in concealed PVC conduits as appropriate to the socket outlets shown on the drawings. Socket outlets to be flush and all insulated and wired as ring circuits.

10.3.5 Wiring to machine and fixed appliances

All motors over 0.1KW shall be connected to individual fuse ways or mobs. All motors other than fan motor of less than 0.05KW shall be provided with contractor starter fitted with overload strips and “no-volt release”.

Final connection of motor and other appliances shall be made by means of PVC insulated cables enclosed in concealed PVC conduits as specified. A separate earth wire shall in all cases be run through the conduit and exposed at either end.

10.3.6 Telephone

From the position shown for the Sierratel Telephone entry run heavy gauge PVC conduits as specified to the positions shown and then terminate at a height of 300mm above floor level in a flush box to BS 1363 and an approved telephone socket outlet. Further work on the telephone will be carried out by others.

10.3.7 Heights of Outlets

The Contractor's attention is hereby drawn to the fact that all height of lighting fixtures etc., above finished floor level must be consistent. Care should be taken in respect of distance of switches from door architraves.

Unless otherwise specified on the drawings, all units shall be mounted at the following heights from finished floor level taken to the center of the unit:

- | | |
|-----------------------------------|----------|
| - Lighting switches | - 1400mm |
| - Socket outlets-general | - 300mm |
| - Fuse spur boxes | - 1400mm |
| - Telephone outlets | - 300mm |
| - Motor Central Units | - 1400mm |
| - Individual items to switch gear | - 1400mm |

Generally, switchboard and distribution boards shall be installed so that any item, to which easy access is required such as a fuse, circuit breaker, instrument etc., is not more than 2150mm above finished floor level.

DESCRIPTION AND FUNCTIONS OF MECHANICAL (PLUMBING) FITTING WORKS

Item	Description	Function	
1	Simple Valve	Allow for sampling of raw water	
2	Shut-Off-Valve	Required to allow maintenance of pre-treatment equipment	
3	Pre-treatment Filters	Water Chemistry: Water quality is extremely important for the optimum performance of the UV System. The following levels are recommended for installation	
		Water Quality & Minerals	Level
		Iron	< 0.3 ppm (o.3 mg/L
		Hardness	< 7 gpg (120 mg/L
		Turbidity	< 1 NTU
		Manganese	< 0.05 ppm (o.05 mg/L
		Tannins	< 0.1 ppm (0.1 mg/L
		UV Transmittance, Standard Models	< 75% (call factory for recommendations on applications where UVT < 75%)
		* Where total hardness is less than 7 gpg, the UV unit should operate efficiently provided the quartz sleeve is cleaned periodically. If total hardness exceeds 7 gpg, the water should be softened. If your water chemistry contains levels in excess of those mentioned above, proper pre-treatment is recommended to correct problems prior to the installation of the UV Disinfection System. These water quality parameters can be tested by local dealers, or by most private analytical laboratories.	
		Proper pre-treatment is essential for the UV Disinfection System to operate as intended.	

		Note:- A 5 micron (nominal) sediment filter must be installed before the UV System and after any water softening equipment
4	Bypass Shut-Off-Valve	Bypass line and valve is necessary and intended to provide emergency water supply in for event that the UV System fails
5	Shut-Off-Valve	Required to allow maintenance of UV System
6	Simple Valve	Allows sampling of water entering UV Chamber, necessary in order to confirm water being treated is of adequate quality
7	UV Chamber	Provides disinfection of the water Installing UV System: Prerequisites: • Determine appropriate indoor location of the Controller and Chamber • Ensure adequate clearance above chamber to allow for removal of the lamp and sleeve • Make sure to turn off the main water supply • Mount the system to the wall with appropriate lag bolts through the two mounting holes located on the metal bracket. • Make all necessary plumbing connections
8	Cool Touch Valve	Drains water from the UV Chamber that's been warmed by the lamp during the periods of no flow.
9	Flow Restrictor	Restricts water from flowing over the maximum NSF certified flow rate ensuring an adequate UV dose is maintained.
10	Simple Valve	Allows for sampling of water immediately following UV treatment, necessary in order to confirm proper operation of UV System
11	Shut-Off-Valve	Required to allow maintenance of UV System
12	UV Controller	Powers and control UV lamp and other devices. Provides human interface, displaying information and allowing control inputs (such as muting the audible alarm)
13	Solar Power Source	Provides power to the UV Controller and Submersible Sump pump. For safety reasons the outlet must be protected by a Ground Fault Circuit Interrupter (GFCI) Note: - To protect the UV Controller, a UL1449 certified (or equivalent) transient voltage surge suppressor is required.

TECHNICAL SPECIFICATION OF FIXED SPEED 1.5KW, 230V 50HZ SUBMERSIBLE PRESSURE BOOSTING SUMP PUMPS

Submersible Sump pump, suitable for pumping clean water

Can be installed vertically or horizontally

All steel components are made in stainless steel, EN 1.4301 (AISI 304) or similar, that ensures high

Corrosive resistance. This pump carries drinking water approval.

The pump is fitted with a 1.5 kW motor with sand shield, lip seal, water-lubricated journal bearings and a volume compensating diaphragm.

The motor is a canned type submersible motor offering good mechanical stability and high efficiency. Suitable for temperatures up to 40 °C

The motor is not fitted with a temperature sensor. If temperature monitoring is desired, a Pt1000 sensor can be fitted. The motor is for direct-on-line starting (DOL).

Specifications

Liquid:

Pumped liquid:	Water
Maximum liquid temperature:	40 °C
Max liquid t at 0.15 m/sec:	40 °C

Liquid temperature during operation: 20 °C

Technical:

Head Rating:	1.5 HP
Speed for pump data:	2900 rpm
Rated flow:	5 m ³ /h
Rated head:	70 m
Shaft seal for motor:	LIPSEAL
Curve tolerance:	ISO9906:2012 3B

Materials:

Pump:	Stainless steel EN 1.4301
Impeller:	Stainless steel EN 1.4301
Motor:	Stainless steel DIN W.-Nr. 1.4301 AISI 304

Installation:

Pump outlet:	Rp1 1/2
Motor diameter:	4 inch

Electrical data:

Rated power - P2:	1.5 kW
Mains frequency:	50 Hz
Rated voltage:	1 x 230 V
Rated current:	10.2 A
Starting current:	450 %
Cos phi - power factor:	0,98
Rated speed:	2860 rpm
Start. Method:	direct-on-line
Enclosure class (IEC 34-5):	IP68
Insulation class (IEC 85):	B
Built-in temperature Transmitter:	no

Others:

Minimum efficiency index, MEI $\geq$:	0.56
ErP status:	EuP Standalone/Prod.
Net weight:	16.5 kg
Gross weight:	18.3 kg
Shipping volume:	12 m ³

Features and benefits

- High efficiency
- Long service life as all components is stainless steel
- Motor protection via CU 3 or similar

PV OFF GRID SOLAR POWER SERVICES INSTALLATION

Design Methodology of Off-Grid PV Solar Powered System

1. Standalone or Off-Grid Systems

The proposed Standalone or Off-Grid Systems the FCC Project is the system not relating to the grid facility. Primarily, the system which is not connected to the main electrical grid is term as off-grid PV system (Weis, 2013). Off-grid system also called standalone system or mini grid which can generate the power and run the appliances by itself. Off-grid systems are suitable for the electrification of small community installations. Off-grid electrification system is viable for the remote areas in the countries where they do have little or no access to the electricity because of the distinct living and spread population in the vast area. The off-grid system refers to the support that would be adequate for a living without depending on the grid or other system. Electrical energy in the off-grid system produced through the Solar photovoltaic panels needs to be stored or saved because requirement from the load can be different from the solar panel output, battery bank is also used for the purpose generally.

This project is considering the viability of having an off-grid PV system which can be used to power the proposed placement of 5,000 Liters Storage Tank Water Kiosks for the Freetown City Council.

This concept can also be utilized on a larger scale to support all types of community's installation which is in remote areas and where the cost of connecting cables and other infrastructure of electricity to the installations is expensive.

There is a cost associated with electrifying installations in rural areas that increases with distance between the grid and the installations. Such instances where the cost of electrification becomes enormously highly one can always use an off-grid PV system. Both types of systems viz. grid-tied and off-grid PV systems have their own advantages and disadvantages. Depending solely on the need one can decide what they would want to go for. It is trending that one can observe is that the grid-tied system is mostly found in urban and sub-urban setting where electrification of the area has already been achieved. The off-grid system is more suited to areas where the electrification is yet to be accomplished and/or the consumer chooses not to supply back the energy generated at his/her end. This design provides the methodology of designing an off-grid PV system that would power and operates certain necessary equipment in the facility such as Submersible Water Well Pump, UV Disinfection Chamber, Lights and Socket that would provide service to the community who would be using it.

2. System Designed Requirement and Specifications:

A Solar Monocrystalline Panels

Solar Monocrystalline 360W

- Low voltage-temperature coefficient enhances high-temperature operation.
- Exceptional low-light performance and high sensitivity to light across the entire solar spectrum.
- 25-Year limited warranty on power output and performance.
- 5-Year limited warranty on materials and workmanship.

- Sealed, waterproof, multi-functional junction box gives high level of safety.
- High performance bypass diodes minimize the power drop caused by shade.
- Advanced EVA (Ethylene Vinyl Acetate) encapsulation system with triple-layer back sheet meets the most stringent safety requirements for high-voltage operation.
- A sturdy, anodized aluminum frame allows modules to be easily roof-mounted with a variety of standard mounting systems.
- Highest quality, high-transmission tempered glass provides enhanced stiffness and impact resistance.
- High power models with pre-wired quick-connect system with MC4 (PV-ST01) connectors.

Technical Specifications of Solar Monocrystalline Panels

Description	Net Weight	Electrical data under STC (1)				
		Nominal Power	Max-Power Voltage	Max-Power Current	Open-Circuit Voltage	Short-Circuit Current
		PMPP	VMPP	IMPP	Voc	Isc
	Kg	W	V	A	V	A
360W-24V Mono 1956 x 992 x 40mm series 4a	22	360	38.4	9.38	47.4	

Nominal Power ($\pm 3\%$ tolerance)	360W
Cell type	Monocrystalline
Number of cells in series	72
Maximum system voltage	1000V
Temperature coefficient of MPP (%)	-0.45/°C
Temperature coefficient of Voc (%)	0.35/°C
Temperature coefficient of Isc (%)	+0.04/°C
Temperature Range	40°C to +85°C
Surface Maximum Load Capacity	200 kg/m ²
Allowable Hail Load	23 m/s, 7.53 g
Junction Box Type	PV-JB002
Length of Cables / Connector Type	900 mm MC4
Output tolerance	+/-3%
Frame	Aluminum
Product warranty	5 years
Warranty on electrical performance	10 years 90% + 25 years 80% of power output
1) STC (Standard Test Conditions): 1000 W/m ² , 25°C, AM (Air Mass) 1.5	

B. Inverter Smart 24/3000

The Inverter is an efficient and reliable inverter. Built on our proven and field-tested inverter platform, it now comes with a new slimmer design and full metal casing. Models are available in 1600VA and 2000VA for 12, 24 or 48V systems.

It is powerful enough to supply most common plug-in appliances in your car, boat, caravan or home. A toroidal transformer provides a high peak power surge capacity, stable voltage, frequency and high-quality sinewave. Installation is simpler than ever before with terminals now more accessible for the installer, enabling a more professional finish. Bluetooth is built-in and makes setting up your high power inverter easier than ever before. Configure alarms, alarm relay, voltage cut-off, output voltage, frequency, eco-mode and more, all from within Connect.

Inverter 24/3000 Smart - 230V

Bluetooth built-in: fully configurable with a tablet or smartphone

- Low battery voltage alarm
- Low battery voltage cut-off and restart levels
- Dynamic cut-off: load dependent cut-off level
- Output voltage: 210 - 245V
- Frequency: 50 Hz or 60 Hz
- ECO mode on/off and ECO mode sense level
- Alarm relay

Monitoring:

- In- and output voltage, load and alarms

VE.Direct communication port

The VE.Direct port can be connected to a computer (VE.Direct to USB interface cable needed) to configure and monitor the same parameters.

Proven reliability

The full bridge plus toroidal transformer topology has proven its reliability over many years. The inverters are short circuit proof and protected against overheating, whether due to overload or high ambient temperature.

High start-up power

Needed to start loads such as power converters for LED lamps, halogen lamps or electric tools

ECO mode

When in ECO mode, the inverter will switch to standby when the load decreases below a pre-set value. Once in standby the inverter will switch on for a short period every 2,5 seconds (adjustable). If the load exceeds the pre-set level, the inverter will remain on.

Remote on/off

A remote on/off switch or relay contact can be connected to a two-pole connector.

Alternatively, the H terminal (left) of the two-pole connector can be switched to battery plus, or the L terminal (right) of the two pole connector can be switched to battery minus (or the chassis of a vehicle, for example).

LED diagnosis

Please see manual for a description.

To transfer the load to another AC source: the automatic transfer switch

For our low power inverters, we recommend our Filax Automatic Transfer Switch. The Filax features a very short switchover time (less than 20 milliseconds) so that computers and other electronic equipment will continue to operate without disruption. Alternatively use a MultiPlus with built-in transfer switch.

Inverter Smart	24/3000
Parallel and 3-phase operation	No
INVERTER	
Input voltage range	9.3 – 17V 18.6 – 34V 37.2 – 68V
Output	Output voltage: 230 VAC $\pm 2\%$ 50 Hz or 60 Hz $\pm 0.1\%$ (1)
Cont. output power at 25°C (1)	3000 VA
Cont. output power at 25°C	2400 W
Cont. output power at 40°C	2200 W
Cont. output power at 65°C	1700 W
Peak power	6000 W
Dynamic (load dependent) DC low shut down (fully configurable)	Dynamic cut-off,
Max. efficiency 12/ 24 /48 V	93 / 94 / 95%
Zero load power 12 / 24 / 48 V	12 / 13 / 15 W
Zero load power in ECO mode	1.5 / 1.9 / 2.8 W
GENERAL	
Programmable relay (2)	Yes
Stop & start power ECO-mode	adjustable
Protection (3)	a - g
Bluetooth wireless communication	For remote monitoring and system integration
VE.Direct communication port	For remote monitoring and system integration
Remote on-off	Yes
Common Characteristics	Operating temperature range: -40 to +65°C (fan assisted cooling) Humidity (non-condensing): max 95%
ENCLOSURE	
Common Characteristics	Material & Color: steel (blue RAL 5012; and black RAL 9017) Protection category: IP21
Battery-connection	12 V/24 V: 2+2 M8 bolts
230 V AC-connection	Screw terminals
Weight	19kg
Dimensions (h x w x d)	485 x 285 x 150mm (24 V)

STANDARD	
Safety	EN 60335-1
Emission Immunity	EN 55014-1 / EN 55014-2 / EN-IEC 61000-6-1 / EN-IEC 61000-6-2 / EN-IEC 61000-6-3
Automotive Directive	ECE R10-5 ECE R10-5
1) Non-linear load, crest factor 3:1 2) Programmable relay that can a.o. be set - For general alarm, DC under voltage or - Genset - Start/stop function - AC rating: 230 V / 4 A - DC rating: 4 A / 35 VDC, 1 A / 60VD g) input	3) Protection key: a) output short circuit b) Overload c) Battery voltage too high d) Battery voltage too low e) Temperature too high f) 230 V AC on inverter output voltage ripple too high

C. Charge Controllers MPPT 100/30 & 100/50

Ultrafast Maximum Power Point Tracking (MPPT)

Especially in case of a clouded sky, when light intensity is changing continuously, an ultra-fast MPPT controller will improve energy harvest by up to 30% compared to PWM charge controllers and by up to 10% compared to slower MPPT controllers.

Advanced Maximum Power Point Detection in case of partial shading conditions

If partial shading occurs, two or more maximum power points may be present on the power-voltage curve.

Conventional MPPTs tend to lock to a local MPP, which may not be the optimum MPP. The innovative BlueSolar algorithm will always maximize energy harvest by locking to the optimum MPP.

Outstanding conversion efficiency

No cooling fan. Maximum efficiency exceeds 98%.
The full output current up to 40°C (104°F).

Flexible charge algorithm

Fully programmable charge algorithm (see the software page on our website), and eight pre-programmed algorithms, selectable with a rotary switch (see manual for details).

Extensive electronic protection

Over-temperature protection and power derating when temperature is high
PV short circuit and PV reverse polarity protection.
PV reverse current protection.

Internal temperature sensor

Compensates absorption and float charge voltage for temperature.

Real-time data display options

- Color Control GX or other GX devices:
- A smartphone or other Bluetooth-enabled device:
- VE.Direct Bluetooth Smart dongle needed.

Technical Specifications of Blue Solar Charge Controllers MPPT 100/30 & 100/50

Solar Charge Controller	MPPT 100/50
Battery voltage	12/24V Auto Select
Rated charge current	50A
Nominal PV power 12V 1a,b)	700W
Nominal PV power, 24V 1a,b)	1400W
Maximum PV open circuit voltage	100V
Max. PV short circuit current 2)	60A
Maximum efficiency	98%
Self-consumption	12V: 30 mA, 24V: 20 mA
Charge voltage 'absorption'	Default setting: 14,4V / 28,8V (adjustable)
Charge voltage 'float'	Default setting: 13,8V / 27,6V (adjustable)
Charge algorithm	multi-stage adaptive
Temperature compensation	-16 mV / °C resp. -32 mV / °C
Protection Operating temperature	Battery reverse polarity (fuse, not user accessible) PV reverse polarity, Output short circuit, Over temperature
Operating temperature	-30 to +60°C (full rated output up to 40°C)
Humidity	95%, non-condensing
Data communication port	95%, non-condensing
Data communication port	See the data communication white paper on Victron website
ENCLOSURE	
Colour	Blue (RAL 5012)
Power terminals	13 mm ² / AWG6
Protection category	IP43 (electronic components), IP22 (connection area)
Weight	1,3 kg
Dimensions (h x w x d)	130 x 186 x 70 mm
STANDARDS	
Safety	EN/IEC 62109-1, UL 1741, CSA C22.2
1a) If more PV power is connected, the controller will limit input power. 1b) PV voltage must exceed Vbat + 5V for the controller to start. Thereafter minimum PV voltage is Vbat + 1V. 2) A PV array with a higher sort circuit current may damage the controller	

D. 12V/220Ah AGM Deep Cycle Battery (M8) BAT412201085

Gel and AGM batterie

VRLA AGM: design life 7-10 years

VRLA GEL: design life 12 years

The AGM range has very low internal resistance making them particularly suitable for high current discharge applications such as for inverters, thrusters and winches.

Description

12V/240Ah AGM Deep Cycle Battery (M8) BAT412124081

Gel and AGM batteries

VRLA AGM: design life 7-10 years

The AGM range has very low internal resistance making them particularly suitable for high current discharge applications such as for inverters, thrusters and winches.

The GEL model range offers best deep cycle durability and overall longer life. The use of high purity materials and lead calcium grids ensure that for both AGM and GEL products have particularly low self-discharge so that they will not go flat during long periods without charge. Both ranges are supplied with M8 drilled, flat copper terminals ensuring best possible connection contact and eliminating the need for battery terminals. The batteries are compliant with both CE and UL specifications in ABS fireproof containers and come with 2 year world-wide warranty.

1. VRLA technology

VRLA stands for Valve Regulated Lead Acid, which means that the batteries are sealed. Gas will escape through the safety valves only in case of overcharging or cell failure. VRLA batteries are maintenance free for life.

2. Sealed (VRLA) AGM Batteries

AGM stands for Absorbent Glass Mat. In these batteries the electrolyte is absorbed into a glass-fibre mat between the plates by capillary action. As explained in our book 'Energy Unlimited', AGM batteries are more suitable for short-time delivery of high currents than gel batteries.

3. Sealed (VRLA) Gel Batteries

Here the electrolyte is immobilized as gel. Gel batteries in general have a longer service life and better cycle capacity than AGM batteries.

4. Low Self-Discharge

Because of the use of lead calcium grids and high purity materials, batteries can be stored during long periods of time without recharge. The rate of self-discharge is less than 2% per month at 20°C. The self-discharge doubles for every increase in temperature by 10°C. VRLA batteries can therefore be stored for up to a year without recharging, if kept under cool conditions.

5. Exceptional Deep Discharge Recovery

VRLA batteries have exceptional discharge recovery, even after deep or prolonged discharge.

Nevertheless repeatedly deep and prolonged discharge has a very negative effect on the service life of all lead acid batteries, batteries are no exception.

6. Battery Discharging Characteristics

The rated capacity of AGM and Gel Deep Cycle batteries refers to 20-hour discharge, in other words: a discharge current of 0,05 C.

Discharge time (Constant current)	End Voltage V	AGM 'Deep Cycle' %	Gel 'Deep Cycle' %
20 hours	10,8	100	100
10 hours	10,8	92	87
5 hours	10,8	85	80
3 hours	10,8	78	73
1 hour	9,6	65	61
30 min.	9,6	55	51
15 min.	9,6	42	38
10 min.	9,6	38	34
5 min.	9,6	27	24
5 seconds		8 C	7 C

Effective capacity as a function of discharge time
(The lowest row gives the maximum allowable 5 seconds discharge current)

7. Effect of temperature on service life

High temperature has a very negative effect on service life. The service life of the batteries as a function of temperature is shown in table below

Average Temperature	AGM 'Deep Cycle' years	Gel 'Deep Cycle' years
20°C / 68°F	7 - 10	12
30°C / 86°F	4	6
40°C / 104°F	2	3

Design service life of batteries under float service

Disadvantages of the traditional 3-step charge curve:

- During the bulk phase the current is kept at a constant and often high level, even after the gassing voltage (14,34V for a 12V battery) has been exceeded. This can lead to excessive gas pressure in the battery. Some gas will escape through the safety valves, reducing service life.
- Thereafter the absorption voltage is applied during a fixed period, irrespective of how deep the battery has been discharged previously. A full absorption period after a shallow discharge will overcharge the battery, again reducing service life (a.o. due to accelerated corrosion of the positive plates).
- Research has shown that battery life can be increased by decreasing float voltage to an even lower level when the battery is not in use.

8. Battery charging: longer battery life with 4-step adaptive charging developed the adaptive charge curve. The 4-step adaptive charge curve is the result of years of research and testing.

The four-step adaptive charge curve solves the 3 main problems of the 3-step curve:

- **Battery Safe Mode**
To prevent excessive gassing, has invented the 'Battery Safe Mode'. The Battery Safe Mode will limit the rate of voltage increase once the gassing voltage has been reached. Research has shown that this will reduce internal gassing to a safe level.
- **Variable absorption time**

Based on the duration of the bulk stage, the charger calculates how long the absorption time should be in order to fully charge the battery. If the bulk time is short, this means the battery was already charged and the resulting absorption time will also be short, whereas a longer bulk time will also result in a longer absorption time.

- **Storage mode**

After completion of the absorption period the battery should be fully charged, and the voltage is lowered to the float or standby level. If no discharge occurs during the next 24 hours, the voltage is reduced even further and the battery goes into storage mode. The lower storage voltage reduces corrosion of the positive plates.

Once every week the charge voltage is increased to the absorption level for a short period to compensate for self-discharge (Battery Refresh mode).

9. Battery charging in case of standby use: -constant voltage float charging

When a battery is not frequently deeply discharged, a 2-step charge curve can be used. During the first phase the battery is charged with a limited current (the bulk phase). Once a pre-set voltage has been reached the battery is kept at that voltage (the float phase).

This charge method is used for starter batteries in vehicles and in uninterrupted power supplies (UPS).

10. Optimum charge voltage of VRLA batteries

The recommended charge voltage settings for a 12V battery are shown in table 3.

11. Effect of temperature on charging voltage

The charge voltage should be reduced with increased temperature. Temperature compensation is required when the temperature of the battery is expected to be less than 10°C / 50°F or more than 30°C / 85°F during long periods of time.

The recommended temperature compensation for VRLA batteries is -4 mV / Cell (-24 mV /°C for a 12V battery).

The center point for temperature compensation is 25°C / 70°F.

12. Charge current

The charge current should preferably not exceed 0,2C (20A for a 100Ah battery). The temperature of a battery will increase by more than 10°C if the charge current exceeds 0,2C. Therefore, temperature compensation is required if the charge current exceeds 0,2C.

	Float Service (V)	Cycle service Normal (V)	Cycle service Fastest recharge (V)
AGM 'Deep Cycle'			
Absorption		14,2 - 14,6	14,6 - 14,9
Float	13,5 - 13,8	13,5 - 13,8	13,5 - 13,8
Storage	13,2 - 13,5	13,2 - 13,5	13,2 - 13,5
Gel 'Deep Cycle'			
Absorption		14,1 - 14,4	
Float	13,5 - 13,8	13,5 - 13,8	

Storage	13,2 - 13,5	13,2 - 13,5	
---------	-------------	-------------	--

11.0 FLOOR, WALL AND CEILING FINISHES

11.1 Materials

Cement shall be ordinary Portland Cement to BS 12.

Colored cement shall also be of BS 12 and shall be obtained from an approved manufacturer.

Sand shall be sea or pit sand to BS 1199.

Water shall be clean and free from impurities.

Glazed wall tiles and fittings shall be to BS 1281.

Ceramic floor tiles and fittings shall be to BS 1286: 1974.

PVC (vinyl) asbestos floor tiles shall be to BS 3260.

Terrazzo floor tiles shall be to BS 4131.

Acoustic for ceilings shall be the best quality as specified

Adhesive shall be of approved types.

11.1.1 Storage

All cement and aggregates shall be stored in accordance with the provisions set out in Concrete Work. If the materials become damaged or are contaminated or have deteriorated, they shall be rejected and shall be removed from the site immediately at the Contractor's expense.

11.1.2 Samples

Samples of all tiles and other materials shall be submitted to the FCC assigned engineer and UNCDF's works controller for approval before ordering.

A sample panel of any finishing shall be prepared for approval, if directed. The applied finish shall not vary in quality or color from the approved sample.

12.0 Workmanship

11.2.1 Rendering

Adequate drying time shall be allowed for block walls and concrete surfaces to thoroughly dry before rendering and no rendering shall commence until the walling and concrete is thoroughly matured and completely dried out surfaces to be rendered shall have the wall joints raked out to a depth of 10mm and concrete surfaces shall be hacked to form a key. All surfaces should then be thoroughly brushed down with a wire brush to remove any efflorescence and all loss and flaky particles, grease or oil patches and then well soaked with water.

The Contractor shall allow for and perform any necessary dubbing out of surfaces in the same materials as the render specified and leave the surface ready for rendering.

Rendering shall consist of one part cement to six parts of sand by volume mixed dry with sufficient water added to make a workable consistency for immediate use; each

batch shall be used within twenty minutes of mixing, or such shorter period as may be directed.

Rendering shall not be less than 12mm thick overall, unless otherwise directed, generally executed in the best workmanlike manner and shall be finished fair, true and plump and smooth with a wood float.

Before decoration commences, the Consultant shall approve all plasterwork and any hollow areas, crack, blisters or other defects shall be cut out and made good at the Contractor's expense.

All making good shall be cut out to a rectangular shape with undercut edges to form a dovetail key, and shall be finished flush with surrounding rendering.

All arises and internal angles shall be true level or plump. Angles and arises shall be pencil round only. Covered angles and rounded edges will only be permitted when specifically required.

Finishings around pipes, brackets, fittings and up to frames, skirting and the like shall be made good as required and all fittings etc., left clean, tidy and in good perfect order on completion.

11.2.2 Wall Tiles

The walls shall be prepared for tiling in accordance with the recommendation of BS 5385: Part 1: 1976.

Glazed ceramic tiles shall be fixed to rendered surfaces with an approved adhesive in accordance with the manufacturer's instructions and finished true and plump. External angles and exposed top courses shall be provided with round top edge tiles.

11.2.3 Cement and Sand Beds and Backings

The cement and sand shall be mixed in the proportions specified. Immediately before laying, the surface shall be finished over with a grout of one part of cement to one part of fine sand by volume.

The paving shall be placed, levelled with a float, and thoroughly compacted with screeding board. Surfaces shall be finished as described appropriate for the finishing materials to be laid or fixed.

Beds shall be kept damp for at least seven days after laying to allow for proper curing.

11.2.4 Vitrified Colour Ceramic Floor Tiles

Lay tiles strictly in accordance with the manufacturer's instruction and to the satisfaction of the FCC assigned engineer and UNCDF's works controller using adhesive specified by the manufacturer.

On completion, run over tiles with a white cement grout, wipe off all surplus and leave clean.

11.2.5 PVC Vinyl Asbestos Floor Tiles

The cement and sand troweled bed to receive PVC tiles must be absolutely level and to the satisfaction of the FCC assigned engineer and UNCDF's works controller before tiling may commence.

Lay the tiles strictly in accordance with the manufacturer's instructions using adhesive specified by the manufacturer. All tiles must be laid to the complete satisfaction of the FCC assigned engineer and UNCDF's works controller.

11.2.6 Softboard Ceiling

Softboard to ceiling shall be as specified and fixed as shown on the drawings to the complete satisfaction of the FCC assigned engineer and UNCDF's works controller.

12.0 GLAZING

12.1 Materials

12.1.1 Glass

The glass shall be to BS 952; 1964 and free from all defects. Deliver glass to site in proper containers with maker's name, guarantee, type of glass and thickness or weight marked on the outside of the containers. Samples of glass are to be supplied for approval, if required.

12.1.2 Putty

The putty to be metal casement putty by an approved manufacturer. Deliver putty (and glazing compounds) in original sealed tins, bearing the manufacturer's labels.

12.1.3 Mirrors

Mirrors shall be 6mm silvering quality polished plate or float glass with damp-proof coating to back and with polished edges.

12.2 Workmanship

12.2.1 Glazing

Execute all glazing in accordance with the best practices of the trade, generally as laid out in CP 152: 1966.

Timber rebates to be cleaned, primed and painted one coat lacquer. Metal rebates to be cleaned and primed. Glass to be cut to size with a small clearance and to be back puttied, pegged for metal rebates and neatly front puttied. Take care to ensure putty does not appear beyond sight lines.

Glass to internal doors and screens and other places where vibration may occur shall be bedded in wash-leather with beds, fixed with brass and sups and screws.

Glaze all windows except toilet windows with float sheet glass as specified.
Glaze toilet windows generally with obscured glass as specified.

12.2.2 Louvre Blades

Carefully cut louvre blades to exact lengths, all edges and corners ground smooth and rounded and set blades in louvre clips, which shall then be carefully adjusted to hold blades without rattling.

12.2.3 Clearing

Clean the glass inside and outside on completion to the satisfaction of the FCC assigned engineer and UNCDF's works controller. Replace with new, all cracked, scratched, damaged or defective glass.

12.2.4 Replacement

Provide 1 box per floor of each type of louvre blades specified and hand over to employer on completion.

13.0 PAINTING AND DECORATING

13.1 Generally

13.1.1 Climate

Advise the manufacturers that the paint is to be used in a coastal tropical climate and obtain their guarantee of the suitability of materials supplied.

13.1.2 Workmen

None other than skilled workmen are to be employed, except apprentices and labourers. A properly trained foreman is to be constantly on the job whilst the work is proceeding.

13.1.3 Scaffolding

Provide all the necessary scaffolding, tools, appliances and everything else required for the execution of the work.

13.1.4 Dust Sheets

Provide ample supply of clean dust sheets for the adequate protection of floors, fixtures and surfaces not to be painted.

13.1.5 Fittings

All metal fittings and fastenings not to be painted are to be removed before the preparatory processes are commenced, cleaned and refixed in position on completion. Switches and similar items, which cannot conveniently be removed, shall be completely masked during the painting operations.

13.2 Materials

All paints and paint materials shall be obtained from approved supplier and be of approved brands suitable for a coastal tropical area.

Primer for concrete, blockwork and rendered surfaces shall be alkali resisting pigmented primer (non-saponifiable) applied in one coat.

Primer for ungalvanized, unprimed metalwork shall be leadbased priming paint to BS 2523, Type B or Type C.

Primer for galvanized and sheradised metalwork shall be calcium plumbate primer to BS 3698 Type A.

Primer for woodwork shall be lead free primer to suite the gloss paint.

Linseed oil to be BS 242; 1969.

Stopping to be composed of nine parts putty in accordance with BS 544 to one part of stiff white lead in accordance with BS 238; 1967.

Knotting to be to BS 1366; 1971.

Woodfiller to be paste type as approved to matching stain color. Do not mix filler with stain.

Turpentine to be to BS 244; 1962.

Emulsion paint shall be any one of the following types: acrylic polymer, ethylene/vinyl acetate polymer, versatate co-polymer and shall not be diluted with water except in strict accordance with the manufacturer's instructions. The mist coat shall be mixed with a recommended petrifying liquid instead of water.

Gloss paint shall be ready mixed to the type approved and having a high gloss or enamel finish. The quality used shall be either exterior or interior quality according to the position of the work. The manufacturer's recommended undercoating shall be used.

Proprietary types of paint such as shall be from approved manufacturers.

Deliver paint to the site in the manufacturer's sealed containers bearing the manufacturer's names, guarantees, type of paint and quality mark on the outside.

13.3 Workmanship

13.3.1 Painting Schedule

A painting schedule will be provided prior to the execution of the work to enable work to proceed at the appropriate time. The schedule will give all the necessary information on color, type of paint, surfaces to be coated and method of application.

13.3.2 Combination Coats

Paints and finishes, applied in any one combination of coats for any one surface, shall be provided by one manufacturer and be guaranteed by him to be satisfactory when used in successive coats, except for red lead and other metal primer.

13.3.3 Mixing

All paints shall be thoroughly mixed before use, unless there is a specified instruction to the contrary on the container e.g. does not stir. They shall be so stored as to avoid exposure to extremes of temperature.

All paints are to be mixed, used and applied strictly in accordance with their manufacturers' recommendations. For non-specified paints, work shall be executed in accordance with the best practices of the trade, generally as laid out in CP 231; 1966.

13.3.4 Thinning

Paints shall not be thinned without specified approval but, when necessary, thinning shall be carried out with the type of thinner and in the proportion recommended by the manufacturers of the paint. Gloss paints and varnishes shall not be thinned under any circumstances.

13.3.5 Moulds and Mildew

All moulds or mildew must be thoroughly removed from surfaces to receive paint work by the application of approved fungicidal solution.

13.3.6 Application

Primers shall be applied by brush, subsequent coats by brush, spray or roller as has been previously agreed. Surfaces must be free from condensation and dusted or wiped with a rag to ensure freedom from dust or dirt.

Surfaces shall be evenly coated and free from runs, skins, dirt and bristles. Remove all drips, splashes and overpainting to edges, touch up and make good. Remove all finger marks and leave clean.

13.3.7 Dried and Rubbed Down

All coats of paint shall be thoroughly dry before the subsequent coat is applied. Each coat shall be rubbed down with fine sandpaper.

13.3.8 Weather

No painting is to be done on exterior work when atmosphere is laden with dust, during rainy or misty weather or on surfaces not thoroughly dry.

13.3.9 Protection

Protect adjacent surfaces from damage, stain and paint splatter. Paint shall be removed from all such surfaces where not required.

13.3.10 Rendered Surfaces (Concrete)

New rendered surfaces shall be allowed the maximum time possible for drying out, no paint shall be applied until they are thoroughly dry. Efflorescence present on the surface shall be wiped down using a dry coarse rag, followed by a rag dampened with clean water and allowed to dry off. Surface so treated shall be inspected after four to seven days to ensure that they are fit for decoration. Each undercoat shall be rubbed down lightly with glass paper and cleaned down before application of the following coats. Each coat shall be hard, dry and free from condensation before the next is applied.

13.3.11 Woodwork

Shall not be painted when wet or during or immediately before rains. Joints, tongues, grooves, and inaccessible ends shall be primed before assembly. Door and window frames, etc., shall be back primed before erection and given two coats on exposed end grains. Woodwork to be painted shall be knotted, primed, and stopped in workshop before delivery to the site or as soon as possible on site and stored. All top, bottom and side of joinery shall be given the full number of coats specified where accessible.

Large knots to be removed and replaced with sound wood; small knots to be treated with two coats of knotting. Fill all holes and irregularities and rub down with sandpaper to a smooth even finish. Touch up priming where damages occur during the works before commencing painting.

Hardwood not required to be painted, clean and rub down with wire wool, apply one coat of polyurethane and allow to dry. Rub down with wire wool again and apply a further coat of polyurethane; allow to dry and repeat the process once more.

13.3.12 Metalwork

All unprimed metalwork which is to be painted shall be cleaned down by wire brushing and scrapping, to remove all possible scale, dirt or grease and shall be primed immediately afterwards.

Prime interior of metalwork with one coat red lead.

Prime exterior metalwork (including stair rails and balustrades) with two coats “approved primer”, strictly in accordance with manufacturer’s instruction.

Where galvanized surfaces have become damaged, the Contractor shall touch up the damaged areas with an approved cold galvanizing solution before painting.

Mechanical Installation FORM (to be included within the technical offer):

Names of the Manufacturers / Suppliers of the Plant, Equipment and Materials included

Plant, Equipment, Materials	Proposed Alternative Manufacturer/Supplier (Country of Origin)
1. Pump:	

• 1.5kW 1x230V 50Hz Fixed Speed Submersible Pressure Boosting Submersible Pump for civil use in Water Well (Cold Water Supply) with automatic operation pump, with suction and delivery manifolds, gate and non-return valves, pressure switches, pressure gauge, and control panel complete with all necessary installation materials and accessories to complete the installation.	
2. Raw & Purified Water Delivery Tank: • 5m³ MDPE Black Raw Water Holding Tanks + Fittings & Accessories (5,000 Litter. Cold water Raw Holding tank)	
2. Delivery Tank: • 3m³ MDPE Black Purified Water Delivery Tank + Fittings & Accessories. (3,000 Liters Cold water delivery tank)	
3. High Resilience Polypropylene Pipes: • Polypropylene (PPR) Pipes and Fittings	
4. Electric Cable: • 2.5mm² 3-core XLPE Armored cable complete with cable gland and accessories	
4. PV Solar Power Equipment • Panels • Inverter 24/3000 • Charge Controllers 100/30 & 100/50 • 12V/220Ah AGM Deep Cycle Battery (M8) BAT412201085	

Note: *All the materials shall be BS/EN/ NFPA marked wherever, wherever the BS/EN/ NFPA marked materials are not available, the materials shall be from the best quality available in the market, subject to submission of satisfactory test report with prior approval from the Project Architect.*

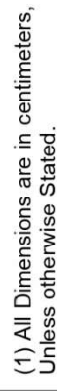
To form a complementary part of the technical offer

Signed: Date:

For...

Position:

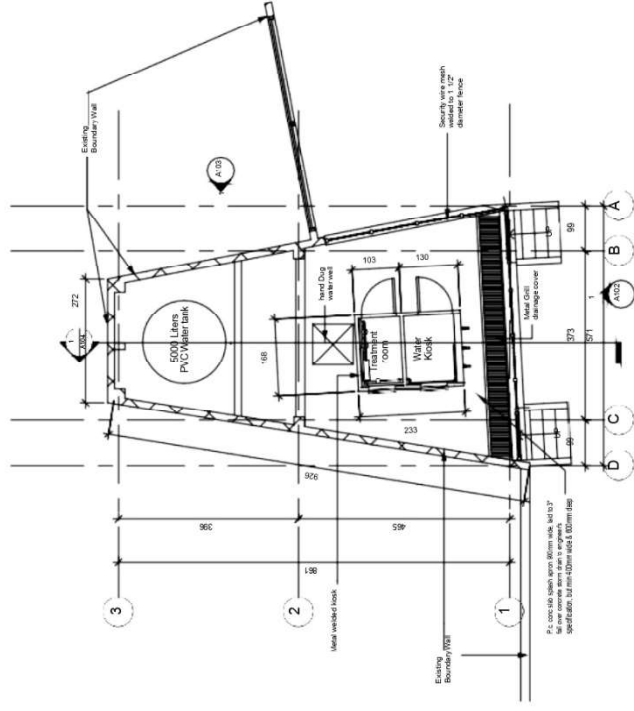
Water kiosks



1
1 : 100

Alternative 1 Side Elevation
1 1:100

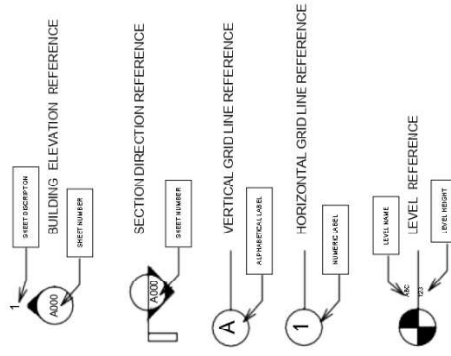
FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title: PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE Project Status	Drawing Title: ALTERNATIVE 1 SIDE ELEVATION	GENERAL Project status: Design X Tender Construction Drawing Title: Alternative 1 Side Elevation
--	--	---	---



Alternative 1 Floor Plan

1 : 100

Legend



NOTE

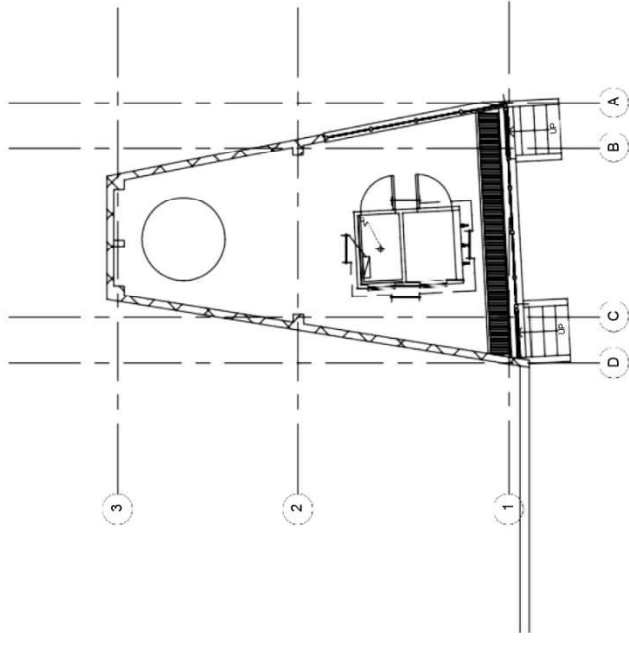
(1) All Dimensions are in centimeters,
Unless otherwise Stated.

Client FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE	Drawing Title ALTERNATIVE 1 FLOOR PLAN	GENERAL	K B A Kralani Bader Associates Limited 72 Wellington Street, Freetown	Architects Engineers Planners			
	Project Status Project Status	Project Title			Date: 25/08/22			
					Drawn by: SHY			
					Checked by: SHY			
			Scale: 1 : 100	Printed: 30/08/2022 4:12:08 PM	A100			



1 : 100

FREETOWN CITY COUNCIL
AND
UNITED NATIONS CAPITAL
DEVELOPMENT FUND



Legend

- A ——— VERTICAL GRID LINE REFERENCE
- 1 ——— HORIZONTAL GRID LINE REFERENCE
- Cable
- 60cm long security fluorescent bulb
- 6 - way SP Consumer unit
- ⊕ Pendent Light
- 1 One Gange One way switch

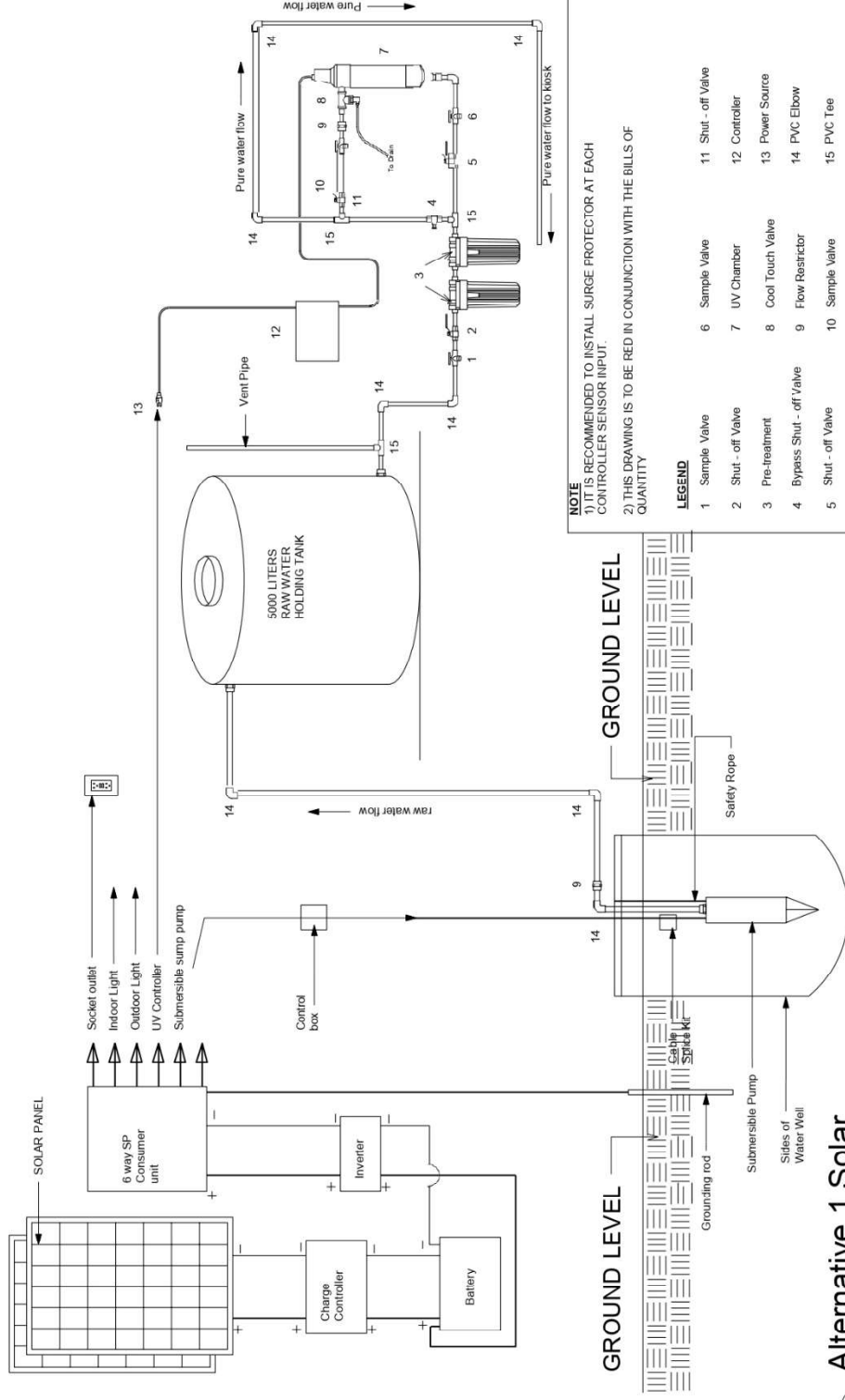
NOTE

- (1) All Dimensions are in centimeters, Unless otherwise Stated.
- (1) This drawing is to be read in conjunction with the bills of quantity

Alternative 1 Electrical Layout Plan

1 : 100

Client: FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title: PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE	Drawing Title: ALTERNATIVE 1 ELECTRICAL LAYOUT PLAN	General Realini Bader Associates Limited 72 Wellington Street, Freetown Architects Engineers Planners
	Project Status: Design Y Tender: Contract / Construction:	Date: 29/08/22 Drawn by: SMT Checked by: JNY Scale: 1 : 100	
			Printed: 9/28/2022 4:12:08 PM Scale: 1 : 100

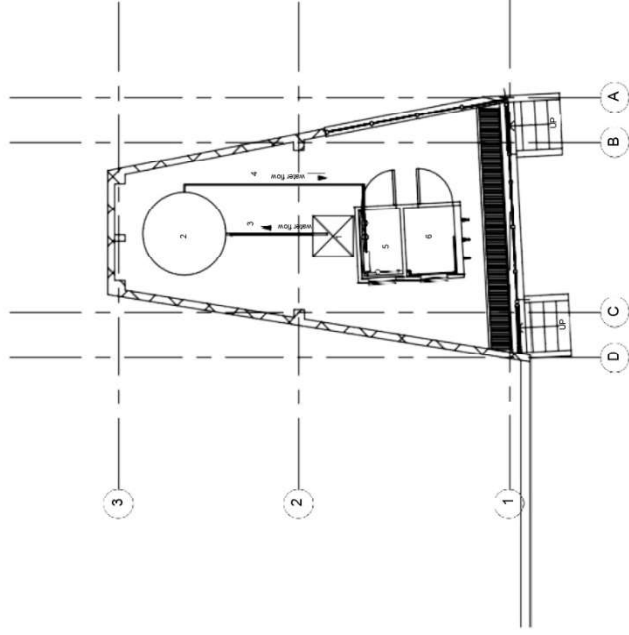


1 Alternative 1 Solar Pump System Not to Scale

NOTE
 1) IT IS RECOMMENDED TO INSTALL SURGE PROTECTOR AT EACH CONTROLLER SENSOR INPUT.
 2) THIS DRAWING IS TO BE RED IN CONJUNCTION WITH THE BILLS OF QUANTITY

- LEGEND**
- 1 Sample Valve
 - 2 Shut - off Valve
 - 3 Pre-treatment
 - 4 Bypass Shut - off Valve
 - 5 Shut - off Valve
 - 6 Sample Valve
 - 7 UV Chamber
 - 8 Cool Touch Valve
 - 9 Flow Restrictor
 - 10 Sample Valve
 - 11 Shut - off Valve
 - 12 Controller
 - 13 Power Source
 - 14 PVC Elbow
 - 15 PVC Tee

Client: FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title: PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE		Drawing Title: ALTERNATIVE 1 SOLAR PUMP SYSTEM	
	Project Status		Project status: Design Y Tender Contract / Construction	
	GENERAL			
	Architects Engineers Planners		Realini Associates Limited	
	72 Wellington Street, Freetown			
	Date: 29/09/22			
	Drawn by: SMT			
	Checked by: INY			
Scale: NOT TO SCALE		Printed: 9/28/2022 4:12:08 PM		
		A106		



Alternative 1 Water Pipe Network

1
1 : 100

Legend

- VERTICAL GRID LINE REFERENCE
ALPHABETICALLY
HORIZONTAL GRID LINE REFERENCE
NUMERIC LEVEL
- 1 hand Dug water well with submersible pump
 - 2 5000 Liters PVC Raw Water tank raised 1.2m above ground level
 - 3 38mm HP pipe from submersible pump to the 5000liters raw water storage tank
 - 4 25mm HP pipe from raw water storage tank to Treatment room
 - 8 Treatment room
 - 9 Water Kiosk

NOTE

- (1) All Dimensions are in centimeters, Unless otherwise Stated.
- (2) This drawing is to be red in conjunction with the bills of quantity

Client:

FREETOWN CITY COUNCIL
AND
UNITED NATIONS CAPITAL
DEVELOPMENT FUND

Project Title:

PROPOSED PLACEMENT OF
5000 LITERS STORAGE TANK
WATER KIOSK & LATRINE

Project Status

Drawing Title:

ALTERNATIVE 1
WATER PIPE NETWORK

Project status: Design Y Tender Contract / Construction

GENERAL

R B
A B

Realini
Bader
Associates Limited

Architects
Engineers
Planners
72 Wellington Street, Freetown

Date:

29/08/22

Drawn by:

SMIT

Checked by:

INTY

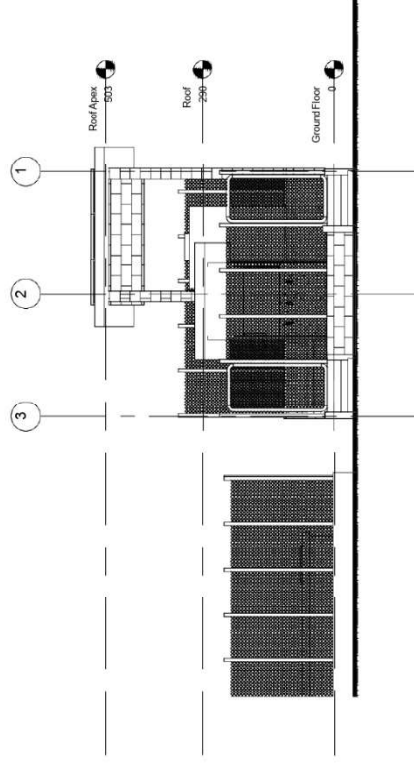
Scale:

1 : 100

Printed 9/28/2022 4:12:08 PM

on

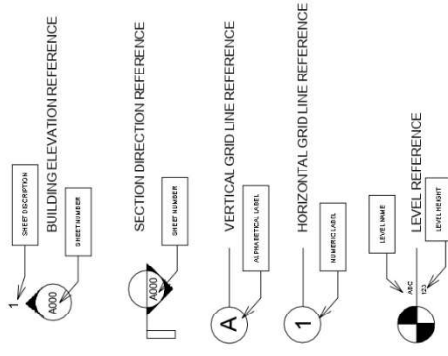
A105



Alternative 2 Front Elevation

1 1 : 100

Legend



NOTE

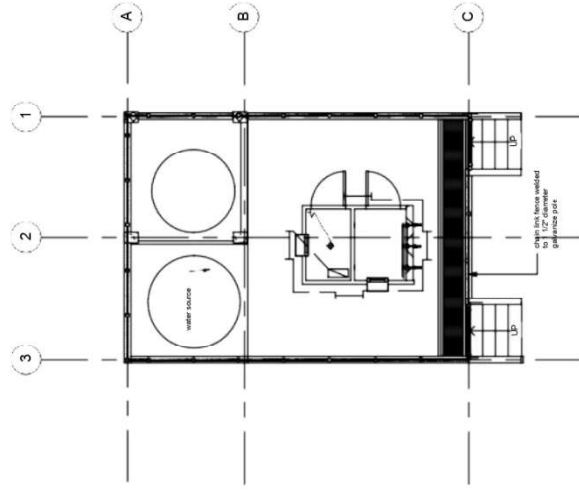
(1) All Dimensions are in centimeters,
Unless otherwise Stated.

CLIENT FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE	Crawing Title ALTERNATIVE 2 FRONT ELEVATION	Project Status Design _____ Tender _____ Contract / Construction _____	Architects Engineers Planners Kraam Badier Associates Limited 72 Wellington Street, Freetown	Drawn by: <u>gagaga22</u> Designed by: _____ Checked by: _____ Scale: 1:100 Printed: 9/28/2022 4:12:38 PM OT

100



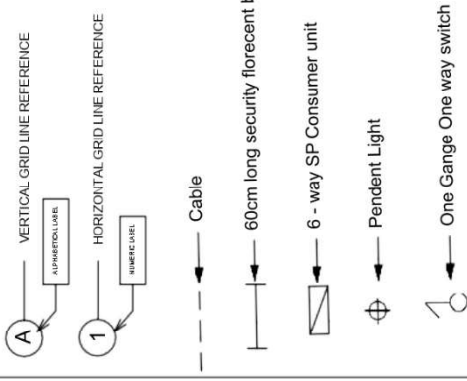
Printed 9/28/2022 4:12:08 PM



Alternative 2 Electrical Layout Plan

1 : 100

Legend



NOTE

- (1) All Dimensions are in centimeters, Unless otherwise Stated.
- (2) This drawing is to be red in conjunction with the bills of quantity

Client:

FREETOWN CITY COUNCIL
AND
UNITED NATIONS CAPITAL
DEVELOPMENT FUND

Project Title:

PROPOSED PLACEMENT OF
5,000 LITERS STORAGE TANK
WATER KIOSK & LATRINE

Project Status

Drawing Title:

ALTERNATIVE 2
ELECTRICAL LAYOUT
PLAN

Project status: Design Y Tender Contract / Construction:

GENERAL

Realini
Bader
Associates Limited

72 Wellington Street, Freetown

Architects
Engineers
Planners

Date: 29/08/22

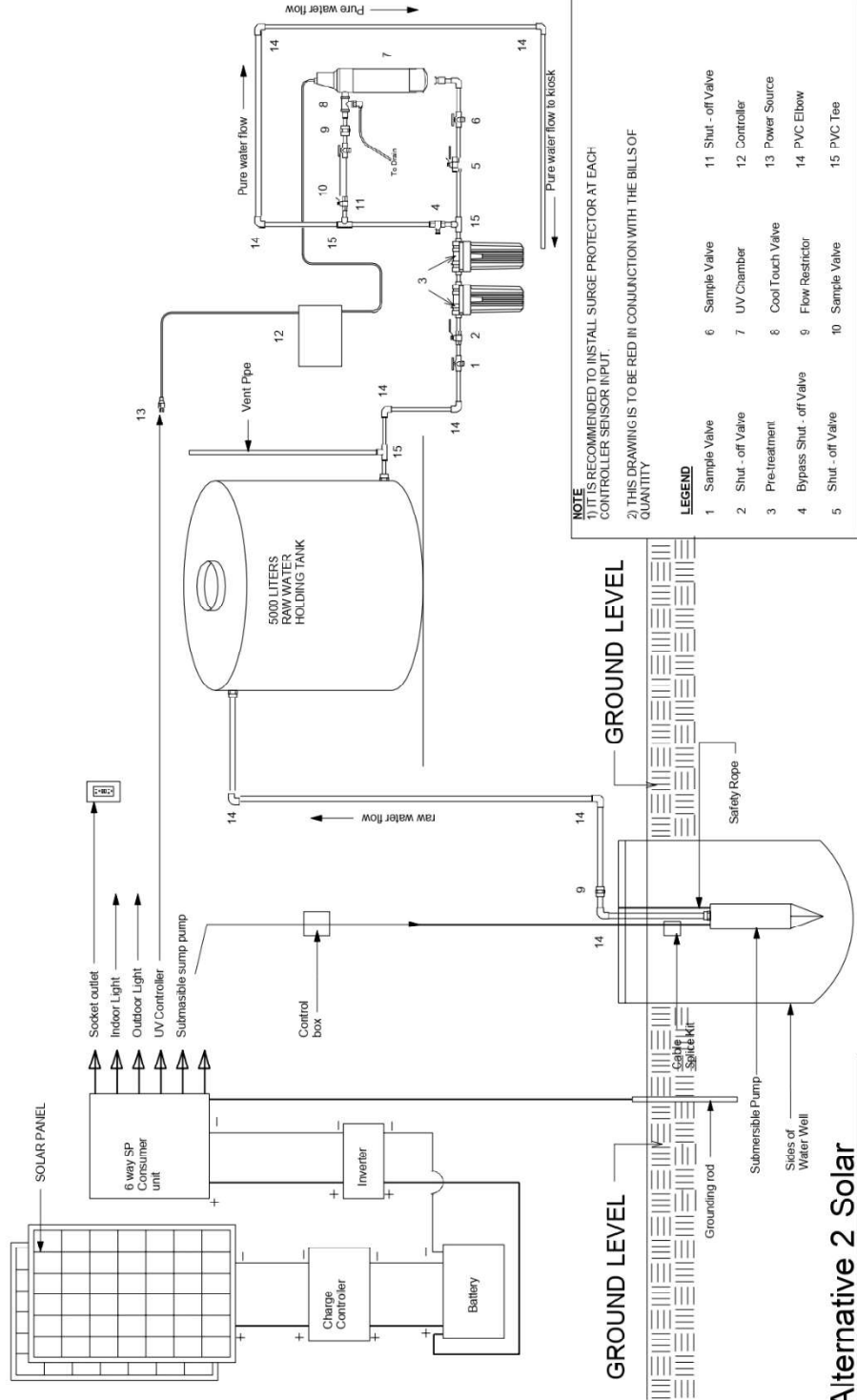
Drawn by: SMT

Checked by: IRY

Scale: 1 : 100

Printed: 9/28/2022 4:12:08 PM

on:



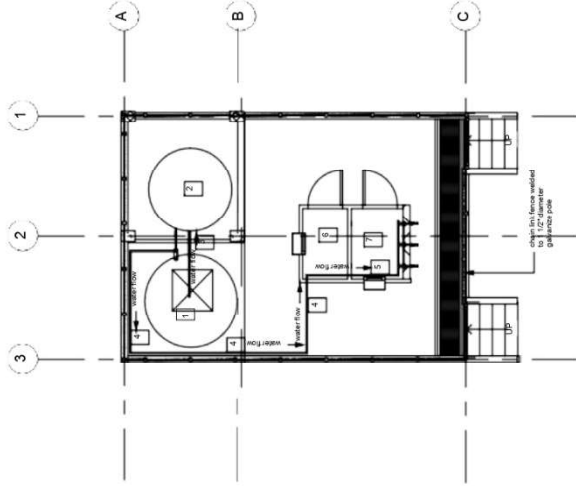
NOTE
 1) IT IS RECOMMENDED TO INSTALL SURGE PROTECTOR AT EACH CONTROLLER SENSOR INPUT.
 2) THIS DRAWING IS TO BE RED IN CONJUNCTION WITH THE BILLS OF QUANTITY

LEGEND

1 Sample Valve	6 Sample Valve	11 Shut - off Valve
2 Shut - off Valve	7 UV Chamber	12 Controller
3 Pre-treatment	8 Cool Touch Valve	13 Power Source
4 Bypass Shut - off Valve	9 Flow Restrictor	14 PVC Elbow
5 Shut - off Valve	10 Sample Valve	15 PVC Tee

1 Alternative 2 Solar Pump System Not to Scale

Client: FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title: PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE		Drawing Title: ALTERNATIVE 2 SOLAR PUMP SYSTEM		R B A Realini Bader Associates Limited 72 Wellington Street, Freetown A114	
	Project Status		Project status			Date: 29/08/22
			Design Y Tender			Drawn by: SMT
			Contract / Construction:			Checked by: INY
	Project Status					Scale: NOT TO SCALE



Alternative 2 Water Pipe Network

1 : 100

Legend

- VERTICAL GRID LINE REFERENCE**
- HORIZONTAL GRID LINE REFERENCE**
- 1 hand Dug water well with submersible pump
- 2 5000 Liters PVC Raw Water tank raised 1.2m above ground level
- 3 38mm HP pipe from submersible pump to the 5000 liters raw water storage tank
- 4 30mm HP pipe from raw water storage tank to Treatment room
- 5 30mm HP pipe from the Pure water tank to the Water Kiosk
- 6 Treatment room
- 7 Water Kiosk

NOTE

- (1) All Dimensions are in centimeters, Unless otherwise Stated.
- (2) This drawing is to be red in conjunction with the bills of quantity

Client:

FREETOWN CITY COUNCIL
AND
UNITED NATIONS CAPITAL
DEVELOPMENT FUND

Project Title:

PROPOSED PLACEMENT OF
5,000 LITERS STORAGE TANK
WATER KIOSK & LATRINE

Project Status

Drawing Title:

ALTERNATIVE 2
WATER PIPE NETWORK

Project status: Design Y Tender Contract / Construction

GENERAL

R B
Bader
Associates Limited

72 Wellington Street, Freetown

Architects
Engineers
Planners

Date:

29/09/22

Drawn by:

SMIT

Checked by:

INY

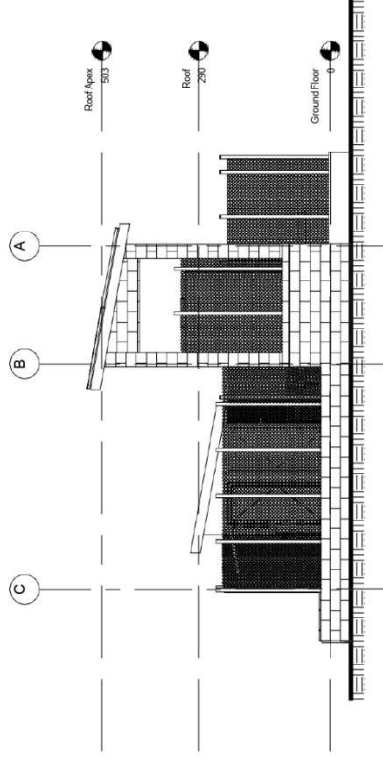
Scale:

1 : 100

Printed

9/28/2022 4:12:08 PM

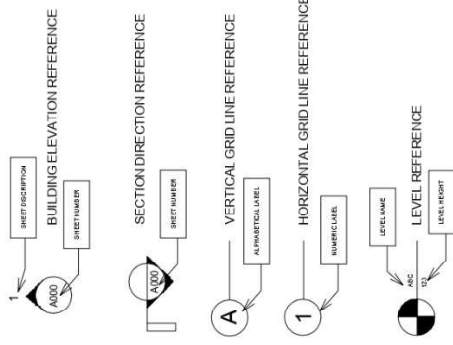
A113



Alternative 3 Side Elevation

1 1 : 100

Legend

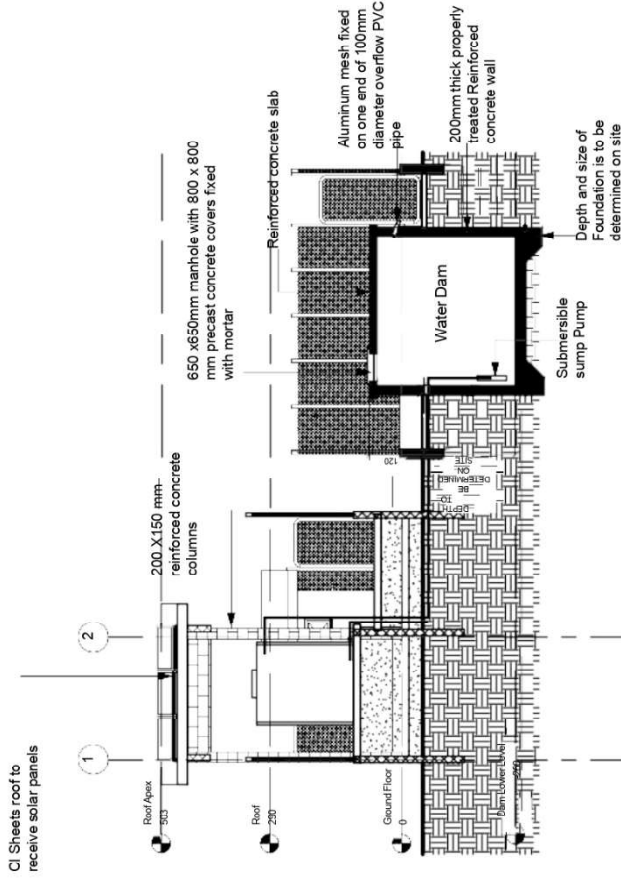


NOTE

(1) All Dimensions are in centimeters,
Unless otherwise Stated.

Client: FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE		Drawing Title ALTERNATIVE 3 SIDE ELEVATION		Realini Bader Associates Limited 72 Wellington Street, Freetown Architects Engineers Planners	
	Project Status		Project Status: Design Y Tender Contract Construction			
			Drawn by: Designer	Checked by: Checker		Scale: 1:100
			A119			
			9/28/2022 4:12:08 PM			

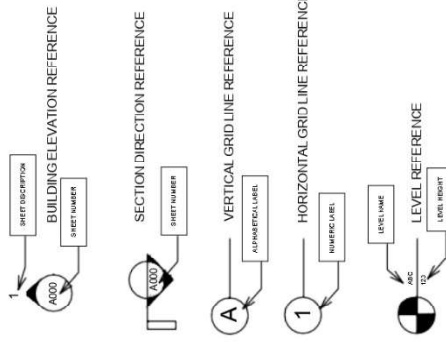




Alternative 3 Section 3 - 3

1 : 100

Legend



NOTE

- (1) All Dimensions are in centimeters, Unless otherwise Stated.
- (2) Depth and size of foundations are to be determined on site.
- (3) Depth and size of water Dam is to be determined on site.

GENERAL

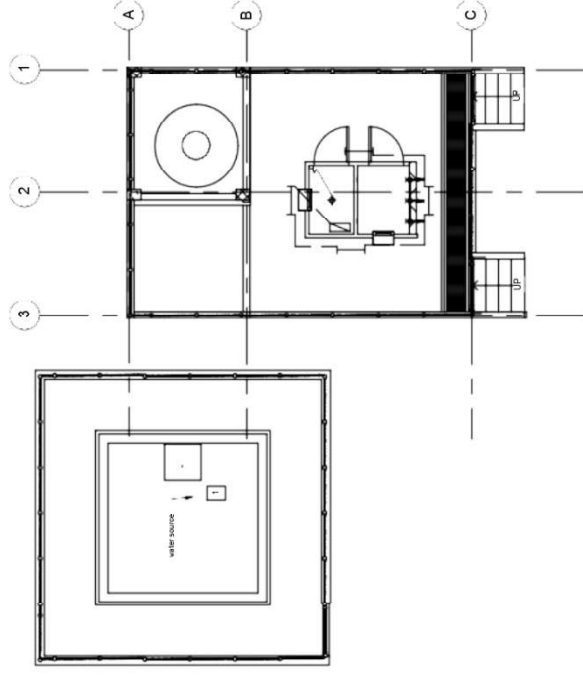
Project Title:
ALTERNATIVE 3
SECTION 3 - 3

Project Title:
PROPOSED PLACEMENT OF
5,000 LITERS STORAGE TANK
WATER KIOSK & LATRINE

Project Status

Client:
FREETOWN CITY COUNCIL
AND
UNITED NATIONS CAPITAL
DEVELOPMENT FUND

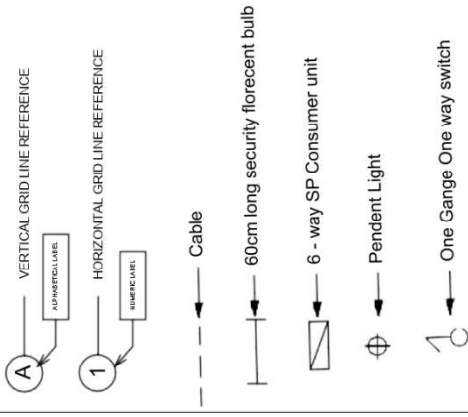
 KB	Khalil Bader Associates Limited		72 Wellington Street, Freetown		Architects Engineers Planners	
	Title:		29/08/22		A120	
	Drawn by:		SMT			
	Checked by:		INY			
Scale:			1 : 100		Printed 9/28/2022 4:12:08 PM	



Alternative 3 Electrical Layout Plan

1 : 100

Legend

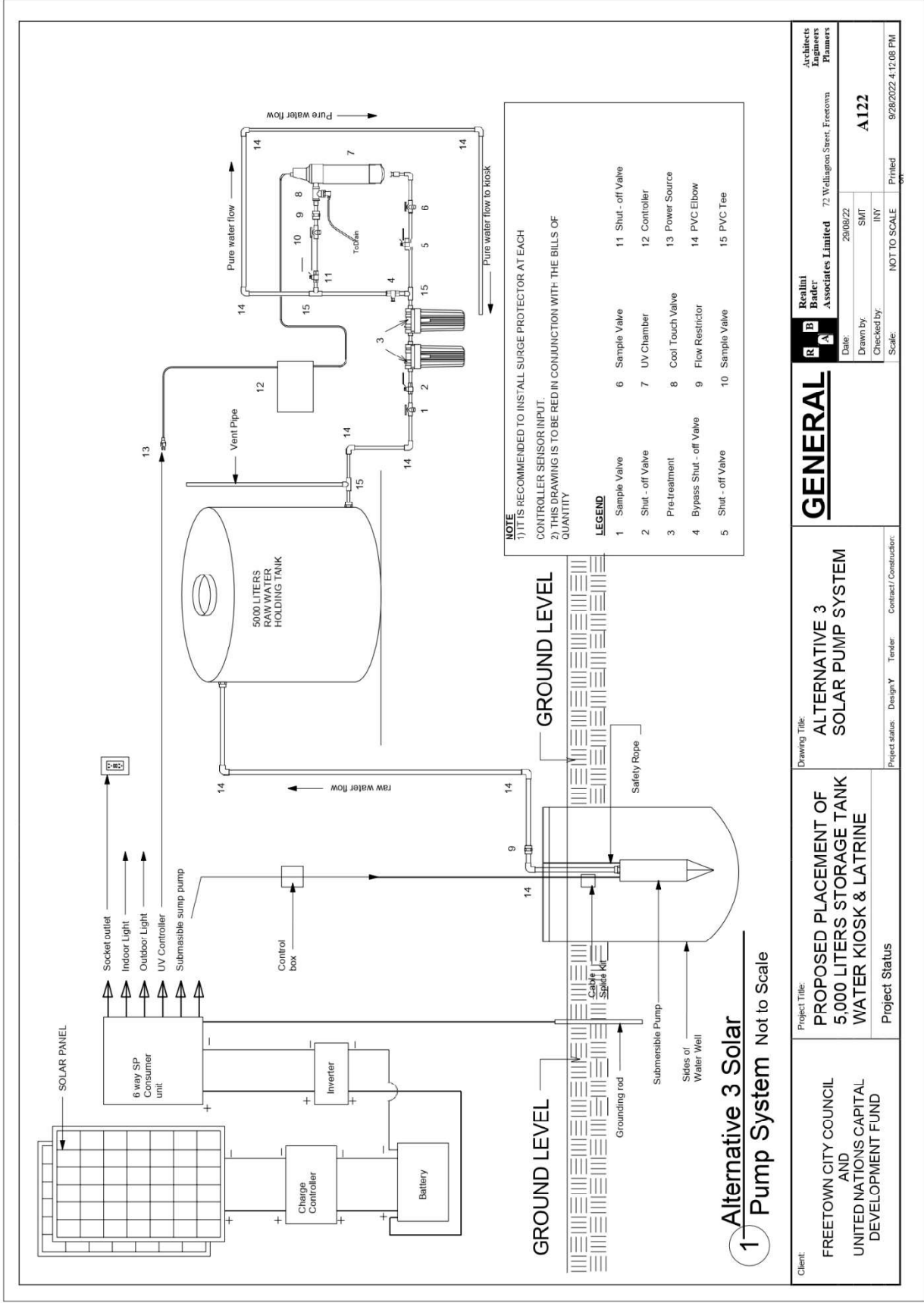


NOTE

- (1) All Dimensions are in centimeters, Unless otherwise Stated.
- (2) This drawing is to be red in conjunction with the bills of quantity

Client: FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title: PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE	Drawing Title: ALTERNATIVE 3ELECTRICAL LAYOUT PLAN	Project status: Design Y Tender: Contract / Construction:	Realini Bader Associates Limited				72 Wellington Street, Freetown	Architects Engineers Planners
				RBA					
				Date: 20/08/22					
				Drawn by: SMT					
				Checked by: INY					
Project Status			Scale: 1 : 100		Printed		9/28/2022 4:12:08 PM		
GENERAL									A123

Realini Bader Associates Limited		Architects Engineers Planners	
72 Wellington Street, Freetown		A123	
Date:	29/08/22	Drawn by:	SMT
Checked by:	INTY	Scale:	1 : 100
Printed:		9/28/2022 4:12:08 PM	

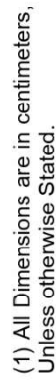




(1) All Dimensions are in centimeters, Unless otherwise Stated.

(2) This drawing is to be red in conjunction with the bills of quantity

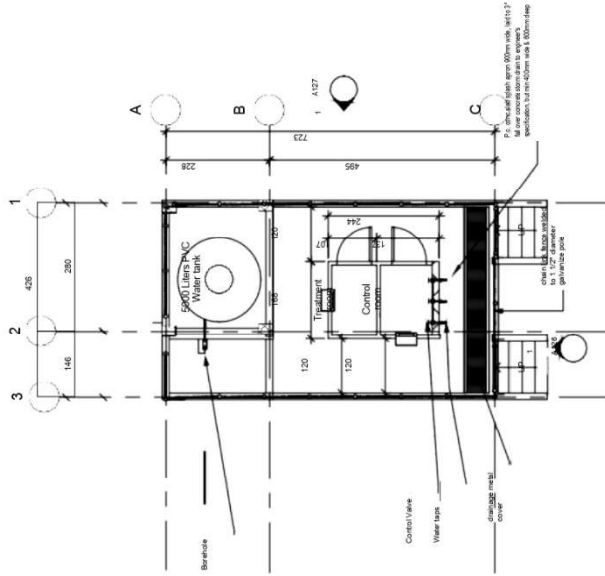
112

113



1
1 : 100

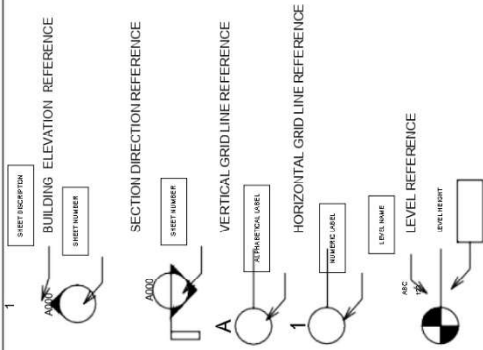
114



Alternative 4 Floor Plan

1: 100

Legend

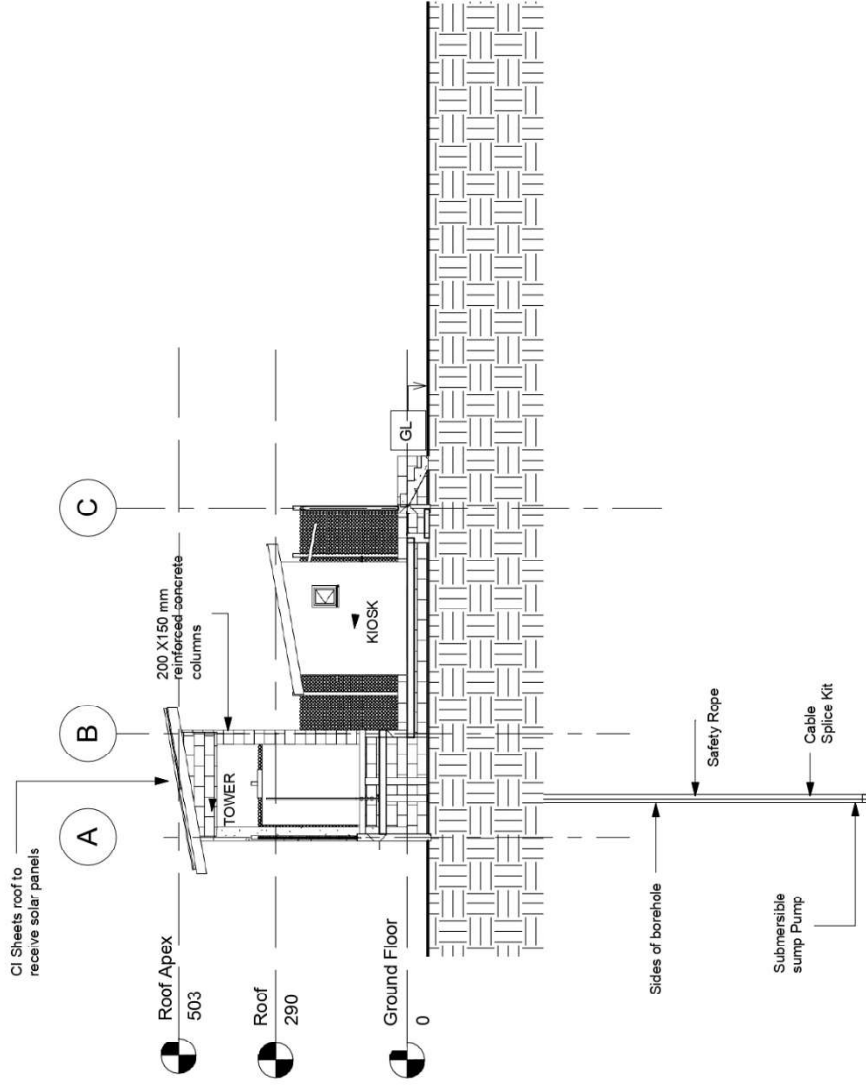


NOTE

(1) All Dimensions are in centimeters, Unless otherwise Stated.

GENERAL

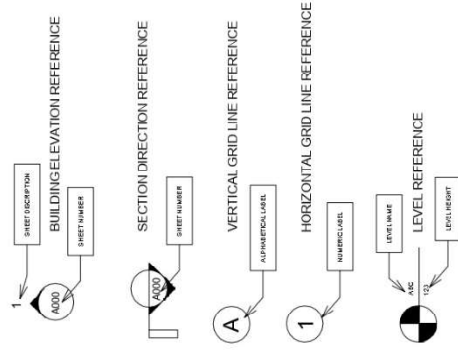
Client:	FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title: PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE	Drawing Title: ALTERNATIVE 4 FLOOR PLAN		 Bader Associates Limited 72 Wellington Street, Freetown	Architects Engineers Planners
			Project Status Project status: Design 'A' Tender: Contract / Construction			
		Date: 29/08/22		A125		
		Drawn by: SMT				
		Checked by: IRY				
Scale: 1 : 100		Printed 9/28/2022 4:12:08 PM				
		OF				



Alternative 4 Section 4 - 4

1 : 100

Legend



NOTE

- (1) All Dimensions are in centimeters, Unless otherwise Stated.
- (2) Depth and size of foundations are to be determined on site.
- (3) Depth and size of Borehole is to be determined on site.

GENERAL

Drawing Title:
ALTERNATIVE 4
SECTION 4 - 4

Project Title:
PROPOSED PLACEMENT OF
5,000 LITERS STORAGE TANK
WATER KIOSK & LATRINE

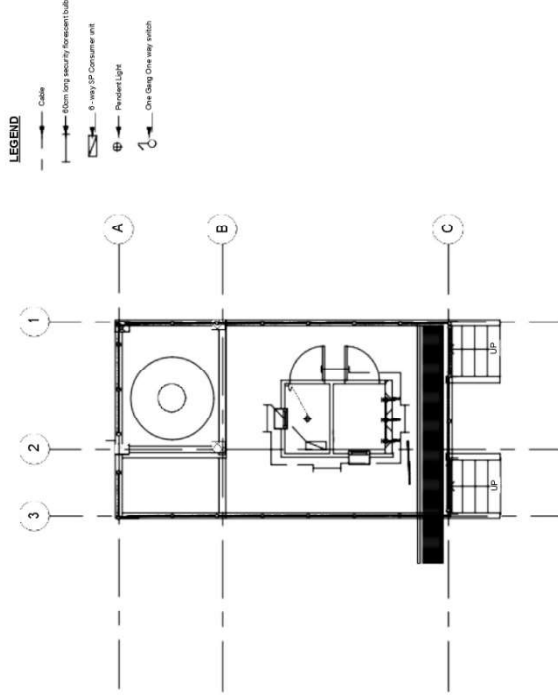
Client:
FREETOWN CITY COUNCIL
AND
UNITED NATIONS CAPITAL
DEVELOPMENT FUND

Project status: Design Y Tender Contract / Construction

Project Status

Realini Bader Associates Limited	Architects Engineers Planners	
	72 Wellington Street, Freetown	
Date:	29/08/22	
Drawn by:	SMT	
Checked by:	INY	
Scale:	1 : 100	Printed 9/28/2022 4:12:38 PM

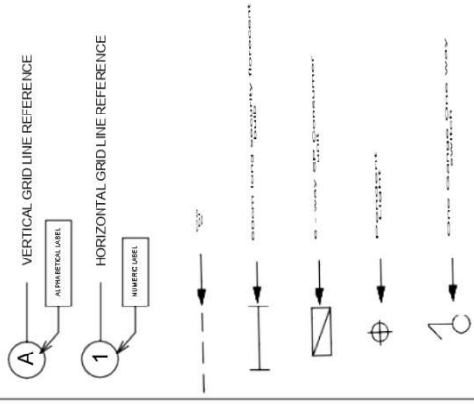
or



Alternative 4 Electrical Layout Plan

1 : 100

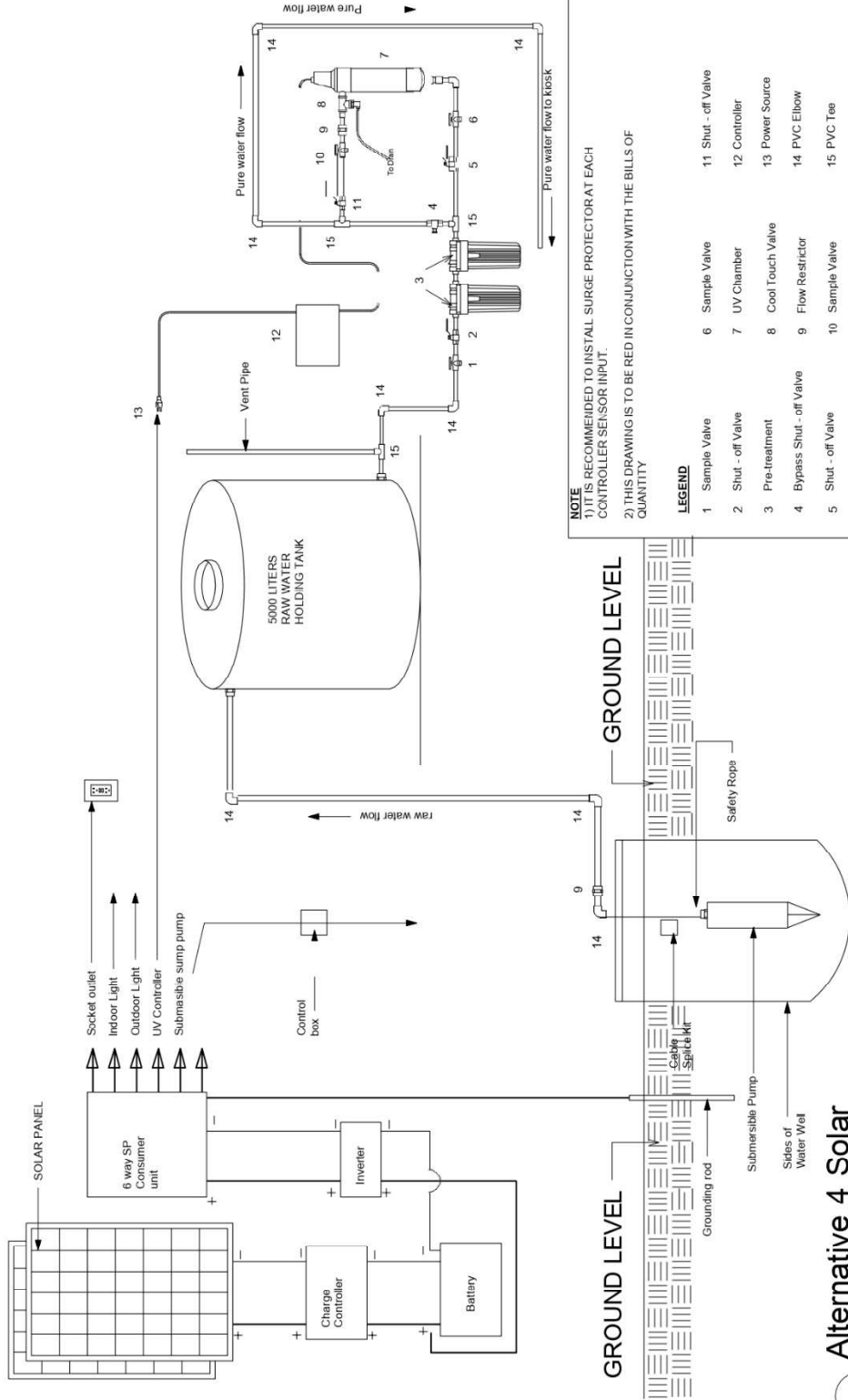
Legend



NOTE

- (1) All Dimensions are in centimeters, Unless otherwise Stated.
- (2) This drawing is to be red in conjunction with the bills of quantity

Client: FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title: PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE	Drawing Title: ALTERNATIVE 4 ELECTRICAL LAYOUT PLAN	GENERAL Realini Butler Associates Limited Architects Engineers Planners 72 Wellington Street, Freetown Date: 29/08/22 Drawn by: SMF Checked by: INY Scale: 1 : 100 A131 Printed 9/28/2022 4:12:08 PM		
	Project Status	Project status: Design Y		Tender: Y	Contract / Construction:

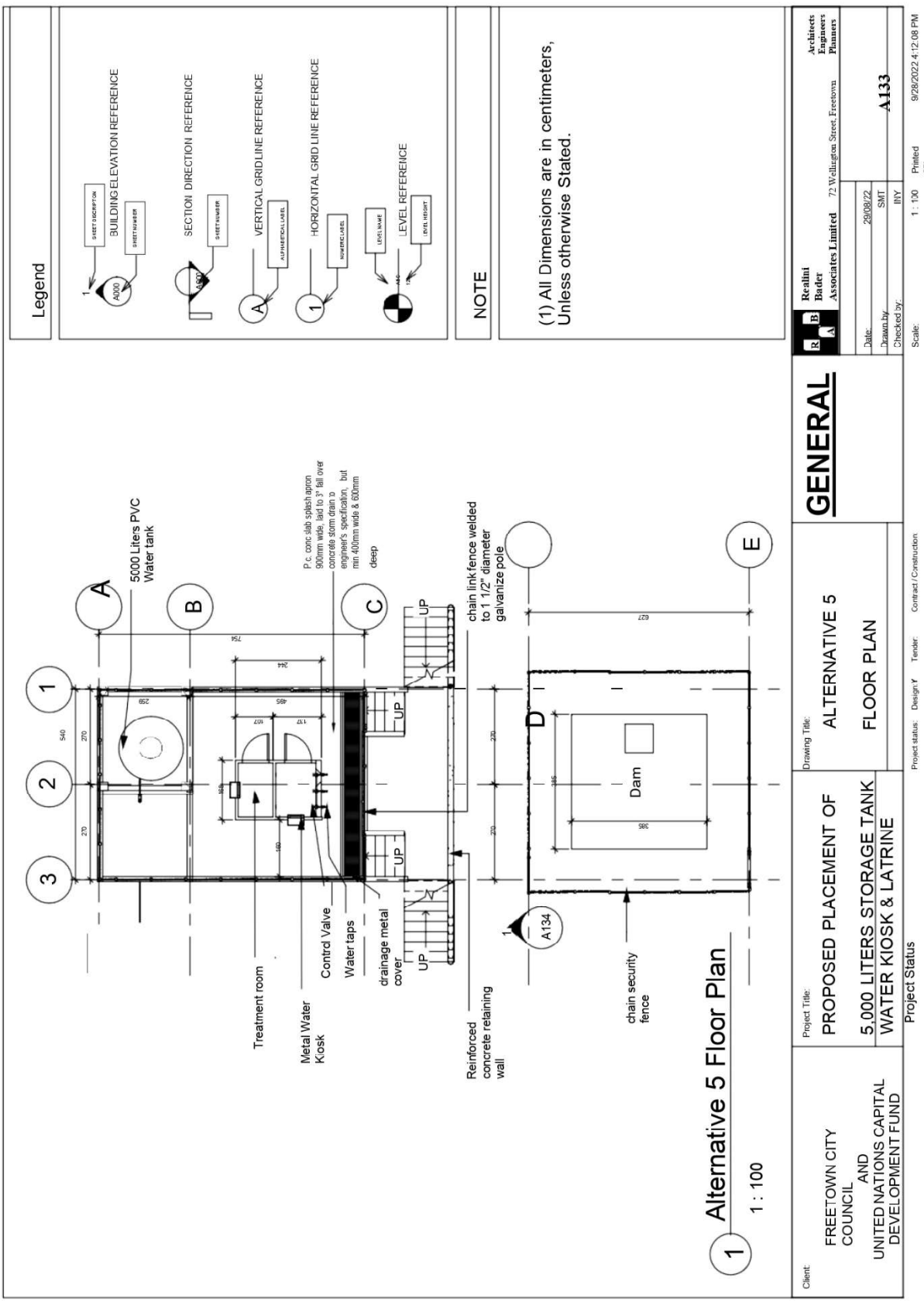


Client:	FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title	Drawing Title		R B A Realini Bader Associates Limited	72 Wellington Street, Freetown	Architects Engineers Planners
		Proposed Placement of 5,000 Liters Storage Tank Water Kiosk & Latrine	Alternative 4 Solar Pump System				
		Project Status	Project status:	Design Y			
					Date:	29/08/22	
					Drawn by	SMT	
					Checked by:	INY	
					Scale:	NOT TO SCALE	Printed
						9/28/2022 4:12:08 PM	

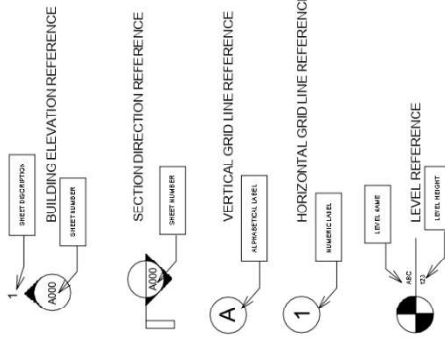


Client:	FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title: PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE	Drawing Title: ALTERNATIVE 4 WATER PIPE NETWORK	General Information						
					Architects Planners					
						Drawn by				
							Checked by			
								Scale: 1" = 10'		
Project Status		Project Details: Design / Tender		Project Date: 09/26/2022 4:12:08 PM		A129				

120

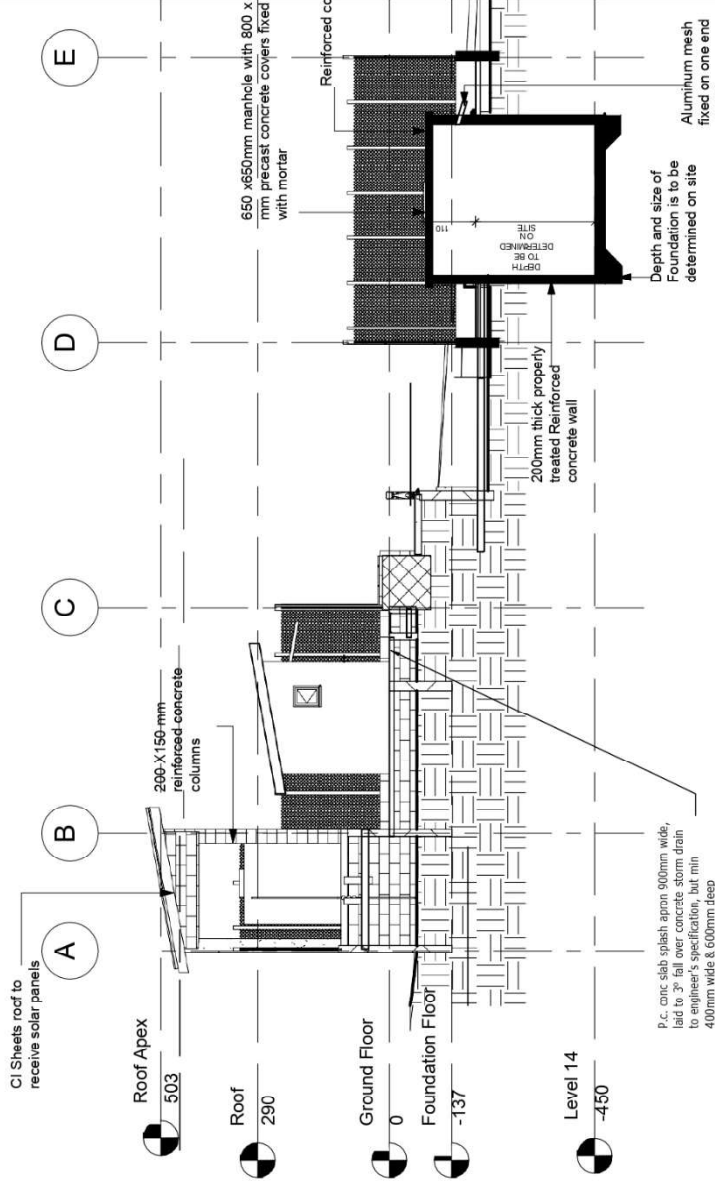


Legend



NOTE

- (1) All Dimensions are in centimeters, Unless otherwise Stated.
- (2) Depth and size of foundations are to be determined on site.
- (3) Depth and size of water dam is to be determined on site.



Alternative 5 Section 5 - 5

1 : 100

GENERAL

Project Title:
ALTERNATIVE 5
SECTION 5 - 5

Client:
FREETOWN CITY COUNCIL
AND
UNITED NATIONS CAPITAL
DEVELOPMENT FUND

Project Status

Project Status: Design ✓ Tender Contract Construction

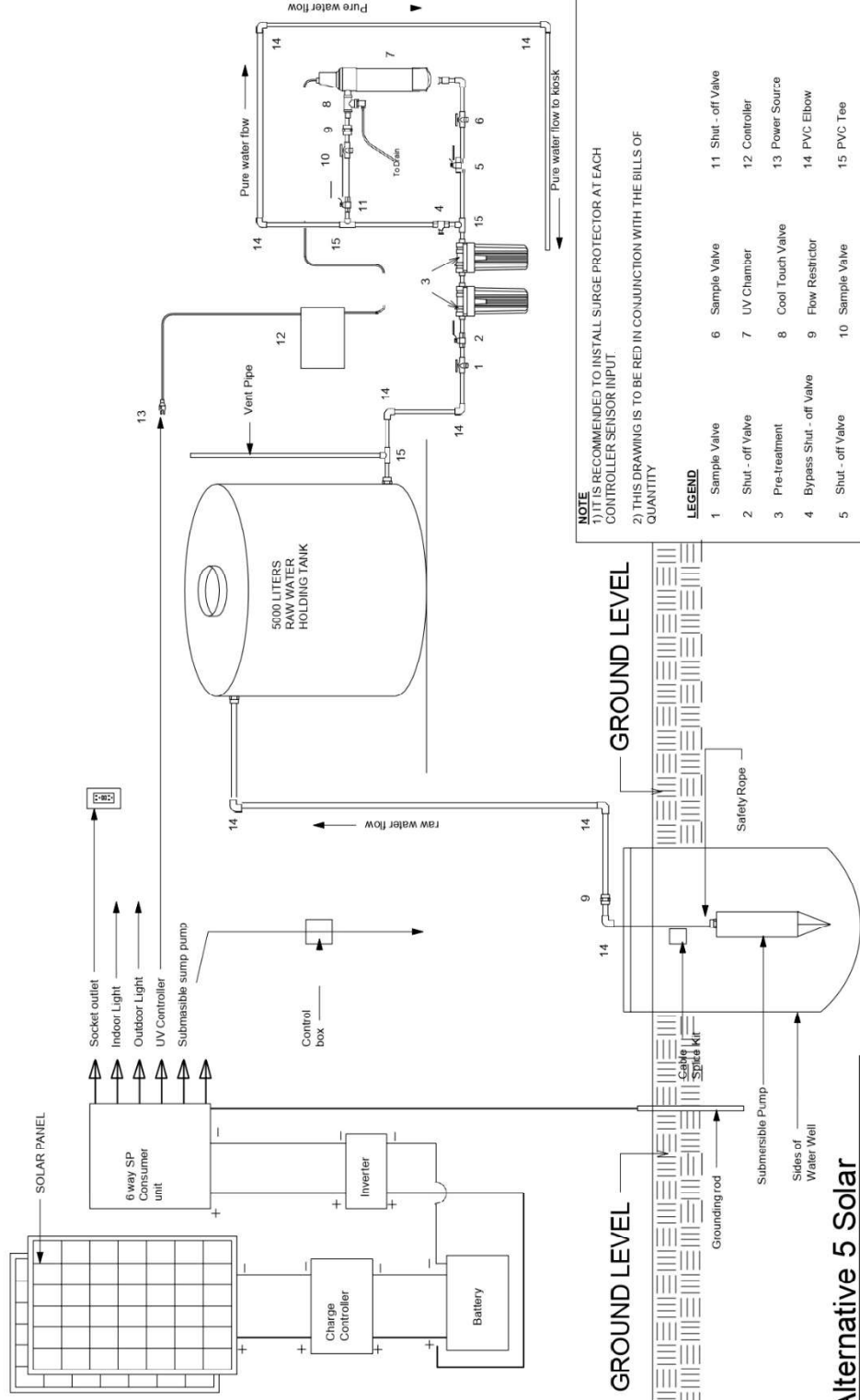
Architects Engineers Planners	
72 Wellington Street, Freetown	
Associates Limited	
28/06/22	
Drawn by:	SMI
Checked by:	INY
Scale:	1 : 100
Printed:	9/24/2022 4:12:08 PM
DL:	



(1) All Dimensions are in centimeters, Unless otherwise Stated.

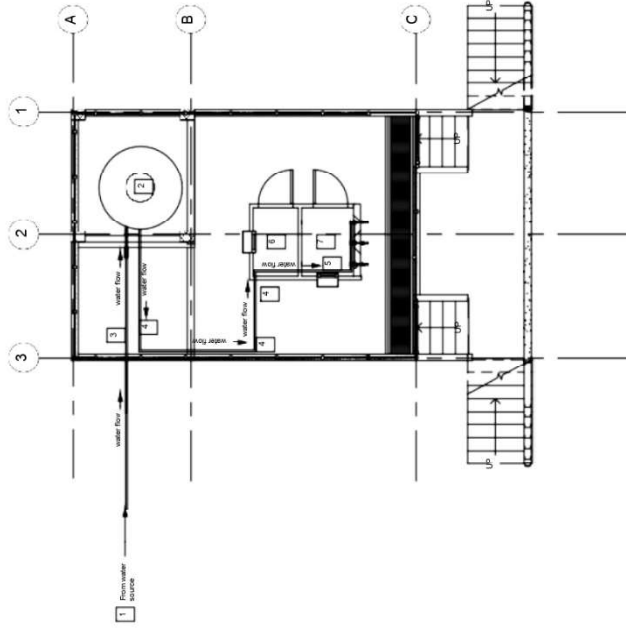
(2) This drawing is to be red in conjunction with the bills of quantity

Client:	FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title: PROPOSED PLACEMENT OF 5 000 LITERS STORAGE TANK WATER KIOSK & LATRINE	Drawing Title: ALTERNATIVE 5 ELECTRICAL LAYOUT PLAN	R B A	Realini Borah Associates Limited	72 Wellington Street, Freetown P.O. Box 111	Architects Engineers Planners		
		Project Status	Project status: Design Y Tender: Contract / Construction:	Date: 29/08/22	Drawn by: SMT	Checked by: INY	Scale: 1 : 100	A139	9/28/2022 4:12:08 PM



Alternative 5 Solar Pump System
Not to Scale

Client:	FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title: PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE	Project Status	Drawing Title:		ALTERNATIVE 5 SOLAR PUMP SYSTEM		R B A Realini Associates Limited 72, Wellington Street, Freetown	Architects Engineers Planners
				Date:		29/08/22			
				Drawn by:		SMT			
				Checked by:		INY			
				Scale:		NOT TO SCALE			
				Printed		9/28/2022 4:12:08 PM			



Alternative 5 Water Pipe Network

1 : 100

Legend

- VERTICAL GRID LINE REFERENCE**
- HORIZONTAL GRID LINE REFERENCE**
- 1 Water source with submersible pump
- 2 5000 Liters PVC Raw Water tank raised 1.2m above ground level
- 3 38mm HP pipe from submersible pump to the 5000 liters raw water storage tank
- 4 30mm HP pipe from raw water storage tank to Treatment room
- 5 30mm HP pipe from the Pure water tank to the Water Kiosk
- 6 Treatment room
- 7 Water Kiosk

NOTE

- (1) All Dimensions are in centimeters, Unless otherwise Stated.
- (2) This drawing is to be red in conjunction with the bills of quantity

GENERAL

Drawing Title:
ALTERNATIVE 5
WATER PIPE NETWORK

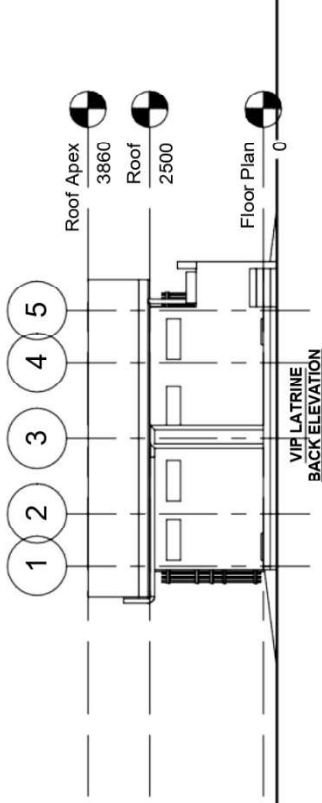
Project Title:
PROPOSED PLACEMENT OF
5,000 LITERS STORAGE TANK
WATER KIOSK & LATRINE

Project Status

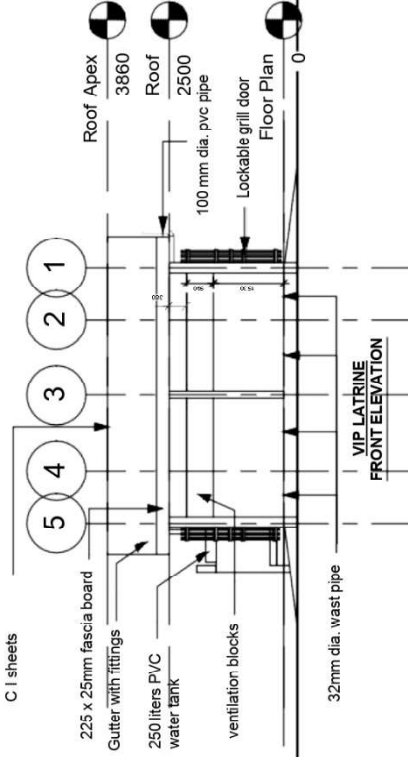
Project status: Design Y Tender Contract / Construction:

R B Realini Bader Associates Limited Architects Engineers Planners	72 Wellington Street, Freeport	
	Date: 29/08/22	
Drawn by: SMF	Checked by: INY	Scale: 1 : 100
Printed: 9/28/2022 4:12:08 PM		Sheet: 01

Public toilets

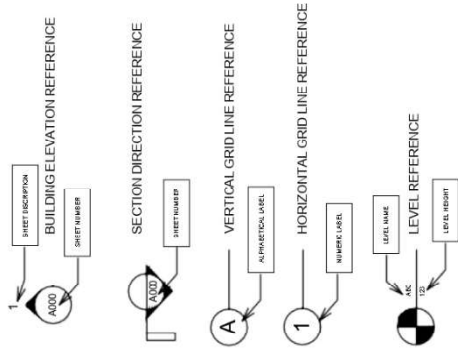


C | sheets



1 VIP Latrine Back and Front Elevations 1 : 100

Legend

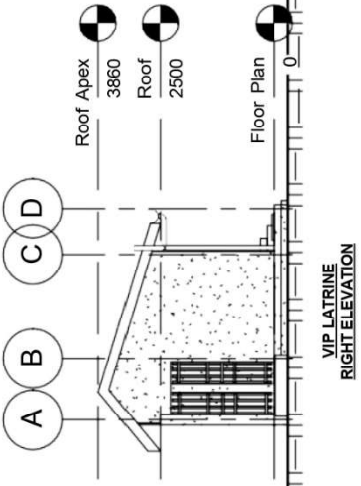


NOTE

(1) All Dimensions are in centimeters, Unless otherwise Stated.

GENERAL

Client:	FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title:	PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE		Project Status
		Drawing Title:	VIP LATRINE BACK AND FRONT ELEVATIONS		Project status: Design Y Tender: Contract / Construction
		 Realini Bader Associates Limited		Architects Engineers Planners	
		72 Wallagosa Street, Freetown			
		Date:	29/09/22		
		Drawn by:	SMF		
		Checked by:	INV		
		Scale:	1 : 100		Printed
					9/28/2022 4:12:08 PM

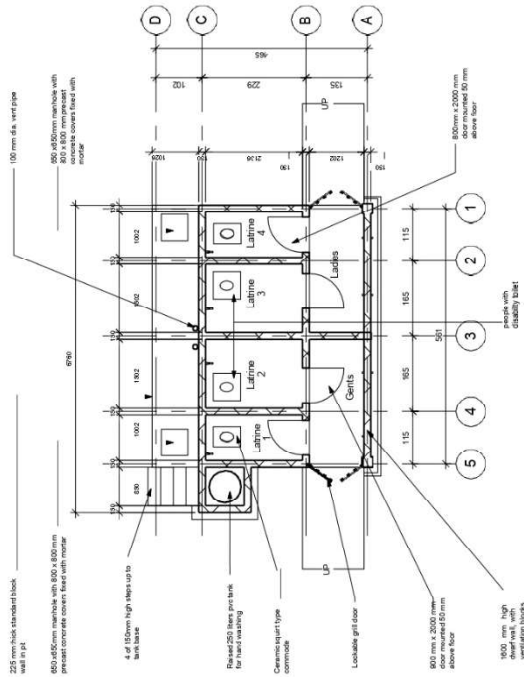


(1) All Dimensions are in centimeters,
Unless otherwise Stated.

1 VIP Latrine Left and Right Elevations
1 : 100

client

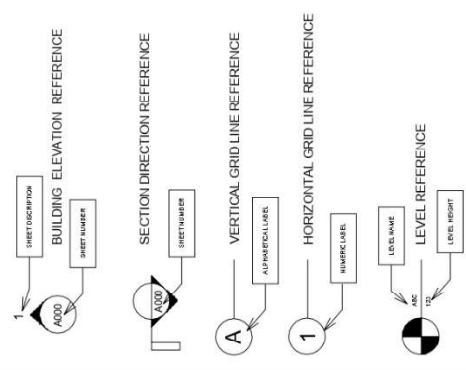
Scale:	1 : 100	Printed	9/28/2022 4:12:08 PM
--------	---------	---------	----------------------



VIP Latrine Floor Plan

1 : 100

Legend



NOTE

(1) All Dimensions are in centimeters,
Unless otherwise Stated.

Client: FREETOWN CITY COUNCIL AND UNITED NATIONS CAPITAL DEVELOPMENT FUND	Project Title: PROPOSED PLACEMENT OF 5,000 LITERS STORAGE TANK WATER KIOSK & LATRINE Project Status	Project Title: VIP LATRINE FLOOR PLAN GENERAL		Realini Bader Associates Limited 72 Wellington Street, Freetown Architects Engineers Planners
Drawing Title:		Date: 28/08/22	Drawn by: SMT	A140
Project status:		Checked by: INY		
Design Y Tender:		Scale: 1 : 100	Printed 9/28/2022 4:12:08 PM	





Scale:	1 : 100	Printed	9/28/2022 4:12:08 PM
--------	---------	---------	----------------------

Date:	29/08/22	A145	Printed 9/28/2022 4:12:08 PM
Drawn by:	SMT		
Checked by:	INV		
Scale:	1 : 100		

Scale:	1 : 100	Printed	9/28/2022 4:12:08 PM
--------	---------	---------	----------------------

(1) All Dimensions are in centimeters, unless otherwise Stated.

(2) This drawing is to be red in conjunction with the bills of quantity

Annex 4: Guidance on filling the Bills of quantities:

- For every stated item (regardless of the unit: m, m2, m2, item, kg, Nr, L/Sum and all the other stated type of units), **the line” Rate US\$ in words” should be filled**. During the evaluation of the offers, in case rate in number and rate in words are different, priority is given to rate in words and price’s correction will be applied accordingly.
- When filling rate in words: only the decimals could be written in numbers:
e.g: 165.64 =One hundred sixty-five and 64 cents
- Bidder should not modify any of the columns containing item’s number, item’s description, quantities, and units in the submission.
- For water kiosks, item’s description specifies when a given item is specific to one or more water kiosk(s) alternative(s) /model (s).

General Conditions of Contract for Civil Works

MODEL CONTRACT FOR WORKS

Date _____

Dear Sir/Madam,

Ref.: _____/_____/_____ **[INSERT PROJECT NUMBER AND TITLE]**

The United Nations Capital Development Fund(hereinafter referred to as "UNCDF"), wishes to engage your company, duly incorporated under the Laws of _____ **[INSERT NAME OF THE COUNTRY]** (hereinafter referred to as the "Contractor") in order to perform _____ **[INSERT SUMMARY DESCRIPTION OF THE WORKS]** (hereinafter referred to as the "Works"), in accordance with the following Contract:

1.Contract Documents

- 1.1 This Contract is subject to the UNCDF General Conditions for Civil Works, _____ **[INSERT REVISION NUMBER AND DATE FROM THE CONTRACTS DOCUMENTS LIBRARY]**, attached hereto as Annex I. The provisions of such Annex shall control the interpretation of this Contract and in no way shall be deemed to have been derogated by the contents of this letter and any other Annexes, unless otherwise expressly stated under section 4 of this letter, entitled "Special Conditions".
- 1.2 The Contractor and UNCDF also agree to be bound by the provisions contained in the following documents, which shall take precedence over one another in case of conflict in the following order:
- a) this letter;
 - b) the Technical Specifications and Drawings [ref.dated.....], attached hereto as Annex II;
 - c) the Contractor's Tender _____ **[IF THE CONTRACT IS ON THE BASIS OF UNIT PRICE, INSERT: including the Priced Bill of Quantities]** [ref....., dated], as clarified by the agreed minutes of the negotiation meeting⁷ [dated.....], not attached hereto but known to and in the possession of both parties.
- 1.3 All the above shall form the Contract between the Contractor and UNCDF, superseding the contents of any other negotiations and/or agreements, whether oral or in writing, pertaining to the subject of this Contract.

⁷ If there are updates to the technical proposal or correspondence exchanged in clarification of certain aspects, reference them too, provided that they are acceptable to UNCDF. Otherwise, aspects which resolution is pending should be dealt with in this letter itself or in the Technical Specifications/Drawings, as appropriate.

[INSERT NAME AND ADDRESS OF
THE CONTRACTOR]

2. Obligations of the Contractor

- 2.1 The Contractor shall commence work within ____ [INSERT NUMBER OF DAYS] days from the date on which he shall have been given access to the Site and received the notice to commence from the Engineer, and shall perform and substantially complete the Works by .././.... [INSERT DATE], in accordance with the Contract. The Contractor shall provide all materials, supplies, labour and other services necessary to that end.
- 2.2 The Contractor shall submit to the Engineer the Programme of Work referred to in Clause 13 of the General Conditions by .././.... [INSERT DATE].
- 2.3 The Contractor represents and warrants the accuracy of any information or data provided to UNCDF for the purpose of entering into this Contract, as well as the quality of the Works foreseen under this Contract in accordance with the highest industrial and professional standards.

OPTION 1 (FIXED PRICE)

3. Price and Payment⁸

- 3.1 In full consideration of the complete and satisfactory performance of the Works under this Contract, UNCDF shall pay the Contractor a fixed contract price of _____ [INSERT CURRENCY & AMOUNT IN FIGURES AND WORDS].
- 3.2 The price of this Contract is not subject to any adjustment or revision because of price or currency fluctuations or the actual costs incurred by the Contractor in the performance of the Contract.
- 3.3 Invoices shall be submitted by the Contractor to the Engineer upon achievement of the corresponding milestones and for the following amounts:

<u>MILESTONE</u> ⁹	<u>AMOUNT</u>	<u>DATE</u>
Upon signature of Contract		.././....
.....		.././....
Upon substantial completion of Works		.././....
Upon final completion of Works		.././....

⁸ This version of section 3 is to be used for fixed price contracts. Fixed price contracts should normally be used when it is possible to estimate with reasonable accuracy the costs of the activities which are the subject of the Contract.

⁹ In the case of advance payments, the amount should not exceed 15%.

OPTION 2 (COST REIMBURSEMENT)

3. **Price and payment**

- 3.1 The total estimated price of the Contract is contained in the Bill of Quantities and amounts to _____ **[INSERT CURRENCY & AMOUNT IN FIGURES AND WORDS]**.
- 3.2 The final price of the Contract will be determined on the basis of the actual quantities of work and materials utilized in the complete and satisfactory performance of the Works as certified by the Engineer and the unit prices contained in the Contractor's financial proposal. Such unit prices are fixed and are not subject to any variation whatsoever.
- 3.3 If the Contractor foresees that the final price of the Contract may exceed the total estimated price contained in 3.1 above, he shall so inform the Engineer without delay, in order for UNCDF to decide, at its discretion, to increase the estimated price of the Contract as a result of a larger quantity of work/material or to reduce the quantity of work to be performed or materials to be used. UNCDF shall not be responsible for payment of any amount in excess of that stipulated in 3.1 above unless this latter amount has been increased by means of a written amendment of this Contract in accordance with its paragraph 8 below.
- 3.4 The Contractor shall submit an invoice for _____ **[INSERT AMOUNT AND CURRENCY OF THE ADVANCE PAYMENT IN FIGURES & WORDS]** upon signature of this Contract by both parties, invoices for the work performed and materials utilized every _____ **[INSERT PERIOD OF TIME OR MILESTONES]** and a final invoice within 30 days from the issuance of the Certificate of Substantial Completion by the Engineer.¹⁰

[THE FOLLOWING CLAUSES ARE COMMON TO OPTIONS 1 & 2 AND MUST BE NUMBERED ACCORDING TO THE OPTION CHOSEN FOR ARTICLE 3]

- 3.5 UNCDF shall effect payment of the invoices after receipt of the certificate of payment issued by the Engineer, approving the amount contained in the invoice. The Engineer may make corrections to that amount, in which case UNCDF may effect payment for the amount so corrected. The Engineer may also withhold invoices if the work is not performed at any time in accordance with the terms of the Contract or if the necessary insurance policies or performance security are not valid and/or in order. The Engineer shall process the invoices submitted by the Contractor within 15 days of their receipt.
- 3.6 Payments effected by UNCDF to the Contractor shall be deemed neither to relieve the Contractor of its obligations under this Contract nor as acceptance by UNCDF of the Contractor's performance of the Works.
- 3.7 Payment of the final invoice shall be effected by UNCDF after issuance of the Certificate of Final Completion by the Engineer.

4. **Special conditions**¹¹

¹⁰ In the case of advance payments, the amount should not exceed 15%.

¹¹ Under this Section, the Programme Officer may propose special clauses in order to adapt the model contract to the specific situation. In this sample clause 4, several clauses of common use are given. If they are not required, they should be deleted.

- 4.1 The advance payment to be made upon signature of the contract by both parties is contingent upon receipt and acceptance by UNCDF of a bank guarantee ¹²for the full amount of the advance payment issued by a Bank and in a form acceptable to UNCDF.¹³
- 4.2 The amounts of the payments referred to under section 3.6 above shall be subject to a deduction of _____ **[INSERT PERCENTAGE OF TOTAL CONTRACT PRICE THAT THE ADVANCE REPRESENTS]** % (... percent) of the amount accepted for payment until the cumulative amount of the deductions so effected shall equal the amount of the advance payment.¹⁴ Should the cumulative amount of the deductions so made be lower than the amount of the advance payment after the date of substantial completion of the Works, UNCDF may deduct the amount equal to the difference between the advance payment and the cumulative deductions from the payments due after substantial completion or may recover such amount from the bank guarantee referred to in 4.1 above.
- 4.3 The Performance **[SELECT BOND/GUARANTEE]** referred to in Clause 10 of the General Conditions shall be submitted by the Contractor for an amount of _____ **[INSERT - PERCENTAGE OF THE TOTAL]**

ESTIMATED OR FIXED PRICE OF THE CONTRACT IN THE CASE OF A GUARANTEE AND 30% IN THE CASE OF A BOND].¹⁵

- 4.4 ***[THE USE OF THIS CLAUSE REQUIRES APPROVAL BY THE PROJECT DIRECTOR/UNCDF PROGRAMME OFFICER]*** The Contractor may submit invoices for materials and plant stored at the Site, provided they are necessary and adequate for the performance of the Works and they are protected from weather conditions and duly insured as per the instructions of the Engineer.
- 4.5 The liability insurance referred to in Clause 23 of the General Conditions shall be taken out by the Contractor for an amount of.....**[CONSULT THE ENGINEER FOR APPROPRIATE AMOUNT]**.
- 4.6 According to Clause 45 of the General Conditions, the liquidated damages for delay shall be ____ **[INSERT PERCENTAGE]** of the price of the Contract per week of delay, up to a maximum of 10% of the final price of the Contract.

5. Submission of invoices

- 5.1 One original and one copy of every invoice shall be submitted by mail by the Contractor for each payment under the Contract to the Engineer's address specified in clause 8.2.
- 5.2 Invoices submitted by fax shall not be accepted by UNCDF.

¹² If the legislation of the Country of the Contractor forbids the use of bank guarantees, a bond may be accepted.

¹³ This clause must be used when an advance payment of \$50,000 or more is granted to the Consultant..

¹⁴ This clause must be used when an advance payment is granted (whatever the amount) in a cost reimbursement contract.

¹⁵ The reason for the distinction between a 10% bank guarantee and a 30% performance bond is that bank guarantees are generally unconditional and can be called directly without proof of nonperformance, whereas most performance bonds are conditional and require some proof of nonperformance. There are usually additional costs and time delays incurred with cashing a performance bond and so a higher percentage is requested to cover the extra work involved. Some banks outside of the U.S. may call certain guarantee instruments, "performance bonds or guarantees" although they may only be conditional guarantees. It is important to review the text of the instrument to determine whether it is a conditional or unconditional guarantee.

6. Time and manner of payment

6.1 Invoices shall be paid within thirty (30) days of the date of their receipt and acceptance by UNCDF.

6.2 All payments shall be made by UNCDF to the following Bank account of the Contractor:

_____ [NAME OF THE BANK]

_____ [ACCOUNT NUMBER]

_____ [ADDRESS OF THE BANK]

7. Modifications

7.1 Any modification to this Contract shall require an amendment in writing between both parties duly signed by the authorized representatives of the Contractor and UNCDF.

8. Notifications

8.1 For the purpose of notifications under the Contract, the addresses of UNCDF and the Contractor are as follows:

For the UNCDF:

_____ [INSERT NAME OF RR OR
DIVISION CHIEF]

Chief

United Nations Development Programme

Ref. ____/____/____ [INSERT CONTRACT REFERENCE & NUMBER]

Telex: _____

Fax: _____

Cable: _____

For the Contractor:

[Insert Name, Address and Telex,
Fax and Cable Numbers]

8.2 For the purposes of communications with the Engineer, the address of the Engineer shall be as follows:

[Insert Name, Address and Telex,
Fax and Cable Numbers of the Engineer]

OR

8.2 UNCDF shall communicate as soon as possible to the Contractor after the signature of the Contract, the address of the Engineer for the purposes of communication with the Engineer under the Contract.

If the above terms and conditions meet with your agreement as typed in this letter and in the Contract Documents, please initial every page of this letter and its attachments and return to this office one original of this Contract, duly signed and dated.

Yours sincerely,

[INSERT NAME OF RR or Bureau/Division Director]

For [Insert name of the company/organization]

Agreed and Accepted:

Signature _____

Name _____

Title

Date _____

ANNEX I

UNCDF GENERAL CONDITIONS OF CONTRACT FOR WORKS

**[INSERT REVISION NUMBER
AND DATE FROM THE CONTRACTS LIBRARY]**

ANNEX II

TECHNICAL SPECIFICATIONS AND DRAWINGS

General Conditions of Contract for Civil Works

1. Definitions
2. Singular and Plural
3. Headings or Notes
4. Legal Relationships
5. General Duties/Powers of Engineer
6. Contractor's General Obligations/Responsibilities
7. Assignment and Subcontracting
8. Drawings
9. Work Book
10. Performance Security
11. Inspection of Site
12. Sufficiency of Tender
13. Programme of Work to be Furnished
14. Weekly Site Meeting
15. Change Orders
16. Contractor's Superintendence
17. Contractor's Employees
18. Setting-Out
19. Watching and Lighting
20. Care of Works
21. Insurance of Works, Etc.
22. Damage to Persons and Property
23. Liability Insurance
24. Accident or Injury to Workmen
25. Remedy on Contractor's Failure to Insure
26. Compliance with Statutes, Regulations, Etc.
27. Fossils, Etc.
28. Copyright, Patents and Other Proprietary Rights, and Royalties
29. Interference With Traffic and Adjoining Properties
30. Extraordinary Traffic and Special Loads
31. Opportunities for Other Contractors
32. Contractor to Keep Site Clean
33. Clearance of Site on Substantial Completion
34. Labour
35. Returns of Labour, Plant, Etc.
36. Materials, Workmanship and Testing
37. Access to Site
38. Examination of Work Before Covering Up
39. Removal of Improper Work and Materials
40. Suspension of Work
41. Possession of Site
42. Time for Completion
43. Extension of Time for Completion

44. Rate of Progress
45. Liquidated Damages for Delay
46. Certificate of Substantial Completion
47. Defects Liability
48. Alterations, Additions and Omissions
49. Plant, Temporary Works and Materials
50. Approval of Materials, Etc., Not Implied
51. Measurement of Works
52. Liability of the Parties
53. Authorities
54. Urgent Repairs
55. Increase and Decrease of Costs
56. Taxation
57. Blasting
58. Machinery
59. Temporary Works and Reinstatement
60. Photographs and Advertising
61. Prevention of Corruption
62. Date Falling on Holiday
63. Notices
64. Language, Weights and Measures
65. Records, Accounts, Information and Audit
66. Force Majeure
67. Suspension by the UNCDF
68. Termination by the UNCDF
69. Termination by the Contractor
70. Rights and Remedies of the UNCDF
71. Settlement of Disputes
72. Privileges and Immunities

Appendix I: Formats of Performance Security
Performance Bank Guarantee
Performance Bond

1. DEFINITIONS

For the purpose of the Contract Documents the words and expressions below shall have the following meanings:

- a) "Employer" means the United Nations Capital Development Fund(UNCDF).
- b) "Contractor" means the person whose tender has been accepted and with whom the Contract has been entered into.
- c) "Engineer" means the person whose services have been engaged by UNCDF to administer the Contract as provided therein, as will be notified in writing to the Contractor.
- d) "Contract" means the written agreement between the Employer and the Contractor, to which these General Conditions are annexed.

- e) "The Works" means the works to be executed and completed under the Contract.
- f) "Temporary Works" shall include items to be constructed which are not intended to be permanent and form part of the Works.
- g) "Drawings" and "Specifications" mean the Drawings and Specifications referred to in the Contract and any modification thereof or addition thereto furnished by the Engineer or submitted by the Contractor and approved in writing by the Engineer in accordance with the Contract.
- h) "Bill of Quantities" is the document in which the Contractor indicates the cost of the Works, on the basis of the foreseen quantities of items of work and the fixed unit prices applicable to them.
- i) "Contract Price" means the sum agreed in the Contract as payable to the Contractor for the execution and completion of the Works and for remedying of any defects therein in accordance with the Contract.
- j) "Site" means the land and other places on, under, in or through which the Works or Temporary Works are to be constructed.

2. SINGULAR AND PLURAL

Words importing persons or parties shall include firms or companies and words importing the singular only shall also include the plural and vice versa where the context requires.

3. HEADINGS OR NOTES

The headings or notes in the Contract Documents shall not be deemed to be part thereof or be taken into consideration in their interpretation.

4. LEGAL RELATIONSHIPS

The Contractor and the sub-contractor(s), if any, shall have the status of an independent contractor vis-à-vis the Employer. The Contract Documents shall not be construed to create any contractual relationship of any kind between the Engineer and the Contractor, but the Engineer shall, in the exercise of his duties and powers under the Contract, be entitled to performance by the Contractor of its obligations, and to enforcement thereof. Nothing contained in the Contract Documents shall create any contractual relationship between the Employer or the Engineer and any subcontractor(s) of the Contractor.

5. GENERAL DUTIES/POWERS OF ENGINEER

- a) The Engineer shall provide administration of Contract as provided in the Contract Documents. In particular, he shall perform the functions hereinafter described.
- b) The Engineer shall be the Employer's representative vis-à-vis the Contractor during construction and until final payment is due. The Engineer shall advise and consult with the

Employer. The Employer's instructions to the Contractor shall be forwarded through the Engineer. The Engineer shall have authority to act on behalf of the Employer only to the extent provided in the Contract Documents as they may be amended in writing in accordance with the Contract. The duties, responsibilities and limitations of authority of the Engineer as the Employer's representative during construction as set forth in the Contract shall not be modified or extended without the written consent of the Employer, the Contractor and the Engineer.

- c) The Engineer shall visit the Site at intervals appropriate to the stage of construction to familiarize himself generally with the progress and quality of the Works and to determine in general if the Works are proceeding in accordance with the Contract Documents. On the basis of his on-site observations as an Engineer, he shall keep the Employer informed of the progress of the Works.
- d) The Engineer shall not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Works or the Temporary Works. The Engineer shall not be responsible for or have control or charge over the acts or omissions of the Contractor (including the Contractor's failure to carry out the Works in accordance with the Contract) and of Sub-contractors or any of their agents or employees, or any other persons performing services for the Works, except if such acts or omissions are caused by the Engineer's failure to perform his functions in accordance with the contract between the Employer and the Engineer.
- e) The Engineer shall at all times have access to the Works wherever and whether in preparation or progress. The Contractor shall provide facilities for such access so that the Engineer may perform his functions under the Contract.
- f) Based on the Engineer's observations and an evaluation of the documentation submitted by the Contractor together with the invoices, the Engineer shall determine the amounts owed to the Contractor and shall issue Certificates for Payment as appropriate.
- g) The Engineer shall review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for conformity with the design concept of the Works and with the provisions of the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.
- h) The Engineer shall interpret the requirements of the Contract Documents and judge the performance thereunder by the Contractor. All interpretations and orders of the Engineer shall be consistent with the intent of and reasonably inferable from the Contract Documents and shall be in writing or in the form of drawings. Either party may make a written request to the Engineer for such interpretation. The Engineer shall render the interpretation necessary for the proper execution of the Works with reasonable promptness and in accordance with any time limit agreed upon. Any claim or dispute arising from the interpretation of the Contract Documents by the Engineer or relating to the execution or progress of the Works shall be settled as provided in Clause 71 of these General Conditions.
- i) Except as otherwise provided in the Contract, the Engineer shall have no authority to relieve the Contractor of any of his obligations under the Contract nor to order any work involving delay in completion of the Works or any extra payment to the Contractor by the Employer, or to make any variations to the Works.

- j) In the event of termination of the employment of the Engineer, the Employer shall appoint another suitable professional to perform the Engineer's duties.
- k) The Engineer shall have authority to reject work which does not conform to the Contract Documents. Whenever, in his opinion, he considers it necessary or advisable for the implementation of the intent of the Contract Documents, he will have authority to require special inspection or testing of the work whether or not such work be then fabricated, installed or completed. However, neither the Engineer's authority to act nor any reasonable decision made by him in good faith either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Engineer to the Contractor, any subcontractor, any of their agents or employees, or any other person performing services for the Works.
- l) The Engineer shall conduct inspections to determine the dates of Substantial Completion and Final Completion, shall receive and forward to the Employer for the Employer's review written warranties and related documents required by the Contract and assembled by the Contractor, and shall issue a final Certificate for Payment upon compliance with the requirements of Clause 47 hereof and in accordance with the Contract.
- m) If the Employer and Engineer so agree, the Engineer shall provide one or more Engineer's Representative(s) to assist the Engineer in carrying out his responsibilities at the site. The Engineer shall notify in writing to the Contractor and the Employer the duties, responsibilities and limitations of authority of any such Engineer's Representative(s).

6. CONTRACTOR'S GENERAL OBLIGATIONS/RESPONSIBILITIES

6.1.Obligation to Perform in Accordance with Contract

The Contractor shall execute and complete the Works and remedy any defects therein in strict accordance with the Contract, with due care and diligence and to the satisfaction of the Engineer, and shall provide all labor, including the supervision thereof, materials, Constructional Plant and all other things, whether of a temporary or permanent nature, required in and for such execution, completion and remedying of defects, as far as the necessity for providing the same is specified in or is reasonably to be inferred from the Contract. The Contractor shall comply with and adhere strictly to the Engineer's instructions and directions on any matter, touching or concerning the Works.

6.2 Responsibility for Site Operations

The Contractor shall take full responsibility for the adequacy, stability and safety of all site operations and methods of construction, provided that the Contractor shall not be responsible, except as may be expressly provided in the Contract, for the design or specification of the Permanent Works or of any Temporary Works prepared by the Engineer.

6.3.Responsibility for Employees

The Contractor shall be responsible for the professional and technical competence of his employees and will select for work under this Contract, reliable individuals who will perform effectively in the implementation of the Contract, respect local customs and conform to a high standard of moral and ethical conduct.

6.4.Source of Instructions

The Contractor shall neither seek nor accept instructions from any authority external to the Employer, the Engineer or their authorized representatives in connection with the performance of his services under this Contract. The Contractor shall refrain from any action which may adversely affect the Employer and shall fulfill his commitments with fullest regard for the interest of the Employer.

6.5.Officials Not to Benefit

The Contractor warrants that no official of the Employer has been or shall be admitted by the Contractor to any direct or indirect benefit arising from this Contract or the award thereof. The Contractor agrees that breach of this provision is a breach of an essential term of the Contract.

6.6.Use of Name, Emblem or Official Seal of UNCDF or the United Nations

The Contractor shall not advertise or otherwise make public the fact that he is performing, or has performed services for the Employer or use the name, emblem or official seal of the Employer or the United Nations or any abbreviation of the name of the Employer or the United Nations for advertising purposes or any other purposes.

6.7.Confidential Nature of Documents

All maps, drawings, photographs, mosaics, plans, reports, recommendations, estimates, documents and all other data compiled by or received by the Contractor under the Contract shall be the property of the Employer, shall be treated as confidential and shall be delivered only to the duly authorized representative of the Employer on completion of the Works; their contents shall not be made known by the Contractor to any person other than the personnel of the Contractor performing services under this Contract without the prior written consent of the Employer.

7. ASSIGNMENT AND SUBCONTRACTING

7.1.Assignment of Contract

The Contractor shall not, except after obtaining the prior written approval of the Employer, assign, transfer, pledge or make other disposition of the Contract or any part thereof or of any of the Contractor's rights, claims or obligations under the Contract.

7.2.Subcontracting

In the event the Contractor requires the services of subcontractors, the Contractor shall obtain the prior written approval of the Employer for all such subcontractors. The approval of the Employer shall not relieve the Contractor of any of his obligations under the Contract, and the terms of any subcontract shall be subject to and be in conformity with the provisions of the Contract.

7.3. Assignment of Subcontractor's Obligations

In the event of a subcontractor having undertaken towards the Contractor in respect of the work executed or the goods, materials, Plant or services supplied by such subcontractor for the Works, any continuing obligation extending for a period exceeding that of the Defects Liability Period under the Contract, the Contractor

shall at any time after the expiration of such Period, assign to the Employer, at the Employer's request and cost, the benefit of such obligation for the unexpired duration thereof.

8. DRAWINGS

8.1. Custody of drawings

The drawings shall remain in the sole custody of the Employer but two (2) copies thereof shall be furnished to the Contractor free of cost. The Contractor shall provide and make at his own expense any further copies required by him. At the completion of the Works, the Contractor shall return to the Employer all drawings provided under the Contract.

8.2. One copy of Drawings to be kept on Site

One copy of the Drawings furnished to the Contractor as aforesaid shall be kept by the Contractor on the Site and the same shall at all reasonable times be available for inspection and use by the Engineer and by any other person authorized in writing by the Engineer.

8.3. Disruption of Progress

The Contractor shall give written notice to the Engineer whenever planning or progress of the Works is likely to be delayed or disrupted unless any further drawing or order, including a direction, instruction or approval, is issued by the Engineer within a reasonable time. The notice shall include details of drawing or order required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late.

9. WORK BOOK

The Contractor shall maintain a Work Book at the Site with numbered pages, in one original and two copies. The Engineer shall have full authority to issue new orders, drawings and instructions to the Contractor, from time to time and as required for the correct execution of the Works. The Contractor shall be bound to follow such orders, drawings and instructions.

Every order shall be dated and signed by the Engineer and the Contractor, in order to account for its receipt.

Should the Contractor want to refuse an order in the Work Book, he shall so inform the Employer, through the Engineer, by means of an annotation in the Work Book made within three (3) days from the date of the order that the Contractor intends to refuse. Failure by the Contractor to adhere to this procedure shall result in the order being deemed accepted with no further possibility of refusal.

The original of the Work Book shall be delivered to the Employer at the time of Final Acceptance of the Works. A copy shall be kept by the Engineer and another copy by the Contractor.

10. PERFORMANCE SECURITY

- a) As guarantee for his proper and efficient performance of the Contract, the Contractor shall on signature of the Contract furnish the Employer with a Performance Security issued for the benefit of the Employer. The amount and character of such security (bond or guarantee) shall be as indicated in the Contract.
- b) The Performance Bond or Bank Guarantee must be issued by an acceptable insurance company or accredited bank, in the format included in Appendix I to these General Conditions, and must be valid up to twenty-eight days after issuance by the Engineer of the Certificate of Final Completion. The Performance Bond or Bank Guarantee shall be returned to the Contractor within twenty-eight days after the issuance by the Engineer of the Certificate of Final Completion, provided that the Contractor shall have paid all money owed to the Employer under the Contract.
- c) If the surety of the Performance Bond or Bank Guarantee is declared bankrupt or becomes insolvent or its right to do business in the country of execution of the Works is terminated, the Contractor shall within five (5) days thereafter substitute another bond or guarantee and surety, both of which must be acceptable to the Employer.

11. INSPECTION OF SITE

The Contractor shall be deemed to have inspected and examined the site and its surroundings and to have satisfied himself before submitting his Tender and signing the Contract as to all matters relative to the nature of the land and subsoil, the form and nature of the Site, details and levels of existing pipe lines, conduits, sewers, drains, cables or other existing services, the quantities and nature of the work and materials necessary for the completion of the Works, the means of access to the Site, and the accommodation he may require, and in general to have himself obtained all necessary information as to risk contingencies, climatic, hydrological and natural conditions and other circumstances which may influence or affect his Tender, and no claims will be entertained in this connection against the Employer.

12. SUFFICIENCY OF TENDER

The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his Tender for the construction of the Works and of the rates and prices, which rates and prices shall, except in so far as it is otherwise provided in the Contract, cover all his obligations under the Contract and all matters and things necessary for the proper execution and completion of the Works.

13. PROGRAMME OF WORK TO BE FURNISHED

Within the time limit specified in the Contract, the Contractor shall submit to the Engineer for his consent a detailed Programme of Work showing the order of procedure and the method in which he proposes to carry out the Works. In preparing

his Programme of Work the Contractor shall pay due regard to the priority required by certain works. Should the Engineer, during the progress of work, require further modifications to the Programme of Work, the Contractor shall review the said program. The Contractor shall also whenever required by the Engineer submit particulars in writing of the Contractor's arrangements for carrying out the Works and of the Constructional Plant and Temporary Works which the Contractor intends to supply, use or construct as the case may be. The submission of such program, or any modifications thereto, or the particulars required by the Engineer, shall not relieve the Contractor of any of his duties or obligations under the Contract nor shall the incorporation of any modification to the Programme of Work either at the commencement of the contract or during its course entitle the Contractor to any additional payments in consequence thereof.

14. WEEKLY SITE MEETING

A weekly site meeting shall be held between the UNCDF Project Coordinator or engineer, if any, the representative of the Contractor and the Engineer or the Engineer's Representative, in order to verify that the Works are progressing normally and are executed in accordance with the Contract.

15. CHANGE ORDERS

- a) The Engineer may instruct the Contractor, with the approval of the Employer and by means of Change Orders, all variations in quantity or quality of the Works, in whole or in part, that are deemed necessary by the Engineer.
- b) Processing of change orders shall be governed by clause 48 of these General Conditions.

16. CONTRACTOR'S SUPERINTENDENCE

The Contractor shall provide all necessary superintendence during the execution of the Works and as long thereafter as the Engineer may consider necessary for the proper fulfillment of the Contractor's obligations under the Contract. The Contractor or a competent and authorized agent or representative of the Contractor approved in writing by the Engineer, which approval may at any time be withdrawn, shall be constantly on the site and shall devote his entire time to the superintendence of the Works. Such authorized agent or representative shall receive on behalf of the Contractor directions and instructions from the Engineer. If the approval of such agent or representative shall be withdrawn by the Engineer, as provided in Clause 17(2) hereinafter, or if the removal of such agent or representative shall be requested by the Employer under Clause 17(3) hereinafter, the Contractor shall as soon as it is practicable after receiving notice of such withdrawal remove the agent or representative from the Site, and replace him by another agent or representative approved by the Engineer. Notwithstanding the provision of Clause 17(2) hereinafter, the Contractor shall not thereafter employ, in any capacity whatsoever, a removed agent or representative again on the Site.

17. CONTRACTOR'S EMPLOYEES

- a) The Contractor shall provide and employ on the Site in connection with the execution and completion of the Works and the remedying of any defects therein:
 - i. Only such technical assistants as are skilled and experienced in their respective callings and such sub-agent foremen and leading hands as are competent to give proper supervision to the work they are required to supervise, and
 - ii. Such skilled, semi-skilled, and unskilled labour as is necessary for the proper and timely execution and completion of the Works.
- b) The Engineer shall be at liberty to object to and require the Contractor to remove forthwith from the Works any person employed by the Contractor in or about the execution or completion of the Works, who in the opinion of the Engineer is misconducting himself, or is incompetent or negligent in the proper performance of his duties, or whose employment is otherwise considered reasonably by the Engineer to be undesirable, and such person shall not be again employed on the Site without the written permission of the Engineer. Any person so removed from the Works shall be replaced as soon as reasonably possible by a competent substitute approved by the Engineer.
- c) Upon written request by the Employer, the Contractor shall withdraw or replace from the Site any agent, representative or other personnel who does not conform to the standards set forth in paragraph (1) of this Clause. Such request for withdrawal or replacement shall not be considered as termination in part or in whole of this Contract. All costs and additional expenses resulting from any withdrawal or replacement for whatever reason of any of the Contractor's personnel shall be at the Contractor's expense.

18. SETTING-OUT

The Contractor shall be responsible for the true and proper setting out of the Works in relation to original points, lines and levels of reference given by the Engineer in writing and for the correctness of the position, levels, dimensions and alignment of all parts of the Works and for the provision of all necessary instruments, appliances and labor in connection therewith. If, at any time during the progress of the Works, any error shall appear or arise in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required so to do by the Engineer, shall, at his own cost, rectify such error to the satisfaction of the Engineer.

19. WATCHING AND LIGHTING

The Contractor shall in connection with the Works provide and maintain at his own cost all lights, guards, fencing and watching when and where necessary or required by the Engineer or by any duly constituted authority for the protection of the Works and the materials and equipment utilized therefor or for the safety and convenience of the public or others.

20. CARE OF WORKS

- a) From the commencement date of the Works to the date of substantial completion as stated in the Certificate of Substantial Completion, the Contractor shall take full responsibility for the care thereof and of all Temporary Works. In the event that any damage or loss should happen

to the Works or to any part thereof or to any Temporary Works from any cause whatsoever (save and except as shall be due to Force Majeure as defined in Clause 66 of these General Conditions), the Contractor shall at his own cost repair and make good the same so that, at completion, the Works shall be in good order and condition and in conformity in every respect with the requirements of the Contract and the Engineer's instructions. The Contractor shall also be liable for any damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligations Clause 47 hereof.

- b) The Contractor shall be fully responsible for the review of the Engineering design and details of the Works and shall inform the Employer of any mistakes or incorrectness in such design and details which would affect the Works.

21. INSURANCE OF WORKS, ETC.

Without limiting his obligations and responsibilities under Clause 20 hereof, the Contractor shall insure immediately following signature of this Contract, in the joint names of the Employer and the Contractor (a) for the period stipulated in Clause 20(1) hereof, against all loss or damage from whatever cause arising, other than cause of Force majeure as defined in clause 66 of these General Conditions, and (b) against loss or damage for which the Contractor is responsible, in such manner that the Employer and the Contractor are covered for the period stipulated in Clause 20 (1) hereof and are also covered during the Defects Liability Period for loss or damage arising from a cause occurring prior to the commencement of the Defects Liability Period and for any loss or damage occasioned by the Contractor in the course of any operations carried out by him for the purpose of complying with his obligations under Clause 47 hereof:

- a) The Works, together with the materials and Plant for incorporation therein, to their full replacement cost, plus an additional sum of ten (10) per cent of such replacement cost, to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature;
- b) The Contractor's equipment and other things brought on to the Site by the Contractor to the replacement value of such equipment and other things;
- c) An insurance to cover the liabilities and warranties of Section 52(4);

Such insurance shall be effected with an insurer and in terms approved by the Employer, which approval shall not be unreasonably withheld, and the Contractor shall, whenever required, produce to the Engineer the policy or policies of insurance and the receipts for payment of the current premiums.

22. DAMAGE TO PERSONS AND PROPERTY

The Contractor shall (except if and so far as the Contract provides otherwise) indemnify, hold and save harmless and defend at his own expense the Employer, its officers, agents, employees and servants from and against all suits, claims, demands, proceedings, and liability of any nature or kind, including costs and expenses, for injuries or damages to any person or any property whatsoever which may arise out of

or in consequence of acts or omissions of the Contractor or its agents, employees, servants or subcontractors in the execution of the Contract. The provision of this Clause shall extend to suits, claims, demands, proceedings and liability in the nature of workmen's compensation claims and arising out of the use of patented inventions and devices. Provided always that nothing herein contained shall be deemed to render the Contractor liable for or in respect of or with respect to:

- a) The permanent use or occupation of land by the Works or any part thereof;
- b) The right of the Employer to construct the Works or any part thereof on, over, under, or through any land.
- c) Interference whether temporary or permanent with any right of light, airway or water or other easement or quasi-easement which is the unavoidable result of the construction of the Works in accordance with the Contract.
- d) Death, injuries or damage to persons or property resulting from any act or neglect of the Employer, his agents, servants or other contractors, done or committed during the validity of the Contract.

23. LIABILITY INSURANCE

23.1. Obligation to take out Liability Insurance

Before commencing the execution of the Works, but without limiting his obligations and responsibility under Clause 20 hereof, the Contractor shall insure against his liability for any death, material or physical damage, loss or injury which may occur to any property, including that of the Employer or to any person, including any employee of the Employer by or arising out of the execution of the Works or in the carrying out of the Contract, other than due to the matters referred to in the proviso to Clause 22 hereof.

23.2. Minimum Amount of Liability Insurance

Such insurance shall be effected with an insurer and in terms approved by the Employer, which approval shall not be unreasonably withheld, and for at least the amount specified in the contract. The Contractor shall, whenever required by the Employer or the Engineer, produce to the Engineer the policy or policies of insurance and the receipts for payment of the current premiums.

23.3. Provision to Indemnify Employer

The insurance policy shall include a provision whereby, in the event of any claim in respect of which the Contractor would be entitled to receive indemnity under the policy, being brought or made against the Employer, the insurer shall indemnify the Employer against such claims and any costs, charges and expenses in respect thereof.

24. ACCIDENT OR INJURY TO WORKMEN

- a) The Employer shall not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workman or other person in the employment of the Contractor or any sub-Contractor, save and except an accident or injury

resulting from any act or default of the Employer, his agents or servants. The Contractor shall indemnify, hold and save harmless the Employer against all such damages and compensation, save and except as aforesaid, and against all claims, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

b) Insurance Against Accident, etc., to Workmen

The Contractor shall insure against such liability with an insurer approved by the Employer, which approval shall not be unreasonably withheld, and shall continue such insurance during the whole of the time that any persons are employed by him for the Works and shall, when required, produce to the Engineer such policy of insurance and the receipt for payment of the current premium. Provided always that, in respect of any persons employed by any subcontractor, the Contractor's obligation to insure as aforesaid under this sub-clause shall be satisfied if the subcontractor shall have insured against the liability in respect of such persons in such manner that the Employer is indemnified under the policy but the Contractor shall require such subcontractor to produce to the Engineer when required such policy of insurance and the receipt for the current premium, and obtain the insertion of a provision to that effect in its contract with the subcontractor.

25. REMEDY ON CONTRACTOR'S FAILURE TO INSURE

If the Contractor shall fail to effect and keep in force any of the insurances referred to in Clauses 21, 23 and 24 hereof, or any other insurance which he may be required to effect under the terms of the Contract, the Employer may in any such case effect and keep in force any such insurance and pay such premium as may be necessary for that purpose and from time to time deduct the amount so paid by the Employer as aforesaid from any monies due or which may become due to the Contractor, or recover the same as a debt due from the Contractor.

26. COMPLIANCE WITH STATUTES, REGULATIONS, ETC.

- a) The Contractor shall give all notices and pay all fees and charges required to be given or paid by any national or State Statutes, Ordinances, Laws, Regulations or By-laws, or any local or other duly constituted authority in relation to the execution of the Works or of any Temporary Works and by the Rules and Regulations of all public bodies and companies whose property or rights are affected or may be affected in any way by the Works or any Temporary Works.
- b) The Contractor shall conform in all respects with any such Statutes, Ordinances, Laws, Regulations, By-laws or requirements of any such local or other authority which may be applicable to the Works and shall keep the Employer indemnified against all penalties and liabilities of every kind for breach of any such Statutes, Ordinances, Laws, Regulations, By-laws or requirements.

27. FOSSILS, ETC.

All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the Site of the Works shall as between the Employer and the Contractor be deemed to be the absolute property of the Employer and the Contractor shall take reasonable precautions to

prevent his workmen or any other persons from removing or damaging any such article or thing and shall immediately upon discovery thereof and before removal acquaint the Employer of such discovery and carry out at the expense of the Employer the Engineer's orders as to the disposal of the same.

28. COPYRIGHT, PATENT AND OTHER PROPRIETARY RIGHTS, AND ROYALTIES

- a) The Contractor shall hold harmless and fully indemnify the Employer from and against all claims and proceedings for or on account of infringement of any patent rights, design trademark or name or other protected rights in respect of any Plant, equipment, machine, work or material used for or in connection with the Works or Temporary Works and from and against all claims, demands proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, except where such infringement results from compliance with the design or Specification provided by the Engineer.
- b) Except where otherwise specified, the Contractor shall pay all tonnage and other royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the Works or Temporary Works.

29. INTERFERENCE WITH TRAFFIC AND ADJOINING PROPERTIES

All operations necessary for the execution of the Works and for the Construction of any Temporary Works shall, so far as compliance with the requirements of the Contract permits, be carried on so as not to interfere unnecessarily or improperly with the public convenience, or the access to, use and occupation of, public or private roads and footpaths to or of properties whether in the possession of the Employer or of any other person. The Contractor shall hold harmless and indemnify the Employer in respect of all claims, demands, proceedings, damages, costs, charges and expenses whatsoever arising out of or in relation to any such matters in so far as the Contractor is responsible therefor.

30. EXTRAORDINARY TRAFFIC AND SPECIAL LOADS

- a) The Contractor shall use every reasonable means to prevent any of the roads or bridges communicating with or on the routes to the Site from being damaged by any traffic of the Contractor or any of his sub-contractors and, in particular, shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of plant and material from and to the Site shall be limited as far as reasonably possible and so that no unnecessary damage may be occasioned to such roads and bridges.
- b) Should it be found necessary for the Contractor to move any load of Constructional Plant, machinery, preconstructed units or parts of units of work, or other thing, over part of a road or bridge, the moving whereof is likely to damage any such road or bridge unless special protection or strengthening is carried out, then the Contractor shall before moving the load on to such road or bridge, save insofar as the Contract otherwise provide, be responsible for and shall pay for the cost of strengthening any such bridge or altering or improving any such road to avoid such damage, and the Contractor shall indemnify and keep the Employer indemnified against all claims for damage to any such road or bridge caused by such movement, including such claim as may be made directly against the Employer, and shall negotiate and pay all claims arising solely out of such damage.

31. OPPORTUNITIES FOR OTHER CONTRACTORS

The Contractor shall in accordance with the requirements of the Engineer afford all reasonable opportunities for carrying out their work to any other contractors employed by the Employer and their workmen and to the workmen of the Employer and of any other duly constituted authorities who may be employed in the execution on or near the Site of any work not included in the Contract or of any contract which the Employer may enter into in connection with or ancillary to the Works. If work by other contractors of the Employer as above-mentioned involves the Contractor in any direct expenses as a result of using his Site facilities, the Employer shall consider payment to the Contractor of such sum or sums as may be recommended by the Engineer.

32. CONTRACTOR TO KEEP SITE CLEAN

During the progress of the Works, the Contractor shall keep the Site reasonably free from all unnecessary obstruction and shall store or dispose of any Constructional Plant and surplus materials and clear away and remove from the Site any wreckage, rubbish or Temporary Works no longer required.

33. CLEARANCE OF SITE ON SUBSTANTIAL COMPLETION

On the substantial completion of the Works, the Contractor shall clear away and remove from the Site all Constructional Plant surplus materials, rubbish and Temporary Works of every kind and leave the whole of the Site and Works clean and in a workmanlike condition to the satisfaction of the Engineer.

34. LABOUR

34.1 Engagement of Labour

The Contractor shall make his own arrangements for the engagement of all labour local or otherwise.

34.2 Supply of Water

The Contractor shall provide on the Site to the satisfaction of the Engineer an adequate supply of drinking and other water for the use of the Contractor's staff and work people.

34.3 Alcoholic Drinks or Drugs

The Contractor shall comply with Government laws and regulations and orders in force as regards the import, sale, barter or disposal of alcoholic drinks or narcotics and he shall not allow or facilitate such importation, sale, gift, barter or disposal by his sub-contractors, agents or employees.

34.4 Arms and Ammunition

The restrictions specified in clause 34.3 above shall include all kinds of arms and ammunition.

34.5 Holiday and Religious Customs

The Contractor shall in all dealings with labour in his employ have due regard to all holiday, recognized festivals and religious or other customs.

34.6 Epidemics

In the event of any outbreak of illness of an epidemic nature the Contractor shall comply with and carry out such regulations, orders, and requirements as may be made by the Government or the local medical or sanitary authorities for the purpose of dealing with and overcoming the same.

34.7 Disorderly Conduct, etc.

The Contractor shall at all times take all reasonable precautions to prevent any unlawful riotous or disorderly conduct by or amongst his employees and for the preservation of peace and the protection of persons and property in the neighborhood of the Works against the same.

34.8 Observance by Sub-Contractors

The Contractor shall be considered responsible for the observance of the above provisions by his Sub-Contractors.

34.9 Legislation applicable to Labour

The Contractor shall abide by all applicable legislation and regulation with regard to labour.

35 RETURNS OF LABOUR, PLANT, ETC.

The Contractor shall, if required by the Engineer, deliver to the Engineer at his office, a return in detail in the form and at such intervals as the Engineer may prescribe showing the supervisory staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such information respecting Constructional plant as the Engineer may require.

36 MATERIALS, WORKMANSHIP AND TESTING

36.1 Materials and Workmanship

- a) All materials and workmanship shall be of the respective kinds described in the Contract and in accordance with the Engineer's instructions and shall be subjected from time to time to such tests as the Engineer may direct at the place of manufacture or fabrication, or on the Site or at

all or any of such places. The Contractor shall provide such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any materials used and shall supply samples of materials before incorporation in the Works for testing as may be selected and required by the Engineer. All testing equipment and instruments provided by the Contractor shall be used only by the Engineer or by the Contractor in accordance with the instructions of the Engineer.

- b) No material not conforming with the Specifications in the Contract may be used for the Works without prior written approval of the Employer and instruction of the Engineer, provided always that if the use of such material results or may result in increasing the Contract Price, the procedure in Clause 48 shall apply.

36.2 Cost of Samples

All samples shall be supplied by the Contractor at his own cost unless the supply thereof is clearly intended in the Specifications or Bill of Quantities to be at the cost of the Employer. Payment will not be made for samples which do not comply with the Specifications.

36.3 Cost of Tests

The Contractor shall bear the costs of any of the following tests:

- a) Those clearly intended by or provided for in the Contract Documents.
- b) Those involving load testing or tests to ensure that the design of the whole of the Works or any part of the Works is appropriate for the purpose which it was intended to fulfill.

37 ACCESS TO SITE

The Employer and the Engineer and any persons authorized by either of them shall, at all times, have access to the Works and to the Site and to all workshops and places where work is being prepared or whence materials, manufactured articles or machinery are being obtained for the Works and the Contractor shall afford every facility for and every assistance in or in obtaining the right to such access.

38 EXAMINATION OF WORK BEFORE COVERING UP

No work shall be covered up or put out of view without the approval of the Engineer and the Contractor shall afford full opportunity for the Engineer to examine and measure any work which is about to be covered up or put out of view and to examine foundations before permanent work is placed thereon. The Contractor shall give due notice to the Engineer whenever any such work or foundations is or are ready or about to be ready for examination and the Engineer shall without unreasonable delay unless he considers it unnecessary and advises the Contractor accordingly attend for the purpose of examining and measuring such work or of examining such foundations.

39 REMOVAL OF IMPROPER WORK AND MATERIALS

39.1 Engineer's power to order removal

The Engineer shall during the progress of the Works have power to order in writing from time to time, and the Contractor shall execute at his cost and expense, the following operations:

- a) The removal from the Site within such time or times as may be specified in the order of any materials which in the opinion of the Engineer are not in accordance with the Contract;
- b) The substitution of proper and suitable materials; and
- c) The removal and proper re-execution (notwithstanding any previous test thereof or interim payment therefore) of any work which in respect of materials or workmanship is not in the opinion of the Engineer in accordance with the Contract.

39.2 Default of Contractor in carrying out Engineer's Instructions

In case of default on the part of the Contractor in carrying out an instruction of the Engineer, the Employer shall be entitled to employ and pay other persons to carry out the same and all expenses consequent thereon or incidental thereto shall be borne by the Contractor and shall be recoverable from him by the Employer and may be deducted by the Employer from any monies due or which may become due to the Contractor.

40 SUSPENSION OF WORK

The Contractor shall on the written order of the Engineer suspend the progress of the Works or any part thereof for such time or times and in such manner as the Engineer may consider necessary and shall, during such suspension, properly protect and secure the Works so far as it is necessary in the opinion of the Engineer. The Employer should be notified and his written approval should be sought for any suspension of work in excess of three (3) days.

41 POSSESSION OF SITE

41.1 Access to Site

The Employer shall with the Engineer's written order to commence the Works, give to the Contractor possession of so much of the Site as may be required to enable the Contractor to commence and proceed with the construction of the Works in accordance with the Programme referred to in Clause 13 hereof and otherwise in accordance with such reasonable proposals of the Contractor as he shall make to the Engineer by notice in writing, and shall from time to time as the Works proceed give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the construction of the Works with due dispatch in accordance with the said Programme or proposals, as the case may be.

41.2 Wayleaves, etc.

The Contractor shall bear all expenses and charges for special temporary wayleaves required by him in connection with access to the Site. The Contractor shall also provide at his own cost any additional accommodation outside the Site required by him for the purpose of the Works.

41.3 Limits of the Site

Except as defined below, the limits of the Site shall be as defined in the Contract. Should the Contractor require land beyond the Site, he shall provide it entirely at his own expense and before taking possession shall supply the Engineer with a copy of the necessary permits. Access to the Site is available where the Site adjoins a public road but it is not provided unless shown on the Drawings. When necessary for the safety and convenience of workmen, public or livestock or for the protection of the Works, the Contractor shall, at his own expense, provide adequate temporary fencing to the whole or part of the Site. The Contractor shall not disturb, damage or pull down any hedge, tree or building within the Site without the written consent of the Engineer.

42 TIME FOR COMPLETION

- a) Subject to any requirement in the Contract as to completion of any section of the Works before completion of the whole, the whole of the Works shall be completed, in accordance with the provisions of Clause 46 and 47 hereof, within the time stated in the Contract.
- b) The completion time includes weekly rest days, official holidays, and days of inclement weather.

43 EXTENSION OF TIME FOR COMPLETION

If, subject to the provisions of the Contract, the Engineer orders alterations or additions in the Works in accordance with Clause 48 hereof, or if circumstances constituting force majeure as defined in the Contract have occurred, the Contractor shall be entitled to apply for an extension of the time for completion of the Works specified in the Contract. The Employer shall, upon such application, determine the period of any such extension of time; provided that in the case of alterations or additions in the Works, the application for such an extension must be made before the alterations or additions in the Works are undertaken by the Contractor.

44 RATE OF PROGRESS

The whole of the materials, plant and labour to be provided by the Contractor and the mode, manner and speed of execution and completion of the Works are to be of a kind and conducted in a manner to the satisfaction of the Engineer. Should the rate of progress of the Works or any part thereof be at any time in the opinion of the Engineer too slow to ensure the completion of the Works by the prescribed time or extended time for completion, the Engineer shall so notify the Contractor in writing and

the Contractor shall thereupon take such steps as the Contractor may think necessary and the Engineer may approve to expedite progress so as to complete the Works by the prescribed time or extended time for completion. If the work is not being carried on by day and by night and the Contractor shall request permission to work by night as well as by day, then, if the Engineer shall grant such permission, the Contractor shall not be entitled to any additional payment. All work at night shall be carried out without unreasonable noise and disturbance. The contractor shall indemnify the Employer from and against any claims or liability for damages on account of noise or other disturbance created while or in carrying out the work and from and against all claims, demands, proceedings, costs and expenses whatsoever in regard or in relation to such noise or other disturbance. The Contractor shall submit in triplicate to the Engineer at the end of each month signed copies of explanatory Drawings or any other material showing the progress of the Works.

45 LIQUIDATED DAMAGES FOR DELAY

- a) If the Contractor shall fail to complete the Works within the time for completion prescribed in the Contract, or any extended time for completion in accordance with the Contract, then the Contractor shall pay to the Employer the sum specified in the Contract as liquidated damages, for the delay between the time prescribed in the Contract or the extended time for completion, as the case may be, and the date of substantial completion of the Works as stated in the Certificate of Substantial Completion, subject to the applicable limit stated in the Contract. The said sum shall be payable by the sole fact of the delay without the need for any previous notice or any legal proceedings, or proof of damage, which shall in all cases be considered as ascertained. The Employer may, without prejudice to any other method of recovery, deduct the amount of such liquidated damages from any monies in its hands due or which may become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works or from any other of his obligations and liabilities under the Contract.
- b) If, before the time for completion of the whole of the Works or of a Section of the Works, a Certificate of Substantial Completion has been issued for any part or Section of the Works, the liquidated damages for delay in completion of the remainder of the Works or of that Section may, for any period of delay after the date stated in such Certificate of Substantial Completion, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part or Section so certified bears to the total value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

46 CERTIFICATE OF SUBSTANTIAL COMPLETION

46.1 Substantial Completion of the Works

When the whole of the Works have been substantially completed and have satisfactorily passed any test on completion prescribed by the Contract, the Contractor may give a notice to that effect to the Engineer accompanied by an undertaking to finish any outstanding work during the Defects Liability Period. Such notice and undertaking shall be in writing and shall be deemed to be a request by the Contractor, for the Engineer to issue a Certificate of Substantial Completion in respect of the Works. The Engineer shall, within twenty-one (21) days of the date of delivery of such

notice either issue to the Contractor, with a copy to the Employer, a Certificate of Substantial Completion stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract or give instructions in writing to the Contractor specifying all the work which, in the Engineer's opinion, requires to be done by the Contractor before the issuance of such Certificate. The Engineer shall also notify the Contractor of any defects in the Works affecting substantial completion that may appear after such instructions and before completion of the work specified therein. The Contractor shall be entitled to receive such Certificate of Substantial Completion within twenty-one (21) days of completion, to the satisfaction of the Engineer, of the work so specified and making good any defect so notified. Upon issuance of the Certificate of Substantial Completion of the Works, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work during the Defects Liability Period.

46.2 Substantial Completion of Sections or Parts of the Works

In accordance with the procedure in Sub-Clause (1) of this Clause and on the same conditions as provided therein, the Contractor may request the Engineer to issue, and the Engineer may issue, a Certificate of Substantial Completion in respect of any Section or part of the Works which has been substantially completed and has satisfactorily passed any tests on completion prescribed by the Contract, if:

- a) a separate time for completion is provided in the Contract in respect of such Section or part of the Works;
- b) such Section or part of the Works has been completed to the satisfaction of the Engineer and is required by the Employer for his occupation or use.

Upon the issuance of such Certificate, the Contractor shall be deemed to have undertaken to complete any outstanding work during the Defects Liability Period.

47 DEFECTS LIABILITY

47.1 Defects Liability Period

The expression "Defects Liability Period" shall mean the period of twelve (12) months, calculated from the date of completion of the Works stated in the Certificate of Substantial Completion issued by the Engineer or, in respect of any Section or part of the Works for which a separate Certificate of Substantial Completion has been issued, from the date of completion of that Section or part as stated in the relevant Certificate. The expression "the Works" shall, in respect of the Defects Liability Period, be construed accordingly.

47.2 Completion of Outstanding Work and Remedying of Defects

During the Defects Liability Period, the Contractor shall finish the work, if any, outstanding at the date of the Certificate of Substantial Completion, and shall execute all such work of repair, amendment, reconstruction, rectification and making good defects, imperfections, shrinkages or other faults as may be required of the Contractor

in writing by the Engineer during the Defects Liability Period and within fourteen (14) days after its expiration, as a result of an inspection made by or on behalf of the Engineer prior to expiration of the Defects Liability Period.

47.3 Cost of Execution of Work of Repair, etc.

All such outstanding work shall be carried out by the Contractor at his own expense if the necessity thereof shall, in the opinion of the Engineer, be due to the use of material or workmanship not in accordance with the Contract, or to neglect or failure on the part of the Contractor to comply with any obligation expressed or implied, on the Contractor's part under the Contract.

47.4 Remedy on Contractor's Failure to Carry Out Work Required

If the Contractor shall fail to do any such work outstanding on the Works, the Employer shall be entitled to employ and pay other persons to carry out the same, and all expenses consequent thereon or incidental thereto shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or which may become due to the Contractor.

47.5 Certificate of Final Completion

Upon satisfactory completion of the work outstanding on the Works, the Engineer shall within twenty eight (28) days of the expiration of the Defects Liability period issue a Certificate of Final Completion to the Contractor. The Contract shall be deemed to be completed upon issuance of such Certificate, provided that the provisions of the Contract which remain unperformed and the Settlement of Disputes provision in the Contract shall remain in force for as long as is necessary to dispose of any outstanding matters or issues between the Parties.

48 ALTERATIONS, ADDITIONS AND OMISSIONS

1 Variations

The Engineer may within his powers introduce any variations to the form, type or quality of the Works or any part thereof which he considers necessary and for that purpose or if for any other reasons it shall, in his opinion be desirable, he shall have power to order the Contractor to do and the Contractor shall do any of the following:

- (a) increase or decrease the quantity of any work under the Contract;
- (b) omit any such work;
- (c) change the character or quality or kind of any such work;
- (d) change the levels, lines, positions and dimensions of any part of the Works;

- (e) execute additional work of any kind necessary for the completion of the Works, and no such variation shall in any way vitiate or invalidate the Contract.

2 Variations Increasing Cost of Contract or altering the Works.

The Engineer shall, however, obtain the written approval of the Employer before giving any order for any variations which may result in an increase of the Contract Price or in an essential alteration of the quantity, quality or character of the Works.

3 Orders for Variations to be in Writing

No variations shall be made by the Contractor without an order in writing from the Engineer. Variations requiring the written approval of the Employer under paragraph (2) of this Clause shall be made by the Contractor only upon written order from the Engineer accompanied by a copy of the Employer's approval. Provided that, subject to the provisions of the Contract, no order in writing shall be required for any increase or decrease in the quantity of any work where such increase or decrease is not the result of an order given under this Clause but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities.

4 Valuation of Variations

The Engineer shall estimate to the Employer the amount to be added or deducted from the Contract Price in respect of any variation, addition or omission. In the case of any variation, addition or omission which may result in an increase of the Contract Price, the Engineer shall communicate such estimate to the Employer together with his request for the Employer's written approval of such variation, addition or omission. The value of any variation, addition or omission shall be calculated on the basis of the unit prices contained in the Bill of Quantities.

49 PLANT, TEMPORARY WORKS AND MATERIALS

1 Plant, etc., Exclusive Use for the Works

All Constructional Plant, Temporary Works and Materials provided by the Contractor shall, when brought on the Site, be deemed to be exclusively intended for the construction and completion of the Works and the Contractor shall not remove the same or any part thereof (save for the purpose of moving it from one part of the Site to another) without the consent in writing of the Engineer which shall not be unreasonably withheld.

2 Removal of Plant, etc.

Upon completion of the Works the Contractor shall remove from the Site all the said Constructional Plant and Temporary Works remaining thereon and any unused materials provided by the Contractor.

3 Employer not liable for Damage to Plant

The Employer shall not be at any time liable for the loss of any of the said Constructional plant, Temporary Works or Materials save if such loss results from the act or neglect of the Employer, its employees or agents.

4 Ownership of paid material and work

All material and work covered by payments made by the Employer to the Contractor shall thereupon become the sole property of the Employer, but this provision shall not be construed as relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work or as waiving the right of the Employer to require the fulfillment of all of the terms of the Contract.

5 Equipment and supplies furnished by Employer

Title to any equipment and supplies which may be furnished by the Employer shall rest with the Employer and any such equipment and supplies shall be returned to the Employer at the conclusion of the Contract or when no longer needed by the Contractor. Such equipment when returned to the Employer, shall be in the same condition as when delivered to the Contractor, subject to normal wear and tear.

50 APPROVAL OF MATERIALS ETC., NOT IMPLIED

The operation of Clause 49 hereof shall not be deemed to imply any approval by the Engineer of the materials or other matters referred to therein nor shall it prevent the rejection of any such materials at any time by the Engineer.

51 MEASUREMENT OF WORKS

The Engineer shall, when he requires any part or parts of the Works to be measured, give notice to the Contractor or the Contractor's authorized agent or representative who shall forthwith attend or send a qualified agent to assist the Engineer in making such measurement and shall furnish all particulars required by either of them. Should the Contractor not attend or neglect or omit to send such agent, then the measurement made by the Engineer or approved by him shall be taken to be the correct measurement of the work. The purpose of measuring is to ascertain the volume of work executed by the Contractor and therefore determine the amount of the monthly payments.

52 LIABILITY OF THE PARTIES

- 1 The Works shall not be considered as completed until a Certificate of Final Completion shall have been signed by the Engineer and delivered to the Employer stating that the Works have been completed and that the Contractor has fulfilled all his obligations under Clause 47 to his satisfaction.
- 2 The Employer shall not be liable to the Contractor for any matter arising out of or in connection with the Contract or the execution of the Works unless the Contractor shall have made a claim in writing in respect thereof before the giving of the Certificate of Final Completion and in accordance with the Contract.

3 Unfulfilled Obligations

Notwithstanding the issue of the Certificate of Final Completion, the Contractor shall remain liable for the fulfillment of any obligation incurred under the provisions of the Contract prior to the issuance of the Certificate of Final Completion and which remains unperformed at the time such Certificate is issued. For the purpose of determining the nature and extent of any such obligation the Contract shall be deemed to remain in force between the parties hereto.

4 Contractor Responsible

Notwithstanding any other provisions in the Contract documents, the Contractor shall be totally responsible for and shall bear any and all risks of loss or damage to or failure of the Works or any part thereof for a period of ten years after issuance of the Certificate of Final Completion, provided always that such risks, damage or failure result from acts, defaults and negligence of the Contractor, his agents, employees or workmen and such contractors.

53 AUTHORITIES

- 1 The Employer shall have the right to enter upon the Site and expel the Contractor therefrom without thereby voiding the Contract or releasing the Contractor from any of his obligations or liabilities under the Contract or affecting the rights and powers conferred on the Employer and the Engineer by the Contract in any of the following cases:
 - (a) If the Contractor is declared bankrupt or claims bankruptcy or court protection against his creditors or if the Contractor is a company or member of a company which was dissolved by legal action;
 - (b) If the Contractor makes arrangements with his creditors or agrees to carry out the Contract under an inspection committee of his creditors;
 - (c) If the Contractor withdraws from the Works or assigns the Contract to others in whole or in part without the Employer's prior written approval;
 - (d) If the Contractor fails to commence the Works or shows insufficient progress to the extent which in the opinion of the Engineer will not enable him to meet the target completion date of the Works;

- (e) If the Contractor suspends the progress of the Works without due cause for fifteen (15) days after receiving from the Engineer written notice to proceed;
- (f) If the Contractor fails to comply with any of the Contract conditions or fails to fulfill his obligations and does not remedy the cause of his failure within fifteen (15) days after being notified to do so in writing;
- (g) If the Contractor is not executing the work in accordance with standards of workmanship specified in the Contract;
- (h) If the Contractor gives or promises to give a present or loan or reward to any employee of the Employer or of the Engineer.

Then the Employer may himself complete the Works or may employ any other contractor to complete the Works and the Employer or such other contractor may use for such completion so much of Constructional Plant, Temporary Works and Materials, which have been deemed to be reserved exclusively for the construction and completion of the Works under the provision of the Contract as he or they may think proper and the Employer may at any time sell any of the said Constructional Plant, Temporary Works and unused materials and apply the proceeds of sale in or towards the satisfaction of any sums due or which may become due to him from the Contractor under the Contract.

2 Evaluation after Re-entry

The Engineer shall as soon as may be practicable after any such entry and expulsion by the Employer notify the Contractor to attend the necessary evaluation of the Works. In the event that for any reason the Contractor does not attend such evaluation the Engineer shall undertake the said evaluation in the absence of the Contractor and shall issue a certificate stating the sum, if any, due to the Contractor for work done in accordance with the Contract up to the time of entry and expulsion by the Employer which has been reasonably accumulated to the Contractor in respect of the Works he has executed in such case in accordance with the Contract. The Engineer shall indicate the value of the materials whether unused or partially used and the value of construction equipment and any part of the Temporary Works.

3 Payment After Re-entry

If the Employer shall enter and expel the Contractor under this Clause he shall not be liable to pay the Contractor any money on account of the Contract until the expiration of the Defects Liability Period, and thereafter until the costs of completion and making good any defects of the Works, damages for delay in completion (if any), and all other expenses incurred by the Employer have been ascertained and their amount certified by the Engineer. The Contractor shall then be entitled to receive only such sum or sums (if any) as the Engineer may certify would have been due to him upon due completion by him after deducting the said amount. But if such amount shall exceed the sum which would have been payable to the Contractor on due completion by him, then the Contractor shall upon demand pay to the Employer the amount of such

excess. The Employer in such case may recover this amount from any money due to the Contractor from the Employer without the need to resort to legal procedures.

54 URGENT REPAIRS

If by reason of any accident or failure or other event occurring to, in or in connection with the Works or any part thereof either during the execution of the Works or during the Defects Liability Period any remedial or other work or repair shall in the opinion of the Engineer be urgently necessary for security and the Contractor is unable or unwilling at once to do such work or repair, the Employer may by his own or other workmen do such work or repair as the Engineer may consider necessary. If the work or repair so done by the Employer is work which in the opinion of the Engineer the Contractor was liable to do at his own expense under the Contract, all costs and charges properly incurred by the Employer in so doing shall on demand be paid by the Contractor to the Employer or may be deducted by the Employer from any monies due or which may become due to the Contractor provided always that the Engineer shall as soon after the occurrence of any such emergency as may be reasonably practicable notify the Contractor thereof in writing.

55 INCREASE AND DECREASE OF COSTS

Except if otherwise provided by the Contract, no adjustment of the Contract Price shall be made in respect of fluctuations of market, prices of labour, materials, plant or equipment, neither due to fluctuation in interest rates nor devaluation or any other matters affecting the Works.

56 TAXATION

The Contractor shall be responsible for the payment of all charges and taxes in respect of income including value added tax, all in accordance with and subject to the provisions of the income tax laws and regulations in force and all amendments thereto. It is the Contractor's responsibility to make all the necessary inquiries in this respect and he shall be deemed to have satisfied himself regarding the application of all relevant tax laws.

57 BLASTING

The Contractor shall not use any explosives without the written permission of the Engineer who shall require that the Contractor has complied in full with the regulations in force regarding the use of explosives. However, the Contractor, before applying to obtain these explosives, has to provide well arranged storage facilities. The Engineer's approval or refusal to permit the use of explosives shall not constitute ground for claims by the Contractor.

58 MACHINERY

The Contractor shall be responsible for coordinating the manufacture, delivery, erection and commissioning of plant machinery and equipment which are to form a part of the Works. He shall place all necessary orders as soon as possible after the signing of the Contract. These orders and their acceptance shall be produced to the Engineer on request. The Contractor shall also be responsible for ensuring that all sub-contractors adhere to such programs as are agreed and are needed to ensure completion of the Works within the period for completion. Should any sub-contracted works be delayed, the Contractor shall initiate the necessary action to speed up such completion. This shall not prejudice the Employer's right to exercise his remedies for delay in accordance with the Contract.

59 TEMPORARY WORKS AND REINSTATEMENT

The Contractor shall provide and maintain all temporary roads and tracks necessary for movement of plant and materials and clear same away at completion and make good all works damaged or disturbed. The Contractor shall submit drawings and full particulars of all Temporary Works to the Engineer before commencing same. The Engineer may require modifications to be made if he considers them to be insufficient and the Contractor shall give effect to such modifications but shall not be relieved of his responsibilities. The Contractor shall provide and maintain weather-proof sheds for storage of material pertinent to the Works both for his own use and for the use of the Employer and clear same away at the completion of the Works. The Contractor shall divert as required, at his own cost and subject to the approval of the Engineer, all public utilities encountered during the progress of the Works, except those specially indicated on the drawings as being included in the Contract. Where diversions of services are not required in connection with the Works, the Contractor shall uphold, maintain and keep the same in working order in existing locations. The Contractor shall make good, at his own expense, all damage to telephone, telegraph and electric cable or wires, sewers, water or other pipes and other services, except where the Public Authority or Private Party owning or responsible for the same elects to make good the damage. The costs incurred in so doing shall be paid by the Contractor to the Public Authority or Private Party on demand.

60 PHOTOGRAPHS AND ADVERTISING

The Contractor shall not publish any photographs of the Works or allow the Works to be used in any form of advertising whatsoever without the prior approval in writing from the Employer.

61 PREVENTION OF CORRUPTION

The Employer shall be entitled to cancel the Contract and to recover from the Contractor the amount of any loss resulting from such cancellation, if the Contractor has offered or given any person any gift or consideration of any kind as an inducement or reward for doing or intending to do any action in relation to the obtaining or the execution of the Contract or any other contract with the Employer or for showing or intending to show favour or disfavour to any person in relation to the Contract or any other contract with the Employer, if the like acts shall have been done by any persons employed by him or acting on his behalf whether with or without the knowledge of the Contractor in relation to this or any other Contract with the Employer.

62 DATE FALLING ON HOLIDAY

Where under the terms of the Contract any act is to be done or any period is to expire upon a certain day and that day or that period fall on a day of rest or recognized holiday, the Contract shall have effect as if the act were to be done or the period to expire upon the working day following such day.

63 NOTICES

- 1** Unless otherwise expressly specified, any notice, consent, approval, certificate or determination by any person for which provision is made in the Contract Documents shall be in writing. Any such notice, consent, approval, certificate or determination to be given or made by the Employer, the Contractor or the Engineer shall not be
- 2** unreasonably withheld or delayed.
- 3** Any notice, certificate or instruction to be given to the Contractor by the Engineer or the Employer under the terms of the Contract shall be sent by post, cable, telex or facsimile at the Contractor's principal place of business specified in the Contract or such other address as the Contractor shall nominate in writing for that purpose, or by
- 4** delivering the same at the said address against an authorized signature certifying the receipt.
- 5** Any notice to be given to the Employer under the terms of the Contract shall be sent by post, cable, telex or facsimile at the Employer's address specified in the Contract, or by delivering the same at the said address against an authorized signature certifying the receipt.
- 6** Any notice to be given to the Engineer under the terms of this Contract shall be sent by post, cable, telex or facsimile at the Engineer's address specified in the Contract, or by delivering the same at the said address against an authorized signature certifying the receipt.

64 LANGUAGE, WEIGHTS AND MEASURES

Except as may be otherwise specified in the Contract, English shall be used by the Contractor in all written communications to the Employer or the Engineer with respect to the services to be rendered and with respect to all documents procured or prepared by the Contractor pertaining to the Works. The metric system of weights and measures shall be used in all instances.

65 RECORDS, ACCOUNTS, INFORMATION AND AUDIT

The Contractor shall maintain accurate and systematic records and accounts in respect of the work performed under this Contract.

The Contractor shall furnish, compile or make available at all times to the UNCDF any records or information, oral or written, which the UNCDF may reasonably request in respect of the Works or the Contractor's performance thereof.

The Contractor shall allow the UNCDF or its authorized agents to inspect and audit such records or information upon reasonable notice.

66 FORCE MAJEURE

Force majeure as used herein means Acts of God, war (whether declared or not), invasion, revolution, insurrection or other acts or events of a similar nature or force.

In the event of and as soon as possible after the occurrence of any cause constituting force majeure, the Contractor shall give notice and full particulars in writing to the UNCDF and to the Engineer of such force majeure if the Contractor is thereby rendered unable, wholly or in part, to perform its obligations and meet its responsibilities under this Contract. Subject to acceptance by the UNCDF of the existence of such force majeure, which acceptance shall not be unreasonably withheld, the following provisions shall apply:

- (a) The obligations and responsibilities of the Contractor under this Contract shall be suspended to the extent of his inability to perform them and for as long as such inability continues. During such suspension and in respect of work suspended, the Contractor shall be reimbursed by the UNCDF substantiated costs of maintenance of the Contractor's equipment and of per diem of the Contractor's permanent personnel rendered idle by such suspension;
- (b) The Contractor shall within fifteen (15) days of the notice to the UNCDF of the occurrence of the force majeure submit a statement to the UNCDF of estimated costs referred to in subparagraph (a) above during the period of suspension followed by a complete statement of actual expenditures within thirty (30) days after the end of the
- (c) suspension;
- (d) The term of this Contract shall be extended for a period equal to the period of suspension taking however into account any special condition which may cause the additional time for completion of the Works to be different from the period of suspension;
- (e) If the Contractor is rendered permanently unable, wholly or in part, by reason of force majeure, to perform his obligations and meet his responsibilities under the Contract, the UNCDF shall have the right to terminate the Contract on the same terms and conditions as provided for in Clause 68 of these General Conditions, except that the period of notice shall be seven (7) days instead of fourteen (14) days, and

- (f) For the purpose of the preceding sub-paragraph, the UNCDF may consider the Contractor permanently unable to perform in case of any suspension period of more than ninety (90) days.

67 SUSPENSION BY THE UNCDF

The UNCDF may by written notice to the Contractor suspend for a specified period, in whole or in part, payments to the Contractor and/or the Contractor's obligation to continue to perform the Works under this Contract, if in the UNCDF' sole discretion:

- (a) any conditions arise which interfere, or threaten to interfere with the successful execution of the Works or the accomplishment of the purpose thereof, or
- (b) the Contractor shall have failed, in whole or in part, to perform any of the terms and conditions of this Contract.

After suspension under sub-paragraph (a) above, the Contractor shall be entitled to reimbursement by the UNCDF of such costs as shall have been duly incurred in accordance with this Contract prior to the commencement of the period of such suspension.

The term of this Contract may be extended by the UNCDF for a period equal to any period of suspension, taking into account any special conditions which may cause the additional time for completion of the Works to be different from the period of suspension.

68 TERMINATION BY THE UNCDF

The UNCDF may, notwithstanding any suspension under Clause 67 above, terminate this Contract for cause or convenience in the interest of the UNCDF upon not less than fourteen (14) days written notice to the Contractor.

Upon termination of this Contract:

- (a) The Contractor shall take immediate steps to terminate his performance of the Contract in a prompt and orderly manner and to reduce losses and to keep further expenditures to a minimum, and
- (b) The Contractor shall be entitled (unless such termination has been occasioned by the Contractor's breach of this Contract), to be paid for the part of the Works satisfactorily completed and for the materials and equipment properly delivered to the Site as of the date of termination for incorporation to the Works, plus substantiated costs resulting from commitments entered into prior to the date of termination as well as any reasonable substantiated direct costs incurred by the Contractor as a result of the termination, but shall not be entitled to receive any other or further payment or damages.

69 TERMINATION BY THE CONTRACTOR

In the case of any alleged breach by the UNCDF of the Contract or in any other situation which the Contractor reasonably considers to entitle him to terminate his performance of the Contract, the Contractor shall promptly give written notice to the UNCDF detailing the nature and the circumstances of the breach or other situation. Upon acknowledgement in writing by the UNCDF of the existence of such breach and the UNCDF' inability to remedy it, or upon failure of the UNCDF to respond to such notice within twenty (20) days of receipt thereof, the Contractor shall be entitled to terminate this Contract by giving 30 days written notice thereof. In the event of disagreement between the Parties as to the existence of such breach or other situation referred to above, the matter shall be resolved in accordance with Clause 71 of these General Conditions.

Upon termination of this Contract under this Clause the provisions of sub-paragraph (b) of Clause 68 hereof shall apply.

70 RIGHTS AND REMEDIES OF THE UNCDF

Nothing in or relating to this Contract shall be deemed to prejudice or constitute a waiver of any other rights or remedies of the UNCDF.

The UNCDF shall not be liable for any consequences of, or claim based upon, any act or omission on the part of the Government.

71 SETTLEMENT OF DISPUTES

In the case of any claim, controversy or dispute arising out of, or in connection with this Contract or any breach thereof, the following procedure for resolution of such claim, controversy or dispute shall apply.

1 Notification

The aggrieved party shall immediately notify the other party in writing of the nature of the alleged claim, controversy or dispute, not later than seven (7) days from awareness of the existence thereof.

2 Consultation

On receipt of the notification provided above, the representatives of the Parties shall start consultations with a view to reaching an amicable resolution of the claim, controversy or dispute without causing interruption of the Works.

3 Conciliation

Where the representatives of the Parties are unable to reach such an amicable settlement, either party may request the submission of the matter to conciliation in accordance with the UNCITRAL Rules of Conciliation then obtaining.

4 Arbitration

Any claim, controversy or dispute which is not settled as provided under clauses 71.1 through 3 above shall be referred to arbitration in accordance with the UNCITRAL Arbitration Rules then obtaining. The Parties shall be bound by the arbitration award rendered in accordance with such arbitration as the final adjudication of any such controversy or claim.

72 PRIVILEGES AND IMMUNITIES

Nothing in or relating to this Contract shall be deemed a waiver of any of the privileges and immunities of the United Nations of which the UNCDF is an integral part.

73 SECURITY

The Contractor shall:

- (a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the services are being provided;
- (b) assume all risks and liabilities related to the Contractor's security, and the full implementation of the security plan.

UNCDF reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this contract. Notwithstanding the foregoing, the Contractor shall remain solely responsible for the security of its personnel and for UNCDF's property in its custody as set forth in paragraph 4.1 above.

74 AUDIT AND INVESTIGATIONS

Each invoice paid by UNCDF shall be subject to a post-payment audit by auditors, whether internal or external, of UNCDF or the authorized agents of the UNCDF at any time during the term of the Contract and for a period of three (3) years following the expiration or prior termination of the Contract. The UNCDF shall be entitled to a refund from the Contractor for any amounts shown by such audits to have been paid by the UNCDF other than in accordance with the terms and conditions of the Contract. Should the audit determine that any funds paid by UNCDF have not been used as per contract clauses, the company shall reimburse such funds forthwith. Where the company fails to reimburse such funds, UNCDF reserves the right to seek recovery and/or to take any other action as it deems necessary.

The Contractor acknowledges and agrees that, at anytime, UNCDF may conduct investigations relating to any aspect of the Contract, the obligations performed under the Contract, and the operations of the Contractor generally. The right of UNCDF to conduct an investigation and the Contractor's obligation to comply with such an investigation shall not

lapse upon expiration or prior termination of the Contract. The Contractor shall provide its full and timely cooperation with any such inspections, post-payment audits or investigations. Such cooperation shall include, but shall not be limited to, the Contractor's obligation to make available its personnel and any documentation for such purposes and to grant to UNCDF access to the Contractor's premises. The Contractor shall require its agents, including, but not limited to, the Contractor's attorneys, accountants or other advisers, to reasonably cooperate with any inspections, post-payment audits or investigations carried out by UNCDF hereunder.

75 ANTI-TERRORISM

The Contractor agrees to undertake all reasonable efforts to ensure that none of the UNCDF funds received under this Contract are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNCDF hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Contract.

APPENDIX I: FORMAT OF PERFORMANCE SECURITY

2. PERFORMANCE BANK GUARANTEE

To:.....

[INSERT FULL NAME AND ADDRESS OF RR or BUREAU/DIVISION
DIRECTOR AT UNCDF]

WHEREAS.....[INSERT NAME AND
ADDRESS OF THE CONTRACTOR] (hereinafter called "the Contractor") has undertaken, in
pursuance of Contract No....., dated....., to
execute.....[INSERT TITLE OF CONTRACT AND
BRIEF DESCRIPTION OF WORKS], (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall
furnish you with a Bank Guarantee by a recognized Bank for the sum specified therein as security
for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby irrevocably affirm that we are the Guarantor and responsible to
you, on behalf of the Contractor, up to a total of.....[INSERT AMOUNT
OF GUARANTEE IN FIGURES AND IN WORDS], such sum being payable in the types and
proportions of currencies in which the Contract Price is payable, and we undertake to pay you,
upon your first written demand and without cavil or argument, any sum or sums within the limits
of[INSERT AMOUNT OF GUARANTEE] as aforesaid without your
needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before
presenting us with the demand.

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

This guarantee shall be valid until twenty eight calendar days after issuance of the Certificate of
Final Completion.

SIGNATURE AND SEAL OF THE GUARANTOR

.....

NAME OF BANK

ADDRESS

DATE.....

Section 6: Returnable Bidding Forms / Checklist

This form serves as a checklist for preparation of your Proposal. Please complete the Returnable Bidding Forms in accordance with the instructions in the forms and return them as part of your Proposal submission. No alteration to format of forms shall be permitted and no substitution shall be accepted.

Before submitting your Proposal, please ensure compliance with the Proposal Submission instructions of the BDS 22.

Technical Proposal Envelope:

Have you duly completed all the Returnable Bidding Forms?	
▪ Form A: Technical Proposal Submission Form	☒
▪ Form B: Bidder Information Form	☒
▪ Form C: Joint Venture/Consortium/ Association Information Form	☒
▪ Form D: Qualification Form	☒
▪ Form E: Format of Technical Proposal	☒
▪ Form H: Proposal Security Form	☒
Have you provided the required documents to establish compliance with the evaluation criteria in Section 4?	☒

Financial Proposal Envelope

(Must be submitted in a separate sealed envelope/password protected email)

▪ Form F: Financial Proposal Submission Form	☒
▪ Form G: Financial Proposal Form	☒

Form A: Technical Proposal Submission Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
RFP reference:	[Insert RFP Reference Number]		

We, the undersigned, offer to provide the services for [Insert Title of services] in accordance with your Request for Proposal No. [Insert RFP Reference Number] and our Proposal. We are hereby submitting our Proposal, which includes this Technical Proposal and our Financial Proposal sealed under a separate envelope.

We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/Consortium /Association members or subcontractors or suppliers for any part of the contract:

- a) is not under procurement prohibition by the United Nations, including but not limited to prohibitions derived from the Compendium of United Nations Security Council Sanctions Lists;
- b) have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization;
- c) have no conflict of interest in accordance with Instruction to Bidders Clause 4;
- d) do not employ, or anticipate employing, any person(s) who is, or has been a UN staff member within the last year, if said UN staff member has or had prior professional dealings with our firm in his/her capacity as UN staff member within the last three years of service with the UN (in accordance with UN post-employment restrictions published in ST/SGB/2006/15);
- e) have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against them that could impair their operations in the foreseeable future;
- f) undertake not to engage in proscribed practices, including but not limited to corruption, fraud, coercion, collusion, obstruction, or any other unethical practice, with the UN or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the UN and we embrace the principles of the United Nations Supplier Code of Conduct and adhere to the principles of the United Nations Global Compact.

We declare that all the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification and/or sanctioning by the UNCDF.

We offer to provide services in conformity with the Bidding documents, including the UNCDF General Conditions of Contract and in accordance with the Terms of Reference

Our Proposal shall be valid and remain binding upon us for the period of time specified in the Bid Data Sheet.

We understand and recognize that you are not bound to accept any Proposal you receive.

I, the undersigned, certify that I am duly authorized by [Insert Name of Bidder] to sign this Proposal and bind it should UNCDF accept this Proposal.

Name: _____

Title: _____

Date: _____

Signature: _____

[Stamp with official stamp of the Bidder]

Form B: Bidder Information Form

Legal name of Bidder	[Complete]
Legal address	[Complete]
Year of registration	[Complete]
Bidder's Authorized Representative Information	Name and Title: [Complete] Telephone numbers: [Complete] Email: [Complete]
Are you a UNGM registered vendor?	☐ Yes ☐ No If yes, [insert UGNM vendor number]
Are you a UNCDF vendor?	☐ Yes ☐ No If yes, [insert UNCDF vendor number]
Countries of operation	[Complete]
No. of full-time employees	[Complete]
Quality Assurance Certification (e.g. ISO 9000 or Equivalent) (If yes, provide a Copy of the valid Certificate):	[Complete]
Does your Company hold any accreditation such as ISO 14001 related to the environment? (If yes, provide a Copy of the valid Certificate):	[Complete]
Does your Company have a written Statement of its Environmental Policy? (If yes, provide a Copy)	[Complete]
Contact person UNCDF may contact for requests for clarification during Proposal evaluation	Name and Title: [Complete] Telephone numbers: [Complete] Email: [Complete]
Please attach the following documents:	▪ Company Profile, which should <u>not</u> exceed fifteen (15) pages, including printed brochures and product catalogues relevant to the goods/services being procured ▪ Certificate of Incorporation/ Business Registration ▪ Tax Registration/Payment Certificate issued by the Internal Revenue Authority evidencing that the Bidder is updated with its tax payment obligations, or Certificate of Tax exemption, if any such privilege is enjoyed by the Bidder ▪ Trade name registration papers, if applicable ▪ Local Government permit to locate and operate in assignment location, if applicable ▪ Official Letter of Appointment as local representative, if Bidder is submitting a Bid in behalf of an entity located outside the country ▪ Power of Attorney

Form C: Joint Venture/Consortium/Association Information Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
RFP reference:	[Insert RFP Reference Number]		

To be completed and returned with your Proposal if the Proposal is submitted as a Joint Venture/Consortium/Association.

No	Name of Partner and contact information (address, telephone numbers, fax numbers, e-mail address)	Proposed proportion of responsibilities (in %) and type of services to be performed
1	[Complete]	[Complete]
2	[Complete]	[Complete]
3	[Complete]	[Complete]

Name of leading partner (with authority to bind the JV, Consortium, Association during the RFP process and, in the event a Contract is awarded, during contract execution)	[Complete]
--	------------

We have attached a copy of the below document signed by every partner, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture:

☐ Letter of intent to form a joint venture **OR** ☐ JV/Consortium/Association agreement

We hereby confirm that if the contract is awarded, all parties of the Joint Venture/Consortium/Association shall be jointly and severally liable to UNCDF for the fulfillment of the provisions of the Contract.

Name of partner: _____ Name of partner: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

Name of partner: _____ Name of partner: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

Form D: Qualification Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
RFP reference:	[Insert RFP Reference Number]		

If JV/Consortium/Association, to be completed by each partner.

Historical Contract Non-Performance

☐ Contract non-performance did not occur for the last 3 years			
☐ Contract(s) not performed for the last 3 years			
Year	Non- performed portion of contract	Contract Identification	Total Contract Amount (current value in US\$)
		Name of Client: Address of Client: Reason(s) for non-performance:	

Litigation History (including pending litigation)

☐ No litigation history for the last 3 years			
☐ Litigation History as indicated below			
Year of dispute	Amount in dispute (in US\$)	Contract Identification	Total Contract Amount (current value in US\$)
		Name of Client: Address of Client: Matter in dispute: Party who initiated the dispute: Status of dispute: Party awarded if resolved:	

Previous Relevant Experience

Please list only previous similar assignments successfully completed in the last 10 years.

List only those assignments for which the Bidder was legally contracted or sub-contracted by the Client as a company or was one of the Consortium/JV partners. Assignments completed by the Bidder's individual experts working privately or through other firms cannot be claimed as the relevant experience of the Bidder, or that of the Bidder's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Bidder should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by UNCDF. satisfactory reference from the client shall be provided for each listed project.

Project name & Country of Assignment	Client & Reference Contact Details	Contract Value	Period of activity and status	Types of activities undertaken

--	--	--	--	--

Bidders may also attach their own Project Data Sheets with more details for assignments above.

- ☐ Attached are the Statements of Satisfactory Performance from the Top 3 (three) Clients or more.

Financial Standing

Annual Turnover for the last 3 years	Year	USD
	Year	USD
	Year	USD
Latest Credit Rating (if any), indicate the source		

Financial information (in US\$ equivalent)	Historic information for the last 3 years		
	Year 1	Year 2	Year 3
	<i>Information from Balance Sheet</i>		
Total Assets (TA)			
Total Liabilities (TL)			
Current Assets (CA)			
Current Liabilities (CL)			
	<i>Information from Income Statement</i>		
Total / Gross Revenue (TR)			
Profits Before Taxes (PBT)			
Net Profit			
Current Ratio			

- ☐ Attached are copies of the audited financial statements (balance sheets, including all related notes, and income statements) for the years required above complying with the following condition:
- Must reflect the financial situation of the Bidder or party to a JV, and not sister or parent companies;
 - Historic financial statements must be audited by a certified public accountant;
 - Historic financial statements must correspond to accounting periods already completed and audited. No statements for partial periods shall be accepted.

Form E: Format of Technical Proposal

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
RFP reference:	[Insert RFP Reference Number]		

The Bidder's proposal should be organized to follow this format of Technical Proposal. Where the bidder is presented with a requirement or asked to use a specific approach, the bidder must not only state its acceptance, but also describe how it intends to comply with the requirements. Where a descriptive response is requested, failure to provide the same will be viewed as non-responsive.

SECTION 1: Bidder's qualification, capacity and expertise

- 1.1 Brief description of the organization, including the year and country of incorporation, and types of activities undertaken.
- 1.2 General organizational capability which is likely to affect implementation: management structure, financial stability and project financing capacity, project management controls, extent to which any work would be subcontracted (if so, provide details).
- 1.3 Relevance of specialized knowledge and experience on similar engagements done in the region/country.
- 1.4 Quality assurance procedures and risk mitigation measures.
- 1.5 Organization's commitment to sustainability.

SECTION 2: Proposed Methodology, Approach and Implementation Plan

This section should demonstrate the bidder's responsiveness to the TOR by identifying the specific components proposed, addressing the requirements, providing a detailed description of the essential performance characteristics proposed and demonstrating how the proposed approach and methodology meets or exceeds the requirements. All important aspects should be addressed in sufficient detail and different components of the project should be adequately weighted relative to one another.

- 2.1 A detailed description of the approach and methodology for how the Bidder will achieve the Terms of Reference of the project, keeping in mind the appropriateness to local conditions and project environment. Details how the different service elements shall be organized, controlled and delivered.
- 2.2 The methodology shall also include details of the Bidder's internal technical and quality assurance review mechanisms.
- 2.3 Explain whether any work would be subcontracted, to whom, how much percentage of the work, the rationale for such, and the roles of the proposed sub-contractors and how everyone will function as a team.
- 2.4 Description of available performance monitoring and evaluation mechanisms and tools; how they shall be adopted and used for a specific requirement.
- 2.5 Implementation plan including a Gantt Chart or Project Schedule indicating the detailed sequence of activities that will be undertaken and their corresponding timing.
- 2.6 Demonstrate how you plan to integrate sustainability measures in the execution of the contract.
- 2.7 Any other comments or information regarding the project approach and methodology that will be adopted.

SECTION 2A: Bidder's Comments and Suggestions on the Terms of Reference

Provide comments and suggestions on the Terms of Reference, or additional services that will be rendered beyond the requirements of the TOR, if any.

SECTION 3: Management Structure, Key Personnel, and material resources

- 3.1 Describe the overall management approach toward planning and implementing the project. Include an organization chart for the management of the project describing the relationship of key positions and designations. Provide a spreadsheet to show the activities of each personnel and the time allocated for his/her involvement.
- 3.2 Provide CVs for key personnel that will be provided to support the implementation of this project using the format below. CVs should demonstrate qualifications in areas relevant to the Scope of Services.
- 3.3 Material resources and equipment shall be listed with explanation of their characteristics (brand, manufacturing date) in the technical proposal (drillers, engines, vehicles, toolboxes, and others) with all the necessary proofs of authorizations/approval to operate.

Format for CV of Proposed Key Personnel

Name of Personnel	[Insert]
Position for this assignment	[Insert]
Nationality	[Insert]
Language proficiency	[Insert]
Education/ Qualifications	<i>[Summarize college/university and other specialized education of personnel member, giving names of schools, dates attended, and degrees/qualifications obtained.]</i>
	[Insert]
Professional certifications	<i>[Provide details of professional certifications relevant to the scope of services]</i>
	▪ Name of institution: [Insert] ▪ Date of certification: [Insert]
Employment Record/ Experience	<i>[List all positions held by personnel (starting with present position, list in reverse order), giving dates, names of employing organization, title of position held and location of employment. For experience in last five years, detail the type of activities performed, degree of responsibilities, location of assignments and any other information or professional experience considered pertinent for this assignment.]</i>
	[Insert]
References	<i>[Provide names, addresses, phone and email contact information for two (2) references]</i>
	Reference 1: [Insert] Reference 2: [Insert]

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualifications, my experiences, and other relevant information about myself.

Signature of Personnel

Date (Day/Month/Year)

Format for material resources /equipment/engine/other that will be mobilized for this project

Material resources /equipment/engine/other	[Insert]
Usefulness for this assignment	[Insert]
Brand	[Insert]
Authorization/ to operate (number/reference)	[Insert]
Purchase/acquisition date	[Insert]
Purchase/acquisition value	
List of attached proofs/documentation	[Insert]

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe the material resources /equipment/engine/other aimed to be mobilized for this project

Signature

Date (Day/Month/Year)

Form F: Financial Proposal Submission Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
RFP reference:	[Insert RFP Reference Number]		

We, the undersigned, offer to provide the services for [Insert Title of services] in accordance with your Request for Proposal No. [Insert RFP Reference Number] and our Proposal. We are hereby submitting our Proposal, which includes this Technical Proposal and our Financial Proposal sealed under a separate envelope.

Our attached Financial Proposal is for the sum of [Insert amount in words and figures].

Our Proposal shall be valid and remain binding upon us for the period of time specified in the Bid Data Sheet.

We understand you are not bound to accept any Proposal you receive.

Name: _____
Title: _____
Date: _____
Signature: _____

[Stamp with official stamp of the Bidder]

Form G: Financial Proposal Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
RFP reference:	[Insert RFP Reference Number]		

The Bidder is required to prepare the Financial Proposal following the below format and submit it in an envelope separate from the Technical Proposal as indicated in the Instruction to Bidders. Any Financial information provided in the Technical Proposal shall lead to Bidder's disqualification. The Financial Proposal should align with the requirements in the Terms of Reference and the Bidder's Technical Proposal.

Currency of the proposal: USD

Bill of quantities for the construction of 65 water kiosks

Item No	Description	Qty	Unit	Rate US\$ in figures	Amount US\$ in figures
1	Chain link fence with entrance gate				
	Site clearing				
a	Clearing the whole site of unwanted materials remove debris from site <i>Rate US\$ in words:.....</i>	65	item		
b	Selected hardcore (ball stones) materials obtained off site to make up levels under floors. 225mm thick average, wall rammed and levelled to an even surface <i>Rate US\$ in words:.....</i>	2465	m ²		
c	Make up level under floor (item specific to alternative 2) <i>Rate US\$ in words:.....</i>	176	m ³		

d	Plain in-site concrete 1:3:6-37mm aggregated as floor slab 150mm thick <i>Rate US\$ in words:</i>	368	m³		
e	Excavating, starting at site strip level, maximum depth not exceeding 300mm trenches to receive concrete in chain link fence foundation <i>Rate US\$ in words:</i>	86	m³		
f	Excavating, starting at site strip level, maximum depth not exceeding 1m (item specific to alternative 2) trenches to receive concrete in chain link fence foundation <i>Rate US\$ in words:</i>	528	m³		
g	pits (17Nr) to receive columns bases in foundation <i>Rate US\$ in words:</i>	67.4	m³		
h	Excavating rocks in trenches and pits : laterite rocks (PROVISIONAL) .. <i>Rate US\$ in words:</i>	67.4	m³		
i	Excavating rocks in trenches and pits: gabbro rocks (PROVISIONAL) .. <i>Rate US\$ in words:</i>	56.4	m³		
j	Dispose of surplus excavated materials <i>Rate US\$ in words:</i>	144.4	m³		
	Concrete work in Chain link Fence Foundations				
k	Reinforced in-situ concrete (1:2:4-19mm aggregate) in galvanized pipe base <i>Rate US\$ in words:</i>	22.36	m³		
l	Plain in-situ concrete (1:3"6-37mm aggregate), as footing in trenches, 225mm thick (average) <i>Rate US\$ in words:</i>	182.1	m³		
m	75mm diameter galvanized pipe as columns fixed at 1.5m center and 3m height <i>Rate US\$ in words:</i>	1127	Nr		
	Chain link fencing fixed to 75mm diameter galvanized pipe maximum height				

n	not exceeding 2.7m including gates <i>Rate US\$ in words:</i>	..	4615	m ²	
	Total Chain link fence with entrance gate				
2	<u>Water tank base and support</u>				
	Concrete work				
a	Reinforced in-situ concrete (1:2:4-19mm aggregate) in column bases and columns <i>Rate US\$ in words:</i>		50.58	m ³	
b	Reinforced in-situ concrete (1:2:4-19mm aggregate) in beams <i>Rate US\$ in words:</i>		27.7	m ³	
c	Reinforced in-situ concrete (1:2:4-19mm aggregate) in slab <i>Rate US\$ in words:</i>		65	m ³	
d	Reinforced in-situ concrete (1:2:4-19mm aggregate) in retaining walls (item specific to alternative 2) <i>Rate US\$ in words:</i>		9	m ³	
e	Concrete in Perimeter Well (Provisional) (item specific to alternative 3 and alternative 4) : Reinforced in-situ concrete (1:2:4 19mm aggregate) in Perimeter Well minimum height not exceeding 1.2m <i>Rate US\$ in words:</i>		44	m ²	
f	Plain mild steel bar reinforcement, BS 4449, in Straight and bent bars, in column base and columns, 12mm diameter <i>Rate US\$ in words:</i>		2289	kg	
g	Links and stirrups, in columns, 6mm diameter <i>Rate US\$ in words:</i>		306	kg	
h	Straight and bent bars, in 12mm diameter in slab <i>Rate US\$ in words:</i>		3980	kg	
	Formwork to sides/soffit,				
i	columns		260	m ²	

	<i>Rate US\$ in words:</i>				
j	Slab	650	m ²		
	<i>Rate US\$ in words:</i>				
k	Formwork to sides, of retaining walls (item specific to alternative 2)	638	m ²		
	<i>Rate US\$ in words:</i>				
l	Formwork to perimeter wells (item specific to alternative 3 and alternative 4): Formwork to sides of Perimeter Wells	638	m ²		
	<i>Rate US\$ in words:</i>				
m	Mild steel bar reinforcement, BS 4449 (item specific to alternative 3 and alternative 4): straight and bent bars, 16mm diameter, in Perimeter Well	3388	kg		
	<i>Rate US\$ in words:</i>				
n	Mild steel bar reinforcement, BS 4449 (item specific to alternative 3 and alternative 4): 12mm diameter, in Perimeter Well	2156	kg		
	<i>Rate US\$ in words:</i>				
o	Finishing in Perimeter Wells (item specific to alternative 3 and alternative 4): Cement and Sand (1:3) rendered, Smooth with Troweled finish to Perimeter concrete wells surfaces, 25mm thick	616	m ²		
	<i>Rate US\$ in words:</i>				
p	75mm diameter galvanized pipe as columns fixed at 2.7m center and 3.6m height	2394	m		
	<i>Rate US\$ in words:</i>				
q	galvanized roofing truss with 75x50mm hollow section. Sloping not exceeding 15 degree from the horizontal with 25x25mm braces and clips to receive purlin 2.7m long x 0.6m high anchor on galvanize pipes	130	Nr		
	<i>Rate US\$ in words:</i>				
r	Painting in Perimeter Wells: Prepared and apply 2 coats of quality emulsion paint to Perimeter Wells	308	m ²		
	<i>Rate US\$ in words:</i>				
s	28 ganged corrugated iron roofing sheets 2.4m long fix by nailing in to roof frame	803	m ²		

	Rate US\$ in words:.....				
t	Sawn seasoned and well treated with wood preservative hardwood timber as roof frame	2583	m		
	Rate US\$ in words:.....				
	Total water tank base and support				
3	Metal kiosk				
a	Provide and install metal kiosk fabricated off site 1650mm wide x 2400mm high with provision for doors and openings for supply and distribution pipes, priming with anti-oxide paint including all installation accessories (for alternatives 1,3,4,5)	43	Item		
	Rate US\$ in words:.....				
b	galvanized roofing truss with 75x50mm hollow section. Sloping not exceeding 15 degrees from the horizontal with 25x25mm braces and clips to receive purlin 1.65m long x 0.6m high anchor on galvanize pipes (for alternatives 1,3,4,5)	86	Nr		
	Rate US\$ in words:.....				
c	Provide and install drainage metal grill cover (for alternatives 1,3,4,5)	43	Item		
	Rate US\$ in words:.....				
d	28 ganged corrugated iron roofing sheets 2.4m long fix by nailing in to roof frame (for alternatives 1,3,4,5)	344	m²		
	Rate US\$ in words:.....				
e	75mm x 50mm hollow section pipe fixed as column fix at 1m center and 2.4m high (for alternatives 2)	176	Nr		
	Rate US\$ in words:.....				
f	75mm x 50mm hollow section pipe as horizontal member 2.4m center to center (for alternatives 2)	660	m		
	Rate US\$ in words:.....				

g	Doors for metal kiosks (for alternative 2): standard section steel plate door completed with frames hinges and 3-turn metal lock and 150mm tower bolt overall size 705mm wide x 2000mm high. <i>Rate US\$ in words:</i>	316. 8	m ²		
h	Roofing for metal kiosk (for alternative 2) : standard section steel plate door completed with frames hinges and 3-turn metal lock and 150mm tower bolt overall size 705mm wide x 2000mm high <i>Rate US\$ in words:</i>	44	Nr		
i	Roofing for metal kiosk (for alternative 2) : 75mm x 25mm hollow section pipe as horizontal member <i>Rate US\$ in words:</i>	220	Nr		
j	Roofing for metal kiosk (for alternative 2) :28 ganged corrugated iron roofing sheets 2.44m long fix by nailing n to roof frame <i>Rate US\$ in words:</i>	311. 3	m ²		
	Woodwork				
k	Sawn seasoned and well treated with wood preservative hardwood timber as roof frame <i>Rate US\$ in words:</i>	2490	m		
l	Wooden wall stud partitioning at 600mm centers using 50mm x 75mm wall wall framing; height 2100mm and 50mm thick. Overall thickness thickness 99mm (for alternatives 3,4,5) <i>Rate US\$ in words:</i>	1116	m		
m	50 x100mm members of stud partition (for alternative 2) <i>Rate US\$ in words:</i>	176	m		
n	50 x 75mm members of stud partition (for alternative 2) <i>Rate US\$ in words:</i>	110	m		
i	17 mm Plywood fix to store partition (for alternative 2) <i>Rate US\$ in words:</i>	110	m ²		
o	12mm thick hardboard fixed to faces of internal walls to 2100mm high <i>Rate US\$ in words:</i>	154	m ²		
p	Supply, install and test all pipe work connections to 5,000 liter water tank	43	Item		

	Rate US\$ in words:.....				
	Painting				
q	Prepare and apply three coats quality oil paint to kiosks Internally and externally including doors	1379	m ²		
	Rate US\$ in words:.....				
	Total metal kiosk				
4	Hand dug water well, borehole and spring water improvement				
a	Excavate from natural ground levels to improve spring water to required depth not exceeding 13' -0" layers in any type of soil. The rate includes keeping excavations free of water, upholding sides of excavation as required, load, haul off the excess excavated materials to an authorized dump site. The contractor is responsible for locating a dump site (for alternative 1)	12	Item		
	Rate US\$ in words:.....				
b	Concrete Works shall include all formwork and shuttering in any form, shape and supplying, casting, vibrating and curing of concrete in both slab and casement lining including reinforcement, and man hole metal cover 600mm x 600mm with handle and locking device (for alternative 1)	12	Item		
	Rate US\$ in words:.....				
c	Cleaning of existing well and shape walls to received concrete linings Depth of existing well not exceeding 10m (for alternative 2)	22	L/Su m		
	Rate US\$ in words:.....				
d	Reinforce in-site concrete (1:2:4) 19mm aggregate in well 10mm deep by 1.6 diameter and 20mm thick, include 6mm diameter main bars and stirrups is applied in 1m height (for alternative 2)	22	Nr		
	Rate US\$ in words:.....				
e	Reinforce concrete cover 1.6m diameter, 150mm thick, include 12mm reinforcement at 150mm centers (for alternative 2)		Item		

	<i>Rate US\$ in words:</i>				
f	Metal cover, in well 600mm x 600mm as shown in drawing (for alternative 2)	22	Nr		
	<i>Rate US\$ in words:</i>				
g	Demolish concrete /blockwork round perimeter of well, provide and build new as per drawing (for alternatives 3,4,and 5)	31	L/Su m		
	<i>Rate US\$ in words:</i>				
h	Examined existing well remove submersible pump and store as directed check water level and report on condition (for alternatives 3,4, and 5)	31	Nr		
	<i>Rate US\$ in words:</i>				
i	Reinforce concrete cover 1.6m diameter, 150mm thick, include 12mm reinforcement at 150mm centers (for alternatives 3,4, and 5)	31	Item		
	<i>Rate US\$ in words:</i>				
j	Metal cover, in well 600mm x 600mm as shown in drawing (for alternatives 3,4, and 5)	31	Nr		
	<i>Rate US\$ in words:</i>				
	Total Hand dug water well, borehole and spring water improvement Mechanical services installation - cold water supply and distribution network				
5	Mechanical services installation : cold water supply and distribution network				
a	Raw Cold Water Storage Tanks:				
(i)	Supply and install 5m ³ MDPE Raw Water Storage Tanks complete with all connection joints, ball valves, gate valves and all necessary materials and accessories to complete the installation and including the following highlights: - To provide a fully self-draining outlet design on MDPE tank - Provision for supply inlet on the wall of the tank <i>Rate US\$ in words:</i>	65	Nr		

(ii)	Supply and install low level water Float switches in the 5m ³ MDPE Raw Water Holding Tank to operate the Raw Water Pump to refill the system and minimize running times to reduce power consumption. <i>Rate US\$ in words:.....</i>	65	Nr		
b	Purified Delivery Water Storage Tank:Supply and install 3m ³ MDPE Raw Water Storage Tanks complete with all connection joints, ball valves, gate valves and all necessary materials and accessories to complete the installation and including the following highlights: - To provide a fully self-draining outlet design on MDPE tank - Provision for supply inlet on the wall of the tank <i>Rate US\$ in words:.....</i>	65	Nr		
c	Fixed speed submersible pressure boosting pumps:supply and install 1.5kW 1x230V 50Hz fixed speed submersible pressure boosting submersible pressure boosting sump pump set for civil use in Water Wells with automatic operation pump, with suction and delivery manifolds, gate and non-return valves, pressure switches, pressure gauge, and control panel complete with all necessary materials and accessories to complete the installation.N.B.: pums and motors characteristics are not expected to be the same for each water kiosk: they should be tailored to water points <i>Rate US\$ in words:.....</i>	65	Nr		
d	Pre-treatment Filters: supply and install a 5-micron (nominal) sediment filter to be positioned and installed before the UV System and after any water softening equipment <i>Rate US\$ in words:.....</i>	65	Nr		
e	Ultraviolet (UV) Water Disinfection System: supply and install Ultraviolet (UV) Water Disinfection System complete with all necessary materials and accessories to complete the installation. <i>Rate US\$ in words:.....</i>	65	Nr		
f	Polypropylene (PPR) Pipes: <i>Rate US\$ in words:.....</i>				

(i)	Supply and install 25mm Cold Water Polypropylene Pipes (PPR) and accessories including elbows, T-piece, Valves from Raw Water MDPE Storage Tank to Purified Delivery Water Storage Tank to complete the installation. <i>Rate US\$ in words:</i>	65	Item	
(ii)	Supply and install 50 mm Cold Water Polypropylene Pipes (PPR) and accessories including elbows, T-piece, Valves from Submersible Pump to Raw Water MDPE Storage tank to complete the installation. <i>Rate US\$ in words:</i>	65	Item	
g	Polypropylene (PPR) Pipe Fittings:			
(i)	Simple-Valve <i>Rate US\$ in words:</i>	195	Nr	
(ii)	Shut-Off-Valve <i>Rate US\$ in words:</i>	195	Nr	
(iii)	Bypass Shut-Off-Valve <i>Rate US\$ in words:</i>	65	Nr	
(iv)	Cooling valve <i>Rate US\$ in words:</i>	65	Nr	
h	Testing & Commissioning:			
(i)	Allow for testing and commissioning of Portable Cold Water Services Engineering to proposed placement of 5,000 Liters Storage delivery tank Water Kiosks in Freetown to the satisfaction of the engineer and making all surfaces disturbed <i>Rate US\$ in words:</i>	65	Item	
	Total Mechanical services installation - cold water supply and distribution network			
6 Electrical services installation – internal wiring, earthing & bonding and lightning protection system				
a	Electrical (First Fix)			

	<u>Supply and install electrical “first fix” for the following generally in surface mounted PVC Edger Pipes installation complete with fitting and accessories for MK Boxes etc.:</u>			
(i)	Light points: ceiling Mounted Indoor LED Light Points		Nr	130
	<i>Rate US\$ in words:</i>			
(ii)	Weatherproof Outdoor LED Security Light Points		Nr	260
	<i>Rate US\$ in words:</i>			
(iii)	10Amp Light Switch Point (ATM Room)		Nr	130
	<i>Rate US\$ in words:</i>			
	Switched Socket Outlet Point:13A, Double Socket Outlet (Solar Power)		Nr	65
	<i>Rate US\$ in words:</i>			
(v)	32A, 6-way SP MCB Consumer Unit (Consumer-Solar Power)		Nr	65
	<i>Rate US\$ in words:</i>			
b	Electrical Wiring (Second Fix)			
	Supply and erect 1.5mm ² 3-core PVC insulated cable and PVC sheathed cables in concealed 20mm diameter PVC Edger Pipes in circuit wiring from Consumer Unit to Light Switch to Light Point:			
(i)	Ceiling Mounted LED Light Points		Nr	130
	<i>Rate US\$ in words:</i>			
(ii)	Weatherproof Outdoor LED Security Light Points		Nr	260
	<i>Rate US\$ in words:</i>			
	Supply and erect 2.5mm ² 3-core PVC insulated cable and PVC sheathed cables in concealed 20mm diameter PVC Edger Pipes in radial circuit wiring from power socket outlets to Consumer Unit		Nr	65
(iii)	13A, Double Socket Outlet (Inverter Power)			
	<i>Rate US\$ in words:</i>			
(iv)	Supply and erect 3-core 10mm ² XLPE/PVC/SWA armored cable concealed in 25mm diameter PVC Pipes in radial circuit wiring from 5kVA Solar Inverter to supply Inverter Power to 32A, SP Consumer Unit located as shown in the drawing.		Nr	975

	32A, 6-way SP UPS Consumer Unit					
	<i>Rate US\$ in words:</i>					
c	Fittings and Accessories (Third Fix)					
	<u>10Amp Light Switches:</u>					
(i)	1 gang 1-way Light switch	130	Nr			
	<i>Rate US\$ in words:</i>					
(ii)	10Amps Down to Dust Photo Cell Switch	65	Nr			
	<i>Rate US\$ in words:</i>					
	<u>Switched Socket Outlets:</u>					
(iii)	13Amps Double sockets - Inverter Supply	65	Nr			
	<i>Rate US\$ in words:</i>					
	Light Fixtures:					
(vi)	20W Indoor LED single lamp fitting. IP65 weather resistant and dustproof luminaires Ideal for use in adverse weather conditions. Body and diffuser made of sturdy polycarbonate for impact resistance-High Frequency and Emergency control gear. Rapid installation with Quick-fix bracket installed in ceiling. High performance in tough IP65 environments.	130	Nr			
	<i>Rate US\$ in words:</i>					
(v)	20W Weather-proof Outdoor LED single lamp fluorescent fitting. IP65 weather resistant and dustproof luminaires Ideal for use in adverse weather conditions. Body and diffuser made of sturdy polycarbonate for impact resistance-High Frequency and Emergency control gear. Rapid installation with Quick-fix bracket installed in ceiling. High performance in tough IP65 environments.	130	Nr			
	<i>Rate US\$ in words:</i>					
(vi)	Sub-Mains Switchgears: Supply and install the approved Sub-Mains Switchgears, fuse etc. and including 25mm ² diameter PVC Edger Pipe and wiring between to: 32A, 6-way SP MCB Consumer Unit (Consumer-Inverter Power)	65	Nr			
	<i>Rate US\$ in words:</i>					
d	Earthing & Bonding					
	<i>Rate US\$ in words:</i>		65	Item		

e	Lightning Protection System Allow for the supply, installation, testing and commissioning the facility Lightning Protection System requirements for performance. <i>Rate US\$ in words:</i>	65	Item	
	Testing & Commissioning			
f	Allow for testing and commissioning the complete Electrical Services Installation to the satisfaction of the engineer for performance and making good all surfaces disturbed. <i>Rate US\$ in words:</i>	65	Item	
	Total electrical services installation – internal wiring, earthing & bonding and lightning protection system			
7	PV off grid solar power services installation:			
	Supply and of 5,000 Liters Storage Tank Water Kiosks for the Freetown City Council install PV Off Grid Solar Power Services Installation to Power the proposed placement			
a	Monocrystalline Solar Panel 360W :Supply, delivery and installation of Solar Panel 360W-24V Mono 1956 x 992 x 40mm series 4a complete with interconnecting cables and accessories to complete the installation <i>Rate US\$ in words:</i>	390	Nr	
b	Inverter 24/3000: the Inverter is an efficient and reliable inverter. Built on proven and field tested Phoenix inverter platform, it now comes with a new slimmer design and full metal casing. <i>Rate US\$ in words:</i>	65	Nr	

c	Solar MPPT 100/50 Solar charge controller: a solar charger gathers energy from your solar panels and stores it in your batteries. Using the latest, fastest technology, Solar maximizes this energy-harvest, driving it intelligently to achieve full charge in the shortest possible time. It should maintain battery health and extend its life.	65	Nr		
	Rate US\$ in words:.....				
d	12V/220Ah AGM Deep Cycle Battery (M8) : supply and delivery to site 12V/220Ah AGM Deep Cycle Battery (M8) AGM with very low internal resistance suitable for high current discharge applications such as for inverters, pumps, thrusters and winches complete with cables and accessories to complete the installation	390	Nr		
	Rate US\$ in words:.....				
e	Cables and Accessories: supply and delivery to site all PV Solar Power System interconnecting cabling, switches and breakers to complete the installation.	65	Item		
	Rate US\$ in words:.....				
f	Testing & Commissioning: Allow for testing and commissioning the complete Standalone PV Off Grid Solar Power Services Installation to the satisfaction of the engineer for performance and making good all surfaces disturbed.	65	Item		
	Rate US\$ in words:.....				
Total M PV off grid solar power services installation Carried					
Total (Chain link fence with entrance gate+ water tank base and support+ metal kiosk+ mechanical services installation, cold water supply and distribution network+ electrical services installation, internal wiring, earthing & bonding and lightning protection system+ m PV off grid solar power services installation)				..	
Preliminary					
Contingency					

	Total estimated cost for water kiosks
--	---------------------------------------

Total estimated cost for water kiosks in letters (USD) :

.....

Bill of quantities for the construction of 15 public toilets

<u>1. Substructure</u>					
Item No	Description	Qty	Unit	Rate US\$ in figures	Amount US\$ in figures
<u>Site cleanse</u>					
a	Clear the whole site of unwanted materials: remove debris from site	15	Item		
	<i>Rate US\$ in words:.....</i>				
<u>Excavation</u>					
b	Excavate over site average 150mm deep, to remove top soil and vegetable matter, dispose of excavated materials	750	m ²		
	<i>Rate US\$ in words:.....</i>				
c	Excavate pit for VIP toilet commencing at ground level and not exceeding 2.5m deep-	840	m ³		
	<i>Rate US\$ in words:.....</i>				
d	Trenches to receive concrete footing in foundations	90	m ³		
	<i>Rate US\$ in words:.....</i>				
e	Pits to received column bases in foundation	30	m ³		
	<i>Rate US\$ in words:.....</i>				

f	Excavating rocks in trenches and pits: laterite Rocks (PROVISIONAL) <i>Rate US\$ in words:.....</i>	300	m ³		
g	Excavating rocks in trenches and pits : gabbro rocks (PROVISIONAL) <i>Rate US\$ in words:.....</i>	300	m ³		
h	Filling and disposal of excavated materials Depositing and compacting in layers, maximum 0.1 thick Selected materials arising from excavations to : Excavations <i>Rate US\$ in words:.....</i>	120	m ³		
i	Make up levels under floors <i>Rate US\$ in words:.....</i>	30	m ³		
j	Selected hardcore (ball stones) materials, obtained offsite to make up levels under floors, 225mm thick average, well rammed and levelled to an even surfaces <i>Rate US\$ in words:.....</i>	105	m ²		
k	Damp proof membrane (DPM) <i>Rate US\$ in words:.....</i>	105	m ²		
l	Dispose of surplus excavated materials <i>Rate US\$ in words:.....</i>	750	m ³		
	Concrete Work in Pit				
m	Reinforced in-situ concrete mix (1:2:4 - 19mm aggregate), in foundation poured against face of excavation 300mm thick <i>Rate US\$ in words:.....</i>	101	m ³		
n	Reinforced in-situ concrete (1:2:4 - 18mm aggregate), in Column bases	27	m ³		

	Rate US\$ in words:.....				
o	Reinforced in-situ concrete in columns:				
	Rate US\$ in words:.....	45	m ³		
p	Reinforced in-situ concrete in horizontal beams				
	Rate US\$ in words:.....	60	m ³		
q	Reinforced in-situ concrete (1:2:4 - 19mm aggregate), as: Floor Slab (bed), 150mm thick				
	Reinforced in-situ concrete 1:2:4 -19mm aggregate in retaining wall including reinforcement and form work (Provisional)	60	m ³		
	Rate US\$ in words:.....				
	Mild steel bar reinforcement, BS 4449: Straight and bent bars, 12mm diameter, in:				
r	Columns in foundation and column bases	1860	kg		
	Rate US\$ in words:.....				
s	Ground beams	3540	kg		
	Rate US\$ in words:.....				
t	In suspended slab	3375	kg		
	Rate US\$ in words:.....				
u	Links and stirrups, 6mm diameter, in columns; and beams	2415	kg		
	Rate US\$ in words:.....				
				C/F	
Item No	Description	Qty	Unit	Rate US\$ In figures B/F	Amount US\$
	<u>Substructure (contd) form work</u>				

v	Formwork and support to sides of columns in foundation and column bases	420	m ²		
	Rate US\$ in words:.....				
w	Formwork work site and soffit of beams	360	m ²		
	Rate US\$ in words:.....				
x	Formwork and support to soffit of floor slab	270	m ²		
	Rate US\$ in words:.....				
y	Formwork to edges of floor slab 150mm thick	270	m		
	Rate US\$ in words:.....				
	Blockwork in Foundations and in pit				
z	Precast sand Crete solid blocks, bedded and jointed in cement mortar (1:6), and laid to 225mm walling	1245	m ²		
	Rate US\$ in words:.....				
aa	<u>Finishings in Foundation and in pits</u>				
	Cement and sand (1:6) rendered smooth troweled finish to block wall and concrete surfaces, 25mm thick;	870	m ²		
	Rate US\$ in words:.....				
Total substructure					
2. Superstructure					
Item No	Description	Qty	Unit	Rate US\$ In figures	Amount US\$

2.1	<u>Concrete work</u>			
	Reinforced in-situ concrete (1:2:4 -18mm aggregate), in :			
a	Columns	23	m ³	
	Rate US\$ in words:.....			
b	Beams	30	m ³	
	Rate US\$ in words:.....			
c	Lintels	8	m ³	
	Rate US\$ in words:.....			
	Mild steel bar reinforcement straight and bent bars, 12mm diameters, in :			
d	columns	810	kg	
	Rate US\$ in words:.....			
e	Beams	1695	kg	
	Rate US\$ in words:.....			
f	Lintels	615	kg	
	Rate US\$ in words:.....			
	Links and stirrups, 6mm diameter in :			
g	Columns	120	kg	
	Rate US\$ in words:.....			
h	Beams	255	kg	
	Rate US\$ in words:.....			
i	Lintels	90	kg	
	Rate US\$ in words:.....			
	Formwork:			
j	Formwork to sides of columns	210	m ²	
	Rate US\$ in words:.....			
k	Formwork to sides and soffit of beams	285	m ²	
	Rate US\$ in words:.....			

I	Formwork to sides and soffit of lintels	105	m ²	
	Rate US\$ in words:.....			
	Total superstructure concrete work			
2.2	<u>Blockwork</u>			
	Precast sandcrete screen blocks bedded and jointed in regular			
a	pattern in cement mortar (1:6) and laid to 150mm thick in walls	750	m ²	
	Rate US\$ in words:.....			
b	Ditto: but screen block 150mm to windows	30	m ²	
	Rate US\$ in words:.....			
	Total superstructure blockwork			
2.3	<u>Roofing</u>			
a	28-gauge corrugated iron roofing sheets [2440mm longs] fix by nailing onto roof frame [measured separately]	510	m2	
	Rate US\$ in words:.....			
b	Ridge covering 450mm girth 2440mm long complete with fixing Accessories	105	m	
	Rate US\$ in words:.....			
	Total superstructure Roofing			
2.4	<u>Woodwork</u>			
	Sawn, seasoned and well treated with wood preservative hardwood timber as roof and ceiling frame 50mmx150mm hardwood timber			

a	Ridge board 50mmx100mm hardwood timber <i>Rate US\$ in words:.....</i>	525	m	
b	Rafters 50mm x 75mmhardwoom timber <i>Rate US\$ in words:.....</i>	675	m	
c	Purlins <i>Rate US\$ in words:.....</i>	780	m	
d	Struts <i>Rate US\$ in words:.....</i>	450	m	
e	fascia board <i>Rate US\$ in words:.....</i>	450	m	
	Total superstructure woodwork			
2.5	<u>Doors and ironmongery</u>			
	Timber 31mm thick skeleton framed plywood flush door complete with frame overall size: 1 leaf- single swing door			
a	0.75m wide x 2.10mm high <i>Rate US\$ in words:.....</i>	60	Nr	
b	Mortice door lock, complete with 3 no keys <i>Rate US\$ in words:.....</i>	60	Nr	
c	Pair: 100mm steel butt hinges <i>Rate US\$ in words:.....</i>	60	Nr	
	Total doors and ironmongery			
2.6	<u>Plumbing installation</u>			
	Pipe Installation			

a	Supply and install 100mm PVC as ventilation pipe fixed vertically at back of toilet, with bottom end penetrated through the concrete slab and top end fitted with vent cowl, overall length 3,50 <i>Rate US\$ in words:.....</i>	240	m		
	Equipment and ancillaries: Supply and fix the following quality sanitary appliances by manufacturer				
b	Provide and fix local manufacturer design specified white Vitreous China Wash Hand Basin, with one tap holes, overflow and chain hole complete with 2 no 12mm diameter chromium plated taps, chain, stay and 31mm waste fittings and fixed to wall on bracket. Provide for all Pipes works including Elbow, T-Pice, stopcork and Pipes to Connect the Wash hand basin to the water source <i>Rate US\$ in words:.....</i>	30	Nr		
c	Provide and Installed 250 Liters PVC water tank complete with cover, all connections to the Supply lines for the toilets taps and Wash hand basin <i>Rate US\$ in words:.....</i>	30	Nr		
d	44 Gallons capacity PVC drum complete with cover and plastic cup <i>Rate US\$ in words:.....</i>	30	Nr		
e	3 Gallons pvc water bucket <i>Rate US\$ in words:.....</i>	60	Nr		
f	Provide and fix roof gutter and all accessories to collect water from roof and discharge into water tank <i>Rate US\$ in words:.....</i>	210	m		
g	Provide outlet and pipe for supply to tanks <i>Rate US\$ in words:.....</i>	30	Nr		

Total plumbing installation					
2.7	Floor, walls and ceiling finishing, and painting				
a	Floors: cement and sand (1:6) screed on concrete floors, 50mm thick <i>Rate US\$ in words:</i>	390	m ²		
b	Walls: cement and sand (1:6) rendering to walls, ½" thick internally and externally <i>Rate US\$ in words:</i>	1665	m ²		
c	Prepare and apply three coat quality emulsion paint to Walls (internally and externally rendered walls) <i>Rate US\$ in words:</i>	1665	m ²		
d	Prepare and apply three coat quality oil base paint to wooden Doors <i>Rate US\$ in words:</i>	195	m ²		
Total Floor, walls and ceiling finishing, and painting					
Total superstructure					
Total superstructures + Total substructures					
Preliminary					
Contingency					
Total estimated cost for public toilets					

Total estimated cost for public toilets in letters (USD):

.....

	In figures US\$	In letters US\$
Total estimated cost for public toilets		
Total estimated cost for water kiosks		
Total estimated cost for public toilets and water kiosks		

Effective unit prices

Type	Alternative	Unit price
Water kiosks	Alternative 1	
	Alternative 2	
	Alternative 3	
	Alternative 4	
	Alternative 5	
Public toilet	Public toilet (only one alternative)	

Form H: Form of Proposal Security

**Proposal Security must be issued using the official letterhead of the Issuing Bank.
Except for indicated fields, no changes may be made on this template.**

To: UNCDF

[Insert contact information as provided in Data Sheet]

WHEREAS [Name and address of Bidder] (hereinafter called "the Bidder") has submitted a Proposal to UNCDF dated [Click here to enter a date](#) to execute Services [Insert Title of Services] (hereinafter called "the Proposal"):

AND WHEREAS it has been stipulated by you that the Bidder shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security in the event that the Bidder:

- a) Fails to sign the Contract after UNCDF has awarded it;
- b) Withdraws its Proposal after the date of the opening of the Proposals;
- c) Fails to comply with UNCDF's variation of requirement, as per RFP instructions; or
- d) Fails to furnish Performance Security, insurances, or other documents that UNCDF may require as a condition to rendering the contract effective.

AND WHEREAS we have agreed to give the Bidder such this Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Bidder, up to a total of *[amount of guarantee] [in words and numbers]*, such sum being payable in the types and proportions of currencies in which the Price Proposal is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of *[amount of guarantee as aforesaid]* without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

This guarantee shall be valid up to 30 days after the final date of validity of bids.

SIGNATURE AND SEAL OF THE GUARANTOR BANK

Signature: _____

Name: _____

Title: _____

Date: _____

Name of Bank _____

Address _____

[Stamp with official stamp of the Bank]