Title: ITBW – 3522000048- Maintenance works for different installations.

At different Areas at UNRWA Jordan Field Office (Wadi Seer Training center, North Amman Area and Zarga Area)

SECTION 1: LETTER OF INVITATION

United Nations Relief and Works Agency for Palestine Refugees in the Near East, hereinafter referred to as UNRWA, hereby invites prospective bidders to submit a bid in accordance with the General Conditions of Contract and the Schedule of Requirements as set out in this Invitation to Bid (ITB).

To enable you to submit a bid, please read the following documents carefully.

Section 1: This Letter of Invitation
Section 2: Instructions to Bidders
Section 3: Data Sheet
Section 4: Schedule of Requirements
Section 5: Evaluation Criteria
Section 6: Conditions of Contract
Section 7: Bidding Forms
  • Form A: Acknowledgement letter
  • Form B: Checklist
  • Form C: Bid Submission
  • Form D: Bidder Information
  • Form E: Joint Venture/Consortium/Association Information
  • Form F: Price Schedule (BOQ)
  • Form H: Form of Contract
  • Form J: Performance Bond
  • Form K: Instructions for UNGM registration and Bid submission

Section 8: Drawings
Section 9: Assessment for Nuzha Elementary Girls School 1&2
Section 10: Specification for Building Maintenance and Medium Building Construction Works

If you are interested in submitting a bid in response to this ITB, please prepare your bid in accordance with the requirements and procedure as set out in this ITB and submit it by the deadline for submission of bids set out in Section 3: Data Sheet.

Please acknowledge receipt of this ITB by completing and returning the attached Form A: Acknowledgement letter by email to tender.queries@unrwa.org no later than 19 October 2022, or via UNGM/in-tend “correspondences” functionality, bearing the same tender number with the following subject “ITBW-3522000048-(MI)” indicating whether you intend to submit a bid or not. Any email or correspondence not bearing the following subject “ITBW-3522000048-(MI)” will not be received. Should you require further clarifications, kindly communicate with the contact person/s identified in Section 3: Data Sheet as the focal point for queries on this ITB.

You are encouraged to respond with Form A, even if you do not intend to bid to ensure that you can be included in future solicitations.

All UNRWA vendors are required to comply with the United Nations Supplier Code of Conduct. We encourage all bidders to join the United Nations Global Compact and support the Women’s Empowerment Principles (WEP).

We look forward to receiving your bid.

Julius Birungi
Head procurement section (Engineering and Services)
Date: 4th October 2022
# SECTION 2: INSTRUCTIONS TO BIDDERS

## GENERAL

| 1. Scope | Bidders are invited to submit a bid for the requirements specified in Section 4: Schedule of Requirements, in accordance with this Invitation to Bid (ITB). A summary of the scope of the bid is included in Section 3: Data Sheet. Bidders shall adhere to all the requirements of this ITB, including any amendment made in writing by UNRWA. |
| 2. Interpretation of the ITB | Any bid submitted will be regarded as an offer by the bidder and does not constitute or imply the acceptance of the bid by UNRWA. UNRWA is under no obligation to award a contract to any bidder as a result of this ITB. |
| 3. Supplier Code of Conduct | All bidders must read the United Nations Supplier Code of Conduct and acknowledge that it provides the minimum standards expected of suppliers to the UN. The Code of Conduct, which includes principles on labour, human rights, environment and ethical conduct may be found at [the UN website](https://www.un.org/). The bidder must acknowledge that UNRWA strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices. In pursuance of this policy, UNRWA:

(a) Shall reject a bid if it determines that the selected bidder has engaged in any corrupt or fraudulent practices in competing for the contract in question.

(b) Further to UNRWA’s vendor sanctions policy, shall declare a vendor ineligible, either indefinitely or for a stated period, to be awarded a contract with UNRWA or any other entity of the United Nations system of organizations if at any time it determines that the vendor has engaged in any corrupt or fraudulent practices in competing for, or in executing a UNRWA contract.

UNRWA has adopted a zero-tolerance policy on gifts and hospitality. In view of this, UNRWA personnel is prohibited from accepting any gift, even of a nominal value, including drinks, meals, food products, hospitality, calendars, stationery, transportation, recreational trips to sporting or cultural events, theme parks or offers of holidays, or any other forms of benefits. Proposers shall not offer any forms of gifts, hospitality or benefits to UNRWA personnel.

Consistent with the United Nations Supplier Code of Conduct, by submitting a Proposal, the Proposer certifies that:

1. the prices offered in the Proposal have been arrived at independently, without any consultation, communication, or agreement in any manner that would result in restriction of competition with any other Proposer or competitor relating to (a) those prices; (b) the intention to submit a Proposal, and/or (c) the methods or factors used to calculate the prices offered;

2. the prices in the Proposal have not been and will not be knowingly disclosed by the Proposer, directly or indirectly, to any other Proposer or competitor before UNRWA issues an award under this solicitation; and

3. no attempt has been made or will be made by the Proposer to induce any other entity to submit or not to submit a Proposal for the purpose of restricting competition.

Failure to comply with any of the above provisions shall result in the rejection of the Proposal(s). In addition, UNRWA reserves the right to exercise any other rights and remedies available to it. |
### 4. Eligible bidders

Bidders shall have the legal capacity to enter into a binding contract with UNRWA. Registration with UNGM at Level 1 is strongly encouraged for all vendors wishing to conduct business with UNRWA. Instructions on how to register with UNGM can be found on the [UNGM website](#).

All bidders found to have a conflict of interest shall be disqualified. Bidders may be considered to have a conflict of interest if they are or have been associated in the past, with a firm or any of its affiliates that have been engaged by UNRWA to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods, services or works required in the present procurement process.

Bidders shall not be eligible to submit a bid if at the time of bid submission:

- is included in the Ineligibility List, hosted by [UNGM](#), that aggregates information disclosed by Agencies, Funds or Programs of the UN System;
- is included in the [Consolidated United Nations Security Council Sanctions List](#), including the [UN Security Council Resolution 1267/1989](#) list;
- is included in the [World Bank Corporate Procurement Listing of Non-Responsible Vendors](#) and [World Bank Listing of Ineligible Firms and Individuals](#).

### 5. Proprietary information

The ITB documents and any specifications, plans, drawings, patterns, samples or information issued or furnished by UNRWA are issued solely for the purpose of enabling a bid to be completed and may not be used for any other purpose. The ITB documents and any additional information provided to bidders shall remain the property of UNRWA. All documents which may form part of the bid will become the property of UNRWA, who will not be required to return them to your firm.

### 6. Publicity

During the ITB process, a bidder is not permitted to create any publicity in connection with the ITB.

### SOLICITATION DOCUMENTS

#### 7. Clarification of solicitation documents

Bidders may request clarifications on any of the ITB documents no later than the date indicated in Section 3: Data Sheet. Any request for clarification must be sent in writing in the manner indicated in Section 3: Data Sheet. Explanations or interpretations provided by personnel other than the named contact person will not be considered binding or official. UNRWA will provide the responses to clarifications through the method specified in Section 3: Data Sheet.

UNRWA shall endeavour to provide responses to clarifications in an expeditious manner, but any delay in such response shall not cause an obligation on the part of UNRWA to extend the submission date of the bids, unless UNRWA deems that such an extension is justified and necessary.

#### 8. Amendment of solicitation documents

At any time prior to the deadline of bid submission, UNRWA may for any reason, such as in response to a clarification requested by a bidder, modify the ITB in the form of an amendment to the ITB. Amendments will be made available to all prospective bidders.

UNRWA may extend the deadline for submission of bid to give the bidders reasonable time to incorporate the amendment into their bids.

### PREPARATION OF BIDS


The bidder shall bear all costs related to the preparation and/or submission of the bid, regardless of whether its bid is selected or not. UNRWA shall not be responsible or liable for those costs, regardless of the conduct or outcome of the procurement process.

#### 10. Language

The bid, as well as any related correspondence exchanged by the bidder and UNRWA, shall be written in the language(s) specified in Section 3: Data Sheet.

#### 11. Documents establishing

The bidder shall furnish documentary evidence of its status as an eligible and qualified vendor, using the Forms provided in Section 7 and providing the documents required in those
<table>
<thead>
<tr>
<th>Eligibility and qualifications of the bidder</th>
<th>forms. In order to award a contract to a bidder, its qualifications must be documented to UNRWA’s satisfaction.</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Technical bid</td>
<td>The bidder is required to submit a technical bid using the Form provided in Section 7 and taking into consideration the requirements in the ITB.</td>
</tr>
<tr>
<td>13. Price Schedule</td>
<td>The Price Schedule shall be prepared using the Form provided in Section 7 and taking into consideration the requirements in the ITB. The prices and discounts quoted by the bidder shall conform to the requirements specified below. • All items and lots (if applicable) must be listed and priced separately. • The price to be quoted shall be the total price of the bid. • The bidder shall quote any unconditional discounts and indicate the method for their application. • The INCOTERM shall be governed by the rules prescribed in the 2020 edition of INCOTERMS, published by The International Chamber of Commerce. The INCOTERM rules and place of destination is specified in Section 4: Schedule of Requirements. • Prices quoted by the bidder shall be fixed during the bidder’s performance of the contract and not subject to variation on any account, unless otherwise specified in Section 3: Data Sheet.</td>
</tr>
<tr>
<td>14. Currencies</td>
<td>All prices shall be quoted in the currency or currencies indicated in Section 3: Data Sheet. • For the purposes of comparison of proposals, UNRWA will convert the currency quoted in the proposal into the UNRWA preferred currency, in accordance with the UN Operational Rate of Exchange on the closing date.</td>
</tr>
<tr>
<td>15. Duties and taxes</td>
<td>Article II, Section 7, of the Convention on the Privileges and Immunities provides, inter alia, that the United Nations, including UNRWA as a subsidiary organ, is exempt from all direct taxes, except charges for public utility services, and is exempt from customs restrictions, duties, and charges of a similar nature in respect of articles imported or exported for its official use. All bids shall be submitted net of any direct taxes and any other taxes and duties, unless otherwise specified in Section 3: Data Sheet.</td>
</tr>
<tr>
<td>16. Bid validity period</td>
<td>Bids shall remain valid for the period specified in Section 3: Data Sheet, commencing on the deadline for submission of bids. A bid valid for a shorter period may be rejected by UNRWA and rendered non-responsive. During the bid validity period, the bidder shall maintain its original bid without any change, including the availability of the key personnel, the proposed rates and the total price. In exceptional circumstances, prior to the expiration of the bid validity period, UNRWA may request bidders to extend the period of validity of their bids. The request and the responses shall be made in writing and shall be considered integral to the bid. If the bidder agrees to extend the validity of its bid, it shall be done without any change to the original bid but will be required to extend the validity of the bid security, if required, for the period of the extension, and in compliance with Article 17 (Bid security) in all respects. The bidder has the right to refuse to extend the validity of its bid without forfeiting the bid security, if required, in which case, the bid shall not be further evaluated.</td>
</tr>
<tr>
<td>17. Bid Security</td>
<td>A bid security, if required by Section 3: Data Sheet, shall be provided in the amount and form indicated in the Section 3: Data Sheet. The bid security shall be valid for a minimum of thirty (30) days after the final date of validity of the bid. The bid security shall be included along with the bid. If a bid security is required by the ITB but is not found in the bid, the offer may be rejected. If the bid security amount or its validity period is found to be less than is required by UNRWA, UNRWA may reject the bid. In the event an electronic submission is allowed in Section 3: Data Sheet, bidders shall include</td>
</tr>
</tbody>
</table>
a copy of the bid security in their bid and the original of the bid security must be sent via courier or hand delivery as per the instructions in Section 3: Data Sheet.

Unsuccessful bidders’ bid securities will be discharged/returned as promptly as possible after the expiration of the period of bid validity prescribed by UNRWA pursuant to Article 16 (Bid Validity Period).

The bid security may be forfeited by UNRWA, and the bid rejected, in the event of any, or combination, of the following conditions:

- If the bidder withdraws its offer during the period of the bid validity specified in Section 3: Data Sheet, or;
- In the event the successful bidder fails:
  - to sign the Contract after UNRWA has issued an award; or
  - to furnish the Performance Security, insurances, or other documents that UNRWA may require as a condition precedent to the effectivity of the contract that may be awarded to the bidder.

### 18. Joint Venture, Consortium or Association

If the bidder is a group of legal entities that will form or have formed a Joint Venture (JV), Consortium or Association for bid, each such legal entity will confirm in their joint bid that:

- 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, and this will be evidenced by a duly notarised Agreement among the legal entities, which will be submitted along with the bid; and

- if they are awarded the contract, the contract shall be entered into by and between UNRWA and the designated lead entity, who will be acting for and on behalf of all the member entities comprising the joint venture.

After the deadline for submission of bid, the lead entity identified to represent the JV, Consortium or Association shall not be altered without the prior written consent of UNRWA.

If a JV, Consortium or Association’s bid is the bid selected for award, UNRWA will award the contract to the joint venture, in the name of its designated lead entity. The lead entity will sign the contract for and on behalf of all other member entities.

The lead entity and the member entities of the JV, Consortium or Association shall abide by the provisions of Article 19 (Only one Bid) herein in respect of submitting only one bid.

The description of the organization of the JV, Consortium or Association must clearly define the expected role of each of the entities in the joint venture in delivering the requirements of the ITB, both in the bid 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 UNRWA.

A JV, Consortium or Association in presenting its track record and experience should clearly differentiate between:

- Those that were undertaken together by the JV, Consortium or Association; and
- Those that were undertaken by the individual entities of the JV, Consortium or Association.

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.

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.

### 19. Only one bid

The bidder (including the individual members of any Joint Venture) shall submit only one bid, either in its own name or as part of a Joint Venture.
Bids submitted by two (2) or more bidders shall all be rejected if they are found to have any of the following:

- they have at least one controlling partner, director or shareholder in common; or
- any one of them receive or have received any direct or indirect subsidy from the other/s; or
- they have the same legal representative for purposes of this ITB; or
- 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 bid of another bidder regarding this ITB process; or
- they are subcontractors to each other’s bid, or a subcontractor to one bid also submits another bid under its name as lead bidder; or some key personnel proposed to be in the team of one bidder participates in more than one bid received for this ITB process. This condition relating to the personnel, does not apply to subcontractors being included in more than one bid.

20. Alternative bids

Unless otherwise specified in Section 3: Data Sheet, alternative bids shall not be considered. If submission of alternative bid is allowed in Section 3: Data Sheet, a bidder may submit an alternative bid, but only if it also submits a bid conforming to the ITB requirements. Where the conditions for its acceptance are met, or justifications are clearly established, UNRWA reserves the right to award a contract based on an alternative bid.

If multiple/alternative bids are being submitted, they must be clearly marked as “Main Bid” and “Alternative Bid”. If no indication is provided as to which bid is the main bid and which is/are the alternative bid(s), then all bids will be rejected.

21. Pre-bid conference

When appropriate, a pre-bid conference will be conducted at the date, time and location and according to any instructions specified in Section 3: Data Sheet.

If it is stated in Section 3: Data Sheet that the pre-bid conference is mandatory, a bidder which does not attend the pre-bid conference shall become ineligible to submit a bid under this ITB.

If it is stated in Section 3: Data Sheet that the pre-bid conference is not mandatory, non-attendance shall not result in disqualification of an interested bidder.

UNRWA will not issue any formal answers to questions from bidders regarding the ITB or bid process during the pre-bid conference. All questions shall be submitted in accordance with Article 39 (Clarification of Bids).

The pre-bid conference shall be conducted for the purpose of providing background information only. Without limiting Article 24 (Bidders Responsibility) bidders shall not rely upon any information, statement or representation made at the pre-bid conference unless that information, statement or representation is confirmed by UNRWA in writing.

Answers to questions raised during the pre-bid conference will be disseminated as specified in Section 3: Data Sheet. No verbal statement made during the conference shall modify the terms and conditions of the ITB, unless specifically incorporated in the minutes of the bidder’s conference or issued/posted as an amendment to ITB.

22. Site inspection

When appropriate, a site inspection will be conducted at the date, time and location and according to any instructions specified in Section 3: Data Sheet.

If it is stated in Section 3: Data Sheet that the site inspection is mandatory, a bidder which does not attend the site inspection shall become ineligible to submit a bid under this ITB.

If it is stated in Section 3: Data Sheet that the site inspection is not mandatory, non-attendance, shall not result in disqualification of an interested bidder.

Bidders participating in a site inspection shall be responsible for making and obtaining any visa arrangements that may be required for the bidders to participate in a site inspection.

Prior to attending a site inspection, bidders may need to execute an indemnity and a waiver releasing UNRWA in respect of any liability that may arise from:
United Nations Relief and Works Agency for Palestine Refugees in the Near East

| (i) | loss of or damage to any real or personal property; |
| (ii) | personal injury, disease or illness to, or death of, any person; |
| (iii) | financial loss or expense, arising out of the carrying out of that site inspection; and |
| (iv) | transportation by UNRWA to the site (if provided) as a result of any accidents or malicious acts by third parties. |

UNRWA will not issue any formal answers to questions from bidders regarding the ITB or bid process during a site inspection. All questions shall be submitted in accordance with Article 7 (Clarification of solicitation documents).

A site inspection will be conducted for the purpose of providing background information only. Without limiting Article 24 (Bidders Responsibility), bidders shall not rely upon any information, statement or representation made at a site inspection unless that information, statement or representation is confirmed by UNRWA in writing.

### 23. Errors or omissions

Bidders shall immediately notify UNRWA in writing of any ambiguities, errors, omissions, discrepancies, inconsistencies or other faults in any part of the ITB, with full details of those ambiguities, errors, omissions, discrepancies, inconsistencies or other faults.

Bidders shall not benefit from such ambiguities, errors, omissions, discrepancies, inconsistencies or other faults.

### 24. Bidders responsibility to inform themselves

Bidders shall be responsible for informing themselves in preparing their bid. In this regard, bidders shall ensure that they:

- examine and fully inform themselves in relation to all aspects of the ITB, including the Contract and all other documents included or referred to in this ITB;
- review the ITB to ensure that they have a complete copy of all documents;
- obtain and examine all other information relevant to the project and the scope of the requirements available on reasonable enquiry;
- verify all relevant representations, statements and information, including those contained or referred to in the ITB or made orally during any clarification meeting or site inspection or any discussion with UNRWA, its employees or agents;
- attend any Pre-bid conference or site inspection if it is mandatory under this ITB;
- fully inform and satisfy themselves as to requirements of any relevant authorities and laws that apply, or may in the future apply, to the supply of the goods, works and/or services; and
- form their own assessment of the nature and extent of the goods, works and/or services required as included in Section 5: Schedule of Requirements and properly account for all requirements in their bid.

### 25. No material change(s) in circumstances

The bidder shall inform UNRWA of any change(s) of circumstances arising during the ITB process, including but not limited to:

- a change affecting any declaration, accreditation, license or approval;
- major re-organisational changes, company re-structuring, a take-over, buy-out or similar event(s) affecting the operation and/or financing of the bidder or its major sub-contractors;
- a change to any information on which UNRWA may rely in assessing bids.

### SUBMISSION AND OPENING OF BIDS

### 26. Instruction for bid submission

The bidder shall submit a duly signed and complete bid comprising the documents and forms in accordance with requirements in Section 3: Data Sheet. The Price Schedule shall be submitted together with the Technical Bid. The bid shall be delivered according to the method specified in Section 3: Data Sheet.

The bid 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, if requested, a Power of Attorney, accompanying the bid.
Bidders must be aware that the mere act of submission of a bid, in and of itself, implies that the bidder fully accepts UNRWA’s General Conditions of Contract, which are available on the UNRWA website.

**27. Deadline for bid submission**

Complete bids must be received by UNRWA in the manner, and no later than the date and time, specified in Section 3: Data Sheet. If any doubt exists as to the time zone in which the Bid should be submitted, refer to the Time and Date website. It shall be the sole responsibility of the bidders to ensure that their bid is received by the closing date and time.

UNRWA may, at its discretion, extend this deadline for the submission of bids by amending the solicitation documents in accordance with Article 8 (Amendment of solicitation documents). In this case, all rights and obligations of UNRWA and bidders subject to the previous deadline will thereafter be subject to the new deadline as extended.

**28. Withdrawal, substitution and modification of bids**

A bidder may withdraw, substitute or modify its bid after it has been submitted at any time prior to the deadline for submission by sending a written notice to UNRWA, duly signed by an authorized representative. The corresponding substitution or modification of the bid, if any, must accompany the respective written notice. All notices must be submitted in the same manner as specified for submission of bids.

If submission via mail / courier is acceptable as per Section 3: Data Sheet, proposals must be clearly marked as “WITHDRAWAL”, “SUBSTITUTION” OR “MODIFICATION”.

However, after the deadline for bid submission, the bids shall remain valid and open for acceptance by UNRWA for the entire bid validity period, as may be extended.

**29. Storage of bids**

Bids received prior to the deadline of submission and the time of opening shall be securely kept unopened until the specified bid opening date stated in Section 3: Data Sheet. No responsibility shall be attached to UNRWA for prematurely opening an improperly addressed and/or identified bid.

**30. Bid opening**

Bids will be opened by a committee formed by UNRWA consisting of at least three (3) personnel including the chairperson.

**31. Late bids**

Any bid received by UNRWA after the deadline for submission of bids will be destroyed unless the bidder requests that it be returned and assumes the responsibility and expenses for the re-possession of the returned bidding documents.

In exceptional circumstances, late bids may be accepted if it is determined that the submission was sent in ample time prior to the bid closing and the delay could not be reasonably foreseen by the bidder or was due to force majeure or in other cases where UNRWA at its sole discretion determines it is in the interest of the Agency to accept a late bid.

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**EVALUATION OF BIDS**

**32. Confidentiality**

Information relating to the examination, evaluation, and comparison of bids, 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.

Any effort by a bidder or anyone on behalf of the bidder to influence UNRWA in the examination, evaluation and comparison of the bids or contract award decisions may, at UNRWA’s discretion, result in the rejection of its bid and may subsequently be subject to the application of prevailing UNRWA’s vendor sanctions procedures.

**33. Evaluation of bids**

UNRWA shall evaluate a bid using only the methodologies and criteria defined in this ITB. No other criteria or methodology shall be permitted.

UNRWA shall conduct the evaluation solely on the basis of the bids received according to the evaluation criteria in Section 4.

**34. Preliminary examination**

UNRWA shall examine the bids to determine whether they are complete with respect to minimum documentary requirements, whether the documents have been properly signed,
and whether the bids are generally in order, among other indicators that may be used at this stage. UNRWA reserves the right to reject any bid at this stage.

| 35. Evaluation of eligibility and qualification | Eligibility and Qualification of the bidder will be evaluated against the Minimum Eligibility/Qualification requirements specified in Section 4: Evaluation Criteria and in Article 4 (Eligible Bidders). |
| 36. Evaluation of technical bids | Technical evaluation will be conducted to establish substantial compliance, as per the criteria included in Section 4: Evaluation Criteria. When the bid varies in one or more aspect/s from the minimum technical specifications and/or delivery requirements specified in Section 5: Schedule of Requirements, the bid will not be considered substantially compliant and will not be evaluated further. |
| 37. Evaluation of prices | The prices of bids found to be substantially compliant, will be compared to identify the most substantially compliant bid which represents the lowest overall costs to UNRWA. |
| 38. Post-qualification | UNRWA reserves the right to undertake a post-qualification assessment, 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 ITB 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 completed contracts, including physical inspections of previous works, as deemed 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 UNRWA may deem appropriate, at any stage within the selection process, prior to awarding the contract. |
| 39. Clarification of bids | UNRWA may request clarification or further information in writing from the bidders at any time during the evaluation process. UNRWA may use such information in interpreting and evaluating the relevant bid but is under no obligation to take it into account. |
| 40. Responsiveness of bid | UNRWA’s determination of a bid’s responsiveness is to be based on the contents of the bid itself. A substantially responsive bid is one that conforms to all the terms, conditions, and specifications of the bidding documents without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that: |
|   | a) affects in any substantial way the scope, quality, or performance of the goods, services and/or works specified in the contract; or |
|   | b) limits in any substantial way, inconsistent with the bidding documents, UNRWA’s rights or the bidder’s obligations under the contract; or |
|   | c) if rectified would unfairly affect the competitive position of other bidders presenting substantially responsive bids. |
|   | If a bid is not substantially responsive, it shall be rejected by UNRWA and may not subsequently be made responsive by the bidder by correction of the material deviation, reservation, or omission. |
| 41. Nonconformities, reparable errors and omission | Provided that a bid is substantially responsive, UNRWA may waive any non-conformities or omissions in the bid that, in the opinion of UNRWA, do not constitute a material deviation. These are a matter of form and not of substance and can be corrected or waived without being prejudicial to other bidders. |
|   | Provided that a bid is substantially responsive UNRWA may request the bidder to submit the
necessary information or documentation, within a reasonable period, to rectify nonmaterial nonconformities or omissions in the bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the bid. Failure of the bidder to comply with the request may result in the rejection of its bid.

For bids that have passed the preliminary examination, UNRWA 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 UNRWA 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.

If the bidder that submitted the lowest evaluated bid does not accept the correction of errors, its bid shall be rejected and its bid security may be forfeited.

42. Right to accept any bid and to reject any or all bids

UNRWA reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for UNRWA’s action. UNRWA shall not be obliged to award the contract to the lowest priced offer.

43. Samples

Where required as per Section 5: Schedule of Requirements, free, non-returnable samples shall be provided by the bid submission deadline for evaluation and testing by UNRWA or their representative, of the item and/or the packing and packaging, prior to any award. Samples will be subject to technical review and laboratory analysis where appropriate. Samples provided to UNRWA are non-returnable, unless otherwise stated. Samples should be marked with the ITB number.

If a bidder fails to provide samples or documents requested by UNRWA in a timely manner, UNRWA may declare the bid unsuccessful.

AWARD OF CONTRACT

44. Award criteria

In the event of a Contract award, UNRWA shall award the Contract to a bidder who has been determined as eligible and qualified and whose bid has been determined to be the lowest priced, substantially compliant offer to the ITB. UNRWA reserves the right to conduct negotiations with the bidder recommended for award on the content of their bid.

45. Right to vary requirement at time of award

At the time the Contract is awarded, UNRWA reserves the right to increase or decrease the quantity of goods, works and/or services originally specified in Section 5: Schedule of Requirements and without any change in the unit prices or other terms and conditions of the bid and the bidding document.

46. Notification of award

UNRWA will notify the successful bidder in writing by email or post, that its bid has been accepted.

47. Debriefing

In the event that a bidder is unsuccessful, the bidder may request a debriefing from UNRWA. 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 bids for UNRWA procurement opportunities. The content of other bids and how they compare to the bidder’s submission shall not be discussed.

48. Publication of Contract Award

UNRWA may publish the contract award on United Nations Global Marketplace, with the ITB reference number, the information of the awarded bidder company name, contract amount or LTA and the date of the contract.
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>49. Performance security</strong></td>
<td>The successful bidder, if so specified in Section 3: Data Sheet shall furnish a performance security in the amount and form specified therein, within the specified number of days after receipt of the contract from UNRWA. Banks issuing performance securities must be acceptable to UNRWA comptroller, i.e. banks certified by the central bank of the country to operate as a commercial bank. UNRWA shall promptly discharge the bid securities of the unsuccessful bidders pursuant to Article 17 (Bid Security). Failure of the successful bidder to submit the above-mentioned performance security or sign the contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security. In that event UNRWA may award the contract to the next lowest evaluated bidder, whose offer is substantially responsive and is determined by UNRWA to be qualified to perform the contract satisfactorily.</td>
</tr>
<tr>
<td><strong>50. Bank guarantee for advance payment</strong></td>
<td>Except when the interests of UNRWA so require, it is UNRWA’s standard practice not to make advance payment(s) (i.e., payments without having received any outputs). If an advance payment is allowed as per Section 3: Data Sheet, and if specified there, the bidder shall submit a Bank Guarantee in the full amount of the advance payment. Banks issuing bank guarantees must be acceptable to the UNRWA comptroller, i.e. banks certified by the central bank of the country to operate as a commercial bank.</td>
</tr>
<tr>
<td><strong>51. Liquidated Damages</strong></td>
<td>If specified in Section 3: Data Sheet, UNRWA shall apply Liquidated Damages for the damages and/or risks caused to UNRWA resulting from the Contractor’s delays or breach of its obligations as per the Contract. The payment or deduction of such liquidated damages shall not relieve the Contractor from any of its other obligations or liabilities pursuant to any current contract or purchase order.</td>
</tr>
<tr>
<td><strong>52. Bid protest</strong></td>
<td>Any bidder that believes to have been unjustly treated in connection with this bid process or any contract that may be awarded as a result of such bid process may submit a complaint. The bidder may as a first step protest directly to the relevant Awarding Authority within ten working days of receipt of the notification that the bidder has not been awarded a contract (or publication of award). The Awarding Authority will review the protest and provide a reply to the bidder. The bidder may forego this step and protest directly to the Chief, Central Support Services Division of UNRWA.</td>
</tr>
</tbody>
</table>
**SECTION 3: DATA SHEET**

The following specific data shall complement, supplement or amend the Provisions in Section 2: Instructions to Bidders. In case there is a conflict, the provisions herein shall prevail over those in Section 2: Instructions to Bidders.

<table>
<thead>
<tr>
<th>Ref. Article in Section 2</th>
<th>Specific Instructions / Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Scope</td>
<td>The reference number of this Invitation to Bid (ITB) is <strong>ITBW-35220000048</strong>. The works include the Construction Maintenance for different UNRWA installations as further described in Section 4 of this ITB.</td>
</tr>
<tr>
<td>4. Eligible bidders</td>
<td>Proposers from all countries/territories are eligible to participate in this proposal process.</td>
</tr>
</tbody>
</table>
| 7. Clarification of solicitation documents | Contact details for clarification of solicitation documents: E-mail address: tender.queries@unrwa.org
Clarifications are only accepted either
i) via e-mail to tender.queries@unrwa.org (please specify “ITBW-35220000048 (MI)” under the subject)
OR
ii) via in-tend “correspondences” tab.

**ATTENTION:** BIDS SHALL NOT BE SUBMITTED TO THE ABOVE-MENTIONED E-MAIL OR CORRESPONDANCE TAB. PLEASE REFER TO INSTRUCTIONS FOR BID SUBMISSION IN ARTICLE 26 OF SECTION 3 (BID DATA SHEET). FAILING TO FOLLOW SUBMISSION INSTRUCTIONS MAY LEAD TO DISQUALIFICATION OF YOUR BID. |

**Deadline for submitting requests for clarifications / questions:**
- **Date:** 10 October 2022
- **Time:** 01:00 PM
- **Time zone:** Amman Time

**Manner of disseminating supplemental information to the ITB and responses / clarifications to queries:**
- UNGM website

| 10. Language | All bids, information, documents and correspondence exchanged between UNRWA and the bidders in relation to this bid process shall be in **English**. |
| 14. Currency | Selection of currency for price offer is prerogative of the Bidder. Prices may be quoted in a currency other than the US Dollar. However, for the purposes of commercial evaluation and comparison of all Financial Proposals, the UN will convert the currency quoted in the Financial Proposal to US Dollar, in accordance with the prevailing UN Operational Rate of Exchange at the Closing Time.

The Contract/Purchase Order awarded to the selected Bidder, Bidder's invoices and UNRWA payments, will be made in the currency as originally quoted by the Bidder in its Financial Bid. |
| 15. Duties and taxes | All prices shall:
Be exclusive of VAT and other applicable indirect taxes. |
<p>| 16. Bid validity period | <strong>120 days</strong> |
| 17. Bid security | <strong>Required in the amount of [5% of your bid submission] for each project</strong> |
| 20. Alternative bids | Shall not be considered. |
| 21. Pre-bid conference | <strong>Will not be conducted</strong> |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Site inspection</td>
<td><strong>A site inspection will not be held.</strong></td>
</tr>
<tr>
<td>26</td>
<td>Instruction for bid submission</td>
<td>Allowable manner of submitting proposals: ☒ E-tendering (In-Tend) The bids shall be submitted via the UNRWA e-tendering system (In-Tend) which can be accessed through the United Nations Global Marketplace. This document contains general guidance on how to register with UNGM and make a submission. The UNGM website also contains a help section with further guidance.</td>
</tr>
<tr>
<td>27</td>
<td>Deadline for bid submission</td>
<td>Date: <strong>19 October 2022</strong> Time: <strong>01:00 PM</strong> Time zone: <strong>Amman Time</strong></td>
</tr>
<tr>
<td>28</td>
<td>Expected date for commencement of contract</td>
<td><strong>25 November 2022</strong></td>
</tr>
<tr>
<td>29</td>
<td>Contract award to one or more bidder</td>
<td>UNRWA may award a contract to: One or more Bidders, depending on the following factors: lowest price technically compliant bid for each Bill of Quantity</td>
</tr>
<tr>
<td>49</td>
<td>Performance security</td>
<td>Required in the amount of [10% of your bid submission] for each project</td>
</tr>
<tr>
<td>50</td>
<td>Advance payment</td>
<td>Not Allowed</td>
</tr>
<tr>
<td>51</td>
<td>Liquidated Damages</td>
<td><strong>Will be imposed as follows:</strong> Sum of liquidated damages <em>per day of delay: JOD 150 for each Project</em>, up to a maximum of 10% of the Contract value, after which UNRWA may terminate the contract.</td>
</tr>
</tbody>
</table>
SECTION 4: SCHEDULE OF REQUIREMENTS

1. SCOPE OF WORKS

The scope of works concerns all works related to purchase, delivery and installation of material needed to complete the required works and includes transport and unloading of all necessary equipment and material on sites, all construction works specified in the tender dossier, cleaning up of construction sites upon completion of works, all as per the design, bill of quantities and specifications of the Project.

We emphasize that the work items related to the reinforced concrete include both concrete and reinforcement steel and unit prices should be calculated accordingly.

List of installations and premises subjected in this tender:

<table>
<thead>
<tr>
<th>No.</th>
<th>Installation</th>
<th>Premises Name</th>
<th>Required works</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wadi Al Seer training center</td>
<td>Wadi Al Seer training center (WSTC)</td>
<td>Maintenance for Roof insulation and minor maintenance</td>
<td>31.948167,35.82975</td>
</tr>
<tr>
<td>2</td>
<td>North Amman Area</td>
<td>1-Nuzha elem. Girls schools # 1&amp;2</td>
<td>Structural repair of walls and soffits &amp; General maintenance for the school</td>
<td><a href="https://maps.google.com/?q=31.974665,35.927528">https://maps.google.com/?q=31.974665,35.927528</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-Baqaa Prep. Boys school 3&amp;4</td>
<td>Repair drainage system in school yard</td>
<td><a href="https://maps.google.com/?q=32.069263,35.841164">https://maps.google.com/?q=32.069263,35.841164</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-North Amman Area Office</td>
<td>Renovation for the toilet units</td>
<td><a href="https://maps.google.com/?q=31.974401,35.926952">https://maps.google.com/?q=31.974401,35.926952</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-Amir Hasan prep. boys’ school</td>
<td>Maintenance of water tanks and concert canopies &amp; shading shed</td>
<td><a href="https://maps.google.com/?q=31.957543,35.973831">https://maps.google.com/?q=31.957543,35.973831</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-Russeifeh prep girls school No.1</td>
<td>Maintenance of boundary wall and rainwater drainage</td>
<td><a href="https://maps.google.com/?q=32.014262,36.043263">https://maps.google.com/?q=32.014262,36.043263</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4-Marka prep. Girls school 3&amp;4</td>
<td>Maintenance of water and sewage network and maintenance of toilet units</td>
<td><a href="https://maps.google.com/?q=32.009167,36.020417">https://maps.google.com/?q=32.009167,36.020417</a></td>
</tr>
</tbody>
</table>

The bidder has the flexibility to bid to all or to any of the above 3 installations. However, if a vendor selects an Installation, then the bidder must provide quotations for all items within the corresponding bill of quantity for that Installation.
2. TECHNICAL INSTRUCTIONS

2.1 UNRWA will not conduct a Pre-bid visit however interested bidders can visit the sites on their own as per the google locations provided.

2.2 The Contractor shall be deemed to have inspected the site prior to the submission of his tender and to have satisfied himself as to the nature of ground, the access to the site and all other factors affecting the execution and completion of the works and to have allowed for all these factors in preparing his tender.

2.3 The workmanship shall be of the kind and quality described, defined, or shown in the contract documents and where the workmanship is not described, defined or shown, it shall be of the highest standard used in the locality wherein the site is situated.

2.4 The contractor undertakes to keep noise and disturbance down to the minimum, keep the site tidy and clean all the time, and execute temporary fence and safety barriers as needed.

2.5 The contractor shall be deemed to have studied the drawings thoroughly, any uncertainties or queries must be raised prior to submitting the bid. No future claim shall be considered unless of an unusual nature.

2.6 All materials and needed shop drawings shall be submitted by the contractor for approval.

2.7 The price of plastering and rendering in the Bills of Quantities must include metal Aching, angle beads...etc.)

2.8 The contractor is requested to formwork (shatter) any underground works (foundations, ground beams stub columns, etc...) and as instructed by the Director of the Work.

2.9 Maintenance works should be completed within:

2.9.1 72 Days for general maintenance at North Amman Area.
2.9.2 45 Days for maintenance at Wadi Al Seer Training Centre.
2.9.3 60 Days for maintenance works at four schools at Zarqa Area.

2.10 Curing of slabs with water shall commence as soon as the concrete has settled, wet sacking or plastic folio with tight joints shall be used to cover the slab as soon as the concrete is workable. This also applies to ready mix concrete being used. Other parts of the structure shall be covered as soon as the form work has been stripped. Wooden formwork shall be soaked with water before the casting of concrete and during the curing period.

2.11 Approved concrete cube tests alone are not proof enough that the completed concrete structure is of high quality. More important is the concrete mix used, the workmanship and the level and intensity of concrete curing. The Agency may extract drilled core samples during the construction and maintenance periods to satisfy itself that the structure meets the standards required. Failure to do so may result in deduction of the contract fee and/or remedy works to be requested from the contractor.

2.12 Contractor shall execute on his own an opening (access to his labours and equipment) with a temporary door through existing wall and to close the opening on completion of the work.

2.13 The description given against the items does not necessarily describe fully all the work to be performed; the contractor shall refer to the Agency's specifications for building Maintenance & Medium Building Construction works (attached to this tender in Section 9) and adopt this in
coordination with site supervisor. A copy is attached to the tender and must be signed in conjunction with signing all contract /tender documents.

2.14 A security deposit **Maintenance Bank Guarantee** (valid for one year) in the sum of 5% of the amount of the total executed works must be submitted by contractor to the Agency upon the completion of works (Provisional Acceptance)

2.15 It is the contractor’s responsibility to claim the maintenance guarantee when the period of maintenance indicated in the contract expires. To claim the maintenance guarantee, contractors must submit their request within one year from the expiry date of the “Maintenance Guarantee”.

2.16 The prices quoted must be all inclusive and fixed. The Agency will not reimburse any cost incurred due to fluctuations of the prices on the market. Hence, it is the contractor responsibility to appropriately price its offer.

2.17 The contractor must assign **for each Project** a qualified representative a Civil Engineer with experience **not less than 3 years** in executing similar projects to be available full time on site & approved by Director of Works.

2.18 In case the contractor failed to assign a Civil Engineer as paragraph 2.17, the Agency have the right to deduct **JOD 1,500 (One thousand Five Hundred JOD)** for each month from any sums due to contractor under the contract. Or recovered from the security deposit without any notice.

2.19 The contractor must assign **for each project** a qualified Electrical Engineer with experience **not less than 3 years** and approved by Agency to be **available part time on site** to follow up Electrical workshop drawings, electrical submittal material, electrical work execution, coordinate with contractor representative and site engineer to ensure good execution and other requests needed for Electrical installation.

2.20 In case the contractor failed to assign Electrical Engineer as paragraph 2.19 the Agency have the right to deduct **JOD 100 (One Hundred JOD)** for each day from any sums due to contractor under the contract. Or recovered from the security deposit without any notice.

2.21 Emails will be considered as one of the official communication channels.

2.22 **Contractor MUST be fully aware of the following:**

2.22.1 Full Coordination with the Director of Work (D.O.W) & Administration before and during works.

2.22.2 Keep the Workplace clean all the time. And all debris should be removed immediately outside the field on daily basis.

2.22.3 Contractor’s staff & workers must be vaccinated against COVID-19 or provide results as per the Government of Jordan defence order.

2.23 The awarded Contractor **MUST** coordinate closely & apply regulation & rules applied by the authorities regarding delivery of materials to site, removal excavation materials, casting contract or movement of equipment, tools, Machinery in and out the site &bear all coast due to apply the regulations & rules.

2.24 The awarded contractor **MUST** carry out safety barriers, strong, good visible, durable, effective, not less than 300cm height, and to meet & compliant with regulation of health & safety. The safety barriers should meet UNRWA regulations & rules requirements and also accepted by UNRWA representative on site (Director of Works).
2.25 The awarded contractor MUST submit for each project the below documents within maximum 10 days from commencement date:

2.25.1 Work Plan time frame / schedule (bar chart) for the project using Microsoft software & to submit two hard copies to director of work “UNRWA representative on site”.

2.25.2 Works on site especially excavation will be stopped if the above item not submitted.

2.26 The Contractor shall be responsible for making arrangements for the use water and electricity that may need for fulfilling any UNRWA contractual obligations. UNRWA may allow the Contractor to use water and electricity on site, but the conditions and prices will be determined by the Director of Works if the Contractor elects to use the water and electricity existing at a UNRWA job site:

2.26.1 If the Contractor elects to use the water and electricity at UNRWA job site; the Contractor shall assume the risk and cost for the use of water and electricity as well as provide any necessary equipment for the use of these services

2.26.2 The Director of Works will send the Contractor an invoice indicating the quantities consumed for the use of water and electricity by the Contractor and any amounts owed

2.26.3 The Contractor shall pay the full amount owed to the Agency after the work is completed. In the event that the Contractor fails to pay the amount owed, the Agency will deduct the amount owed from any funds due the Contractor. The Contractor shall be informed of such deductions.

2.26.4 In case the contractor continues to work for UNRWA, the amount owed for water and/or electricity would be calculated by the Director of Works based on the formula below:

2.26.5 Amount owed = the sum of the water/electricity bills incurred during the contractor’s use -3 years average expenditures preceding the contractor

2.26.6 The amount owed would be the difference of the total amount for the sum of the water/electricity bills incurred during the contractor’s use minus the three (3) prior year’s average expenditures preceding the contractor

2.26.7 The Director of Works will refer to either ICIP Engineers, Electrical Engineer, Area Maintenance Engineer, Site Engineer in addition to CFICIP for endorsement

2.27 Contractor MUST take all safety measures in all stages of works especially during the staff working hours without affecting the smooth running of the work and the smooth movement of the staff.

2.28 Unless specified in B.Q., the unused materials belong to contractor & this item cancels any contradiction in the contract.

2.29 Measurements of quantities must be taken up or down the nearest meter.

2.30 Any item which requires transferring furniture in rooms during the maintenance period (like tables, chairs ...), the vendor’s price offer must include transferring and returning furniture to their original position even if the description does not state so.

3 ADDENDUM TO BOQ RELATED ITEMS VERY IMPORTANT IN PRICING

3.1 Emulsion paint items must include 2 coats of full putty or more to ensure coverage.
3.2 For emulsion or oil paints and Texture paints, rate to include painting in multi colours.

3.3 For doors of toilets, an additional stainless steel sliding locker (Thumb latch) from inside must be included in the item price.

3.4 Details around the frames of all doors to be same as the details of toilet doors.

3.5 For concrete pavement for playgrounds and yards, items must include using hardener and Helicopter finish.

3.6 Aluminium windows sections to be Heavy Sections with silver colour.

3.7 All door and window jambs for metal or timber doors or aluminium windows to be executed as dummy columns, even it indicated on drawings or not, the rate to be included in block walling rates.

3.8 Colours of paints to be computer mix and to the approval of DOW.

3.9 In case there is a water or drainage pipe that is to be covered by porcelain tiles, unglazed ceramic tiles, cement tiles and terrazzo tiles, the size of the sand cement mortar must be adequate to cover the pipes. The cost of extra mortar to be included in the prices for the tiles.

3.10 The contractor will provide the premix key coat of plaster and a 20 cm wide wire mesh to be fixed on all electrical, sewerage and water pipes and all joints in toilets, kitchens, labs etc to ensure that there is enough bonding to receive ceramic tiles. Such additional bonding materials shall be included in unit price of ceramic tiles.

3.11 All lintels over windows or doors must be cast in place. No precast concrete lintels are accepted.

3.12 The Contractor to submit shop drawings before starting any activity.

3.13 The Contractor must submit compliance sheet for any materials that he used on site. The Compliance sheet should show the requirements on the drawings, specifications and B.O.Q.

3.14 Upon request of the Agency, the Contractor will have to submit a method statement if needed for any activity.

3.15 The reinforced concrete in this tender will mean concrete with reinforcement steel and the unit price of reinforced concrete should include concrete and steel accordingly.

3.16 All door frames must be to the full of width of plastered/finished block wall or concrete wall.

3.17 For all timber furniture, plywood thickness to be 22 mm even if stated in drawings to be less.

3.18 Porcelain tiles to be of best quality to the approval of Director of Works (DOW).

3.19 All blocks, or hollow blocks for ribs to be automatic machine made.

3.20 After applying texture paint, the contractor must repaint the textured surface with at least one or several coats of emulsion paint until if fully covers the same. These emulsion coats to be included in the unit price of the textured paint.

3.21 All paints must be (environmentally friendly).
NB. The Contractor must consider above points and include the additional price in the relevant unit price.

4 ADDENDUM TO SPECIFICATIONS

4.1 The contractor must use Ready Mix Concrete from an approved supplier.

4.2 For minor concrete works such as lintels, jambs, topping, plinths, trough support and parapets for staircase, the Contractor may be allowed to use on site concrete mixes (cast in situ) as approved by Director of Works. Aggregates delivered to site must be stored properly. Mix design must be carried out by the contractor through the approved engineering laboratory.

4.3 Compaction pokers shall have a diameter of 50 mm unless otherwise approved by the Agency representative. At least two concrete compactors are required on site.

4.4 Where mentioned in the Bills of Quantities, “imported granular fill materials” shall mean good quality base coarse.

4.5 The curing of all concreted elements with water shall commence soon after the initial setting of concrete. Wet sacking or plastic sheeting or curing agents shall be used to cover the concrete members.

4.6 The Agency may request core samples from concreted work during the construction and/or maintenance period to satisfy itself that the structure meets the standard required. Failure to carry out remedial works following such core tests may result in deductions from the contract invoice and/or the contractor being asked to carryout remedial works.

4.7 Cement mortar for all plastering, tiling masonry works MUST be mixed using mixer with can.

5 PARTICULAR CONDITIONS, SPECIFICATIONS AND SCOPE OF ELECTRICAL WORKS

5.1 GENERAL TERMS:

It should be well known for the contractor that the execution of electrical works (programming and work time schedule) shall done after Engineer approval, as it depends on other contractors or material suppliers. Engineer shall coordinate between contractors and suppliers. Contractors shall cooperate and comply with decisions taken as coordinated and approved by UNRWA.

5.1.1 Electrical works consist of supply, install, test, and/or commission, all electrical materials and requires maintenance during the defect liability period.

5.1.2 Contractor must hand over all electrical installations to UNRWA in perfect and operable manner.

5.1.3 Work shall be as shown on shop drawings.

5.1.4 Contractor must get the Engineer’s approval for electrical materials before installation. Special request forms for approvals should be used for material and for the installation.

5.1.5 Electrical works should be coordinated with mechanical, civil, and architectural works and necessary changes to the drawings have to be discussed and agreed by the Engineer if needed.

5.1.6 Electrical workshop drawings should be submitted to the Engineer and approved before starting the electrical works.
5.1.7 Any item in the bills of quantities might be increased or decreased without changing the unit price of the item.

5.1.8 The contractor must submit all as built drawings before handing over the project.

5.1.9 All electrical materials shall comply with the new international specifications, especially the following list of standards – DIN, IEC, BS, IEE, and or IEEE.

Further to the requirements of the General & special conditions of the contract regarding the compliance of all materials and products and standards.

5.2 ELECTRICAL SUPPLY:

Normal low voltage supply in the site is 400/230V. 50Hz. 3-phase 4-wires. All electrical equipment shall therefore be checked before installation in order to operate satisfactorily on the above-mentioned low voltage supply and operating temperature and within the following tolerance:

- Voltage (# 10%)
- Frequency (# 2%)
- Design ambient temperature 35 C. – 60% R.H.

5.3 SHOP DRAWINGS:

Just after singing the contract, the contractor must prepare a full detailed shop drawings for all electrical systems included in his work. Drawings for each system shall show the following details:

5.3.1 Routing of PVC conduits with full dimensions on plans for each system.

5.3.2 Size of each conduit or trunk.

5.3.3 Number of wires or cables passing through conduits, ladders, trays, and or trunking.

5.3.4 Locations of lighting fixtures or sockets and or any fitting in the low currents systems on plans.

5.3.5 Riser diagrams for each system.

5.3.6 External and internal cabling or wiring for each system.

5.4 ELECTRICAL MATERIALS SAMPLE:

Electrical material used shall be not more than one year old. Contractor must submit for approval catalogues with full details, for all materials he intended to use in electrical installations for the project. Samples must be checked prior submitting to Engineer by the contractor engineer, in order to make sure that the material is according to specifications, and of best quality. Manufacturer should stamp each sample.

5.5 COMPLIANCE WITH REGULATIONS AND STANDARDS:

5.5.1 Applicable codes & all standards shall include all state laws, local ordinances, utility. Regulations & the applicable requirements of the following accepted codes & standards:

- IEC. International Electrical commission, standard publication 364.
• Peregrines LTD on behalf of the institute of Electrical Engineers.
• Comply with related IEC, and BS. Regulations.
• Codes & Regulations of local Electricity Authority.

5.5.2 The whole documents shall integrate each other & accordingly any work shown on the drawings & not described in the specifications or vice versa, shall be executed under this contract.

5.5.3 All materials & workmanship shall comply with all applicable code specifications, or local Ordinances, British standards, utility company requirements.

5.6 MANAGEMENT OF WORK:

5.6.1 In order to supervise the execution of his work, the contractor will appoint a licensed Electrical Engineer, who must be approved by the UNRWA Electrical Engineer. The Contractor Electrical Engineer must be present on site whenever the works constituting the subject of this contract are being carried out, and he will be the only person authorized to address to UNRWA Electrical Engineer with any problem arising during work execution. The Contractor Electrical Engineer will carry out his work subject to the UNRWA Electrical Engineer’s instructions, and any instruction issued by the Engineer.

5.6.2 In any event when a certain matter has to be clarified between the UNRWA Electrical Engineer and Contractor Electrical Engineer, and in the contractor’s absence, the Contractor Electrical Engineer must be fully authorized to represent the contractor and his signature will bind the contractors.

5.6.3 The contractor, through his Electrical Engineer, will conduct a regular work log, in which all work progresses processes will be entered, as well as the Engineers remarks and any claims for irregular works or processes will be entered, as well as the Engineers remarks and any claims for irregular works or (day work). This work-log must be kept on the site, and be available to the UNRWA Electrical Engineer at all times.

5.6.4 The contractor will be responsible for the execute on and completion of his work, in such time as proves appropriate, for the progress of the over-all project, while co-ordination his work with the primary contractor and the other subcontractors, without causing any damages or delays in the works carried out inside the building and in the surrounding area. The contractor must ensure, particularly, that none of the junction boxes or passages/duct works already installed be locked by other installations such as: water pipes, sewage pipes, air conditioning ducts, etc. the contractor must submit to the UNRWA Electrical Engineer’s approval a timetable for the execution of his work, which had been co-ordinate with the timetable of the primary contractor.

5.7 CONTRACTOR’S RESPONSIBILITY WARRANTY:

5.7.1 The contractor will be responsible to the UNRWA for the quality of the workmanship and materials he had supplied for a period of one year after the installation has been completed tested and accepted. Any malfunctions, failures, faults and defects detected in the installation during this warranty period, or any work found to have been executed not according to the plans, blueprints, specifications and instructions, will be repaired by the contractor, at his expense, within an appropriate time-interval, as determined by UNRWA Electrical Engineer.
5.7.2 Supervision of the contractor’s work and approval of it by the UNRWA Electrical Engineer will not exempt the contractor from his responsibility for the execution.

5.8 AS BUILT DRAWINGS:

Before the final, comprehensive test is commissioned, the contractor will prepare the electrical plans/drawings of the installation as built with clear markings of all deviations and changes carried out—on relation to the original plans. The contractor will submit to the Engineer two sets of updated plans in addition to those required for submittal to the Electrical Co. with CD’s for the purpose of testing the installation.

5.9 INSTALLATION TESTING AND ACCEPTANCE:

5.9.1 When the installation has been completed, a trial run will be carried out to ensure that the installation functions properly. Any malfunctions detected must be repaired to the UNRWA Electrical Engineer’s full satisfaction. Following the trial run, the contractor will commission a test by the official authority, which is to be co-ordinate in advance with the UNRWA Electrical Engineer. The contractor will invite the official authority to test the entire installation, or any part as required by the UNRWA Electrical Engineer.

5.9.2 The work shall be considered complete after it has been accepted, without reserve, by the official authority, by the UNRWA Electrical Engineer, and after a trial run has been carried out. Any changes or repairs required will be carried out without delay, until the aforementioned installation has been finally accepted. The contractor will supply all the labor, means and instruments required in order to carry out the aforementioned tests and trial run. The UNRWA Electrical Engineer will serve as the exclusive arbiter regarding any term or definition contained within these specifications, as well as the evaluation of the works and their compliance with these specifications.

5.9.3 The following conditions and specifications must be adhered to throughout the execution of the electrical works:
- The contractor shall be deemed to have inspected the site prior to the submission of his tender.
- The electricians employed on the job shall be qualified and specialized in the installation of electric power distribution circuits and all necessary accessories.
- The contractor undertakes to keep the noise and disturbance down to the minimum, keep the site tidy and clean all the time.
- The contractor is deemed to have studied all relevant drawings thoroughly and any uncertainties or queries clarified prior to submission of the bid.
- All materials must be approved prior to fixing and subject to testing or inspection as required by the Director of Works and UNRWA Electrical Engineer.
- The contractor must provide manufacturer’s quality certificates and guarantees in respect of the materials supplied as required by the Director of works.
- The general and particular electrical regulations relating to this type of work must be adhered to throughout the execution of work.
- Shop drawings. Schematic diagrams and schedule of load shall be submitted by the contractor for approval as required by the director of works.

5.10 SCOPE OF ELECTRICAL WORKS:
- The DB and terminated wires must be named and numbered using sleeve labels & printed labelling the contractor.
- The contractor must arrange the electrical load on DB by matching between the size of wires used and CB used for the same circuit.
• The complete system shall be thoroughly tested before operation; tests shall be carried out by the contractor, under the supervision of UNRWA Electrical Engineer. Any modification or repair necessary on the completion of the tests shall be made good at the contractor’s expenses. The contractor shall provide all testing equipment and materials.
• No more than 10 lighting points shall be connected to miniature circuit breaker.
• No more than 4 socket outlet points shall be connected to miniature circuit breaker.
• Bends in conduits shall be made such that the inside radius of the bend is not less than two and a half times the outside diameter of the conduit. Bent angles shall not exceed 90 degrees.
• All conduit ends left open during the course of the works shall be plugged to avoid filling with plaster and the like.
• Wires shall be standard 600 volt grade for both light and power circuits.
• Devices intended to break current shall have a breaking capacity sufficient for the voltage employed and or the current that must be interrupted.
• All electrical equipment, accessories and fittings exposed to weather; corrosive atmosphere, or other adverse conditions shall be so constructed or protected as may be necessary to prevent danger arising from such exposure.
• All electrical equipment, accessories, fittings, cables, trunks and pipes shall be installed in an neat and a workman like manner.
• No addition, temporary or permanent shall be made to the authorized load of an existing installation, unless it has been ascertained that the current rating and the condition of any existing conductors and the equipment which will have to carry the additional load are adequate for the increased loading and the earthing arrangements are also adequate.
• The maximum permissible drop in voltage form the consumer terminals to any point in his installation shall not exceed 2.5% of the nominal voltage when the conductors are carrying full load current.
• Cables shall not generally be connected in parallel except where for a particular loading, a single cable is insufficient, and it is not practicable to employ bust bar trunking. In such situations single core or multicore cables may be connected in parallel provided that the cables are of the same type, size and length to ensure proper division of the current.
• All wires conductors of cables connected to the phase of the supply shall have “Red” or “Yellow” or “Blue” outer layer of insulation and shall not be used as of cables connected to the neutral of the supply shall have “Black” outer layer of insulation and shall not be used as phase conductor. Finally, Green/Yellow coloured wires or conductors of cables shall be used as “EARTH” conductor only.
• Joints in wires shall not be permitted.
• Circuits feeding face or more lights, the loop in system of wiring shall be employed.
• Not more than three lighting circuit or two socket circuits shall be bunched in the same conduit.
• Where a common cable trunking shall be manufactured with adequate strength and rigidity. All sharp edges, burrs and other projections shall be removed and the trunking finished smooth to prevent injury to cables and wires.
• Cable trunking shall be securely supported every meter, when run exposed.
• The number of single core cables that may be housed in a trunking shall be such that a space factor of 45 percent is not exceeded.
• The wiring of each final circuit shall be electrically separate from that of every other final circuit and each circuit shall be provided with its own separate neutral.
• Electrician involved in maintenance work must have his own electrical measuring instrument for example Avometer, clamp meter, meger etc.
• Make good all effected work due to replacement.
6 ADDENDUM TO GENERAL INSTRUCTIONS

Testing of Materials

6.1 Procedures on Control of Concrete Quality

Subject: Records of Concrete Quality

6.1.1 Purpose

This procedure is issued in order to achieve a uniform standard throughout the Agency and to facilitate verification of quality of concrete supplied to OR produced on Agency’s construction sites.

6.1.2 Effective Date

This Procedure will become effective from March 22, 2004 Records of Concrete Quality Supplied to OR Produced on Site

6.2 Introduction

The procedure listed below is for the purpose of verifying that the materials used, mix proportions and production methods of concrete can reasonably be expected to consistently produce concrete complying with the specified requirements.

It does not address the question of the “in-situ strength” of the concrete (i.e. strength of concrete within the structure) which also depends on the method of placing, compaction, curing etc. For requirements on workmanship, curing etc. reference must be made to the general specification, other relevant ECS Procedures and technical reports issued.

6.3 Information to be checked at the start of a project

At the commencement of a project and prior to the commencement of any concrete works, the “Director of Works” has to satisfy himself that the concrete mixes proposed by the contractor can reasonably be expected to consistently produce concrete complying with the specified requirements. This assessment shall be based on the following information obtained from the contractor.

a) Source of each constituent material used in the mix and samples of the constituent materials. These samples must be retained in the site office as control samples until completion of the project.

b) Proposed quantity of cement, coarse aggregate and fine aggregate in one cubic meter of fully compacted concrete together with the corresponding information on water/cement ratio required and the magnitude of slump to be expected.

c) Information on crushing strengths of cubes from at least 100 previous samples of concrete (mostly applicable to ready mix concrete) made using the same aggregate quality, mix proportions, cement content and water/cement ratio as mix proposed at (b) above. OR

If this information is not available or considered unreliable, results of 20 cube tests from trial mixes prepared using the mix design proposed at (B) above and the value of standard deviation expected or assumed in the mix design.

The above procedure for initial verification of likelihood of the proposed mix complying with specified requirements shall not in any way relieve the contractor of his responsibility to supply concrete of specified quality.
6.4 Equipment to be made available on site:

a) A large scoop capable of holding about 5kg of concrete.

b) Three buckets each capable of holding about 25kg of concrete or a wheelbarrow to collect samples.

c) 50X50X7cm. deep sampling tray.

d) 45X45X2cms thick plywood board faced with a thin GI sheet on top.

e) 8 No. 15X15X15cms (internal) steel mold complying in all respects with the requirements of BS 1881 part 108 for making test cubes complete with standard compacting bar 1.8kg weight, 380mm long with a 25mm square ramming face.

f) 10X20X30cms high slump cone complete with 16mm diameter 600mm long tamping rod rounded at both ends.

g) Lockable GI curing tank of dimensions 100X100X50cms.

6.5 Frequency of Sampling

Random samples must be taken for testing and the site engineer must exercise careful engineering judgement on how frequent samples need to be taken from the concrete intended to be placed in the works. However, as a general guide, it can be said that at least one sample must be taken from every 10 cubic meters of concrete placed in columns and one sample for every 20 cubic meters for other structural elements. Notwithstanding this general guide, samples must be taken more frequently for testing the slump, making cubes and in some instances to be sent to a laboratory for chemical tests when the “Director of Works” or the Division Head or the Resident Site Engineer considers it necessary to check the correctness of the mix.

If as a result of visual inspection of a batch of concrete, the Resident Site Engineer has reason to believe that the quality of the concrete may be below the specified standard, the Resident Site engineer shall express his views to the contractor, record his views in writing to the contractor and take at least two separate concrete samples from the batch. Quantity of concrete in each sample must be sufficient to make four concrete test cubes, one slump test and for any laboratory tests for chemical analysis considered necessary under certain circumstances.

6.6 Procedure for numbering and testing concrete cubes

Four test cubes shall be made from each concrete sample. The test cubes made from start to completion of concrete works must be numbered in sequence as (1A, 1B), (2A, 2B), (3A, 3B), (4A, 4B), ... and so on. Cubes 1A, 1B, 2A, 2B will be from the first sample of concrete, 3A, 3B, 4A, 4B from second sample and so on.

Records of cubes must be kept on site in the form of a “Quality Control Report”. See Appendix 1 for specimen form. At the end of every week in which concreting has taken place, a copy of this report must be forwarded to the “Director of Works” through the Division Head. This record is in addition to the regular “weekly reports” forwarded by the Resident Site Engineers.

Cubes bearing odd numbers (1A, 1B, 3A, 3B, etc.) are to be tested at 7 days and those bearing even numbers (2A, 2B, 4A, 4B, etc.) are to be tested at 28 days. The average of the two results from same sample is taken to be the “Test Result” i.e. average of (1A, 1B), (3A, 3B) etc. is the “7 day Test Result” and average of (2A, 2B), (4A, 4B) etc. is the “28 day Test Result”.

6.7 Test Reports forwarded by Testing Laboratories

Testing laboratories must be requested to forward the test reports direct to the Director of Works. The Director of Works, after perusal, should transmit the test reports to the Division Head and Resident Site Engineer for appropriate action and completion of the quality control report.

Quality control reports and laboratory test reports and any correspondence relating only to test results must be kept in the Field ECSD in a separate folder for each project to enable quick verification. These
records must not be filed amongst other correspondence related to the project but may be kept in a separate folder attached to the project file. Resident Site Engineers must maintain records separately until the end of the project. ECSD, HQ (A) staff visiting the fields will monitor these site records from time to time.

6.8 Criteria for Assessment of Compliance with Specified Strength

Compliance with specified strength shall be assumed if both the following conditions are met:

- The average of four consecutive “28 day Test Results” exceeds the specified strength by 3 N/mm² (30kg/cm²) and
- The strength shown by any “28 day Test Result” is not less than the specified strength minus 3 N/mm² (30kg/cm²).
<table>
<thead>
<tr>
<th>Test Cube No.</th>
<th>Date Cast (if recorded)</th>
<th>Slump</th>
<th>Date Tested</th>
<th>Age (Days)</th>
<th>Lab Result</th>
<th>The Test Result</th>
<th>Location of Concrete represented by cubes in the structure</th>
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</table>
# 6.9 Checklist for Engineering Test

The following table provides a comprehensive checklist for engineering tests. Each test category is detailed with specific requirements and references to standards. The table includes columns for the task, description, test method, and any additional notes or references.

<table>
<thead>
<tr>
<th>No.</th>
<th>Task Description</th>
<th>Test Method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Concrete Curb Slab</td>
<td>Compressive Strength Test</td>
<td>At least 28 days according to the laboratory.</td>
</tr>
<tr>
<td>2</td>
<td>Concrete Mould</td>
<td>Compressive Strength Test</td>
<td>Confirm strength in accordance with local standards.</td>
</tr>
<tr>
<td>3</td>
<td>Concrete Mould</td>
<td>Flexural Strength</td>
<td>Confirm strength in accordance with local standards.</td>
</tr>
<tr>
<td>4</td>
<td>Concrete Mould</td>
<td>Tensile Strength</td>
<td>Confirm strength in accordance with local standards.</td>
</tr>
<tr>
<td>5</td>
<td>Concrete Mould</td>
<td>Compressive Strength Test</td>
<td>At least 28 days according to the laboratory.</td>
</tr>
<tr>
<td>6</td>
<td>Concrete Mould</td>
<td>Flexural Strength</td>
<td>Confirm strength in accordance with local standards.</td>
</tr>
<tr>
<td>7</td>
<td>Concrete Mould</td>
<td>Tensile Strength</td>
<td>Confirm strength in accordance with local standards.</td>
</tr>
<tr>
<td>8</td>
<td>Concrete Mould</td>
<td>Compressive Strength Test</td>
<td>At least 28 days according to the laboratory.</td>
</tr>
<tr>
<td>9</td>
<td>Concrete Mould</td>
<td>Flexural Strength</td>
<td>Confirm strength in accordance with local standards.</td>
</tr>
<tr>
<td>10</td>
<td>Concrete Mould</td>
<td>Tensile Strength</td>
<td>Confirm strength in accordance with local standards.</td>
</tr>
</tbody>
</table>

**Certified by:**

[Signature]

[Name]

[Position]

[Organization]

[Date]
# SECTION 5: EVALUATION CRITERIA

## Mandatory Evaluation Criteria

The vendor should satisfy itself that the following information as requested has been provided. If evidence of such information is required, the vendor must provide the evidence so requested. The vendors technical offer will be marked on *pass or fail* method. If a vendor fails any of the mandatory requirements, its Bid will be rejected and not considered for further evaluation.

<table>
<thead>
<tr>
<th>S.N</th>
<th>Criteria</th>
<th>Examples of required documents</th>
</tr>
</thead>
</table>
| 1. | The contractors that can participate in this tender are Contractors must have a valid registration with the Ministry of Public Works and Housing - Jordan (MPWH) as follows:  
   a. For Zarqa Area & Wadi Al Seer training center projects, a Minimum 5th Grade Classification in Building Construction or minimum 5th Grade contractors for Building Maintenance. The Bidder should provide Valid Company Registration Certificate for the year 2022 from Ministry of Public Work and Housing - Jordan (MPWH registration).  
   b. For North Amman Area project, a Minimum 5th Grade Classification in Building Construction or minimum 4th Grade contractors for Building Maintenance. The Bidder should provide Valid Company Registration Certificate for the year 2022 from the Ministry of Public Work and Housing - Jordan (MPWH registration). | Vendor to provide the valid copy of the certificate from MPWH to prove that the company is registered at the right level and classification. |
<p>| 2. | Vendors Experience: The bidder must provide at least one past similar project (magnitude and complexity) carried out by the contractor and certified by the Jordanian Construction Contractors Association (JCCA) indicating similar projects. By magnitude and complexity, UNRWA means that the vendor must have completed at least one building maintenance project or one construction project of not less than JOD 20,000. | Vendor must provide certificate of completion of the past projects or certified of projects that the vendor has executed in the past. Please provide list certified by the Jordanian Construction Contractors Association (JCCA) |
| 3. | Past Performance: The Bidder must provide three documented evidence/certificate of satisfactory completion of similar projects or related projects from clients, each letter should be signed and stamped by client. | Reference / Recommendation letters for similar or related projects in terms of complexity and magnitude. |
| 4. | On-going projects: Provide all ongoing projects that are currently carried out by the contractors and values of these projects and date of completion | The bidder must provide the authentic list of the ongoing projects his company is handling at the moment. Please use template in Appendix No. 2 while submitting each on-going project. UNRWA reserves the right to check the authenticity of the provided information. If on checking UNRWA establishes that the information submitted is not correct, then the vendor’s offer may be rejected. |
| 5. | Submission of the solvency form fully filled and stamped by the Vendors bankers. | Submission of the acceptable solvency form with all points submitted. UNRWA reserves the right to reject the vendors offer if the vendor has not submitted the solvency form or if the submitted solvency form submitted does not have all the listed points, the vendor’s offer may be rejected. Use the solvency form in Appendix 1 while submitting your solvency status. |</p>
<table>
<thead>
<tr>
<th></th>
<th><strong>United Nations Relief and Works Agency for Palestine Refugees in the Near East</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Commercial registration record and Valid Profession License.</td>
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<tr>
<td></td>
<td>Vendor to attach the copies of the Commercial registration record and Professional license</td>
</tr>
<tr>
<td>7.</td>
<td><strong>Bid Bond</strong>: Bidders shall submit in their bid an irrevocable and unconditional Bid Bond, at their own cost. The Bid Bond shall be in a sum of 5% of the total value of the bid and valid for duration of <strong>120 days</strong> after the closing date of the tender. The Bid Bond will be returned to unsuccessful vendors once the contract resulting from has been awarded. The Bid Bond will be returned to the successful bidder once the contract is signed and the performance bond submitted to UNRWA.</td>
</tr>
<tr>
<td></td>
<td>Vendor to Submit a bid bond from its bankers. The bid bonds less than 5% of the bidders’ financial offer and the validity less than 120 days will not be accepted. Bankers’ cheques will not be acceptable. Please use format attached in <strong>Form J: Bid Bond</strong></td>
</tr>
</tbody>
</table>

*Failure to comply with any of the mandatory criteria will lead to disqualification*
SOLVENCY FORM

I confirm that I have submitted the solvency form from my Bankers as attached. The solvency form I have attached contains all the information as requested.

Company Name: ____________________________________________________________

Name of Company Representative: ____________________________________________

Signature: __________________________________________________________________
بيان الملاءة المالية للمقاولين

يشهد بنك ............................... أن المقاول/اسم الشركة ............................ الموْسُسَة في
عام........................................ هو عميل
لدينا
منذ العام  ................
وفيما يلي البيانات والمعلومات المتوفرة لدينا عن العميل:

1. تفاصيل التسهيلات الممنوحة للمقاول وأرصدتها المستعملة كمعدل سنوي حتى تاريخه.
   قيمة التسهيلات الممنوحة :
   أ. أقل من (100) ألف دينار أردني
   ب. من (100) ألف – (500) ألف دينار أردني
   ت. من (500) ألف – (1) مليون دينار أردني
   ث. أكثر من (1) مليون دينار أردني

2. هل واجه المقاول صعوبات مع البنك:
   أ. في تسديد التزاماته؟
   ب. متى كانت آخر هذه الصعوبات؟
   ت. ما هو سبب هذه الصعوبات؟ يرجى الإشارة إذا كانت هناك أرصدة تسهيلات مستحقة وغير مدفوعة
   مترتبة عليه؟

3. هل سبق وأن صدرت للمقاول كفالات على حساب المشاريع خلال السنوات الثلاث الأخيرة؟ ما
   سبب ذلك؟ متى؟ لصالح أية جهة؟

4. ملاحظات البنك على الوضع المالي للمقاول بشكل عام وعلى حركة حساباته.

5. أية ملاحظات أخرى عن المقاول ترونها ضرورية.

6. حجم التسهيلات التي يمكن أن تمنح للمقاول سنوياً.
APPENDIX 2

Information format for each project Completed Project or Ongoing Project

Project name : --------------------------------------------------------------

Location : --------------------------------------------------------------

Name of client : --------------------------------------------------------------

Client contact (name, address, current telephone, fax, email) --------------------------------------------------------------

Contract value, Jordanian dinar

Base contract Amount --------------------------------------------------------------

Amount of Amendments to contract --------------------------------------------------------------

Project dates

Date started --------------------------------------------------------------

Date completed or when the contract will be completed --------------------------------------------------------------

Planned contractual duration --------------------------------------------------------------

Project Manager --------------------------------------------------------------

Site supervisor(s) --------------------------------------------------------------

Role of firm: Is your company a main contractor (indicate yes or No) Are you a subcontractor Yes/No

Brief description of the project --------------------------------------------------------------

Points of similarity to current Contract: --------------------------------------------------------------
SECTION 6: CONDITIONS OF CONTRACT AND CONTRACT FORMS

6.1 General Conditions of Contract

In the event of a Contract, it will be subject to UNRWA’s General Conditions of Contract (GCC) which are available on the UNRWA website: https://www.unrwa.org/procurement/how-we-operate.
1. **EFFECTIVE DATE:** This Contract shall be effective when signed by the Parties. The Contract constitutes a contract between the Parties, the rights and obligations of which shall be governed solely by the terms and conditions of the Contract, including these General Conditions.

2. **LEGAL STATUS OF THE PARTIES:** UNRWA and the Contractor shall also each be referred to as a ‘Party’ hereunder, and:

   2.1 Pursuant, *inter alia*, to the Charter of the United Nations and the Convention on the Privileges and Immunities of the United Nations, the United Nations, including its subsidiary organs (including UNRWA) has full juridical personality and enjoys such privileges and immunities as are necessary for the independent fulfillment of its purposes.

   2.2 The Contractor shall have the legal status of an independent contractor vis-a-vis UNRWA, and nothing contained in or relating to the Contract shall be construed as establishing or creating between the Parties the relationship of employer and employee or of principal and agent. The officials, representatives, employees, or subcontractors of each of the Parties shall not be considered in any respect as being the employees or agents of the other Party, and each Party shall be solely responsible for all claims arising out of or relating to its engagement of such persons or entities.

3. **SOURCE OF INSTRUCTIONS:** The Contractor shall neither seek nor accept instructions from any authority external to UNRWA in connection with the performance of its obligations under the Contract. Should any authority external to UNRWA seek to impose any instructions concerning or restrictions on the Contractor’s performance under the Contract, the Contractor shall promptly notify UNRWA and provide all reasonable assistance required by UNRWA. The Contractor shall not take any action in respect of the performance of its obligations under the Contract that may adversely affect the interests of UNRWA, and the Contractor shall perform its obligations under the Contract with the fullest regard to the interests of UNRWA.

4. **RESPONSIBILITY FOR EMPLOYEES:** To the extent that the Contract involves the provision of any services to UNRWA by the Contractor’s officials, employees, agents, servants, subcontractors, and other representatives (collectively, the Contractor’s “personnel”), the following provisions shall apply:

   4.1 The services shall be delivered in a professional and workmanlike manner in accordance with the terms and conditions of this Contract. The Contractor shall conduct its operations with due diligence and efficiency, in accordance with sound technical, financial and managerial standards and practices.

   4.2 The Contractor shall be responsible for the professional and technical competence of the personnel it assigns to perform work under the Contract and will select reliable and competent individuals who will be able to effectively perform the obligations under the Contract and who, while doing so, will respect the local laws and customs and conform to a high standard of moral and ethical conduct.

   4.3 Such Contractor personnel shall be professionally qualified and, if required to work with officials or staff of UNRWA, shall be able to do so effectively. The qualifications of any personnel whom the Contractor may assign or may propose to assign to perform any obligations under the Contract shall be substantially the same, or better, as the qualifications of any personnel originally proposed by the Contractor.

   4.4 At the option of and in the sole discretion of UNRWA:

      4.4.1 the qualifications of personnel proposed by the Contractor (e.g., a curriculum vitae) may be reviewed by UNRWA prior to such personnel’s performing any obligations under the Contract;

      4.4.2 any personnel proposed by the Contractor to perform obligations under the Contract may be interviewed by qualified staff or officials of UNRWA prior to such personnel’s performing any obligations under the Contract; and,

      4.4.3 in cases in which, pursuant to Article 4.4.1 or 4.4.2, above, UNRWA has reviewed the qualifications of such Contractor’s personnel, UNRWA may reasonably refuse to accept any such personnel.

4.5 Requirements specified in the Contract regarding the number or qualifications of the Contractor’s personnel may change during the course of performance of the Contract. Any such change shall be made only following written notice of such proposed change and upon written agreement between the Parties regarding such change, subject to the following:

   4.5.1 UNRWA may, at any time, request, in writing, the withdrawal or replacement of any of the Contractor’s personnel, and such request shall not be unreasonably refused by the Contractor.

   4.5.2 Any of the Contractor’s personnel assigned to perform obligations under the Contract shall not be withdrawn or replaced without the prior written consent of UNRWA, which shall not be unreasonably withheld.

   4.5.3 The withdrawal or replacement of the Contractor’s personnel shall be carried out as quickly as possible and in a manner that will not adversely affect the performance of obligations under the Contract.
4.5.4 All expenses related to the withdrawal or replacement of the Contractor’s personnel shall, in all cases, be borne exclusively by the Contractor.

4.5.5 Any request by UNRWA for the withdrawal or replacement of the Contractor’s personnel shall not be considered to be a termination, in whole or in part, of the Contract, and UNRWA shall not bear any liability in respect of such withdrawn or replaced personnel.

4.5.6 If a request for the withdrawal or replacement of the Contractor’s personnel is not based upon a default by or failure on the part of the Contractor to perform its obligations in accordance with the Contract, the misconduct of the personnel, or the inability of such personnel to reasonably work together with UNRWA officials and staff, then the Contractor shall not be liable by reason of any such request for the withdrawal or replacement of the Contractor’s personnel for any delay in the performance by the Contractor of its obligations under the Contract that is substantially the result of such personnel’s being withdrawn or replaced.

4.6 Nothing in Articles 4.3, 4.4 and 4.5, above, shall be construed to create any obligations on the part of UNRWA with respect to the Contractor’s personnel assigned to perform work under the Contract, and such personnel shall remain the sole responsibility of the Contractor.

4.7 The Contractor shall be responsible for requiring that all personnel assigned by it to perform any obligations under the Contract and who may have access to any premises or other property of UNRWA shall:

4.7.1 undergo or comply with security screening requirements made known to the Contractor by UNRWA, including but not limited to, a review of any criminal history;

4.7.2 when within UNRWA premises or on UNRWA property, display such identification as may be approved and furnished by UNRWA security officials, and that upon the withdrawal or replacement of any such personnel or upon termination or completion of the Contract, such personnel shall immediately return any such identification to UNRWA for cancellation.

4.8 Not less than one working day after learning that any of Contractor’s personnel who have access to any UNRWA premises have been charged by law enforcement authorities with an offense other than a minor traffic offense, the Contractor shall provide written notice to inform UNRWA about the particulars of the charges then known and shall continue to inform UNRWA concerning all substantial developments regarding the disposition of such charges.

4.9 All operations of the Contractor, including without limitation, storage of equipment, materials, supplies and parts, within UNRWA premises or on UNRWA property shall be confined to areas authorized or approved by UNRWA. The Contractor’s personnel shall not enter or pass through and shall not store or dispose of any of its equipment or materials in any areas within UNRWA premises or on UNRWA property without appropriate authorization from UNRWA.

5. ASSIGNMENT; SUBCONTRACTING:

5.1 Except as provided in Article 5.2, below, the Contractor may not assign, transfer, pledge, subcontract or make any other disposition of the Contract, of any part of the Contract, or of any of the rights, claims or obligations under the Contract except with the prior written authorization of UNRWA. Any such unauthorized assignment, transfer, pledge, subcontracting or other disposition, or any attempt to do so, shall not be binding on UNRWA. Except as permitted with respect to any approved subcontractors, the Contractor shall not delegate any of its obligations under the Contract, except with the prior written consent of UNRWA. Any such unauthorized delegation, or attempt to do so, shall not be binding on UNRWA.

5.2 The Contractor may assign or otherwise transfer the Contract to the surviving entity resulting from a reorganization of the Contractor’s operations, provided that:

5.2.1 such reorganization is not the result of any bankruptcy, receivership or other similar proceedings; and,

5.2.2 such reorganization arises from a sale, merger, or acquisition of all or substantially all of the Contractor’s assets or ownership interests; and,

5.2.3 the Contractor promptly notifies UNRWA about such assignment or transfer at the earliest opportunity; and,

5.2.4 the assignee or transferee agrees in writing to be bound by all of the terms and conditions of the Contract, and such writing is promptly provided to UNRWA following the assignment or transfer.

6. INDEMNIFICATION:

6.1 The Contractor shall indemnify, defend, and hold save harmless, UNRWA, and its officials, agents and employees, from and against all suits, proceedings, claims, demands, losses and liability of any kind or nature brought by any third party against UNRWA, including, but not limited to, all litigation costs and expenses, attorney’s fees, settlement payments and damages, based on, arising from, or relating to:

6.1.1 allegations or claims that the possession of or use by UNRWA of any patented device, any copyrighted material, or any other goods, property or services provided or licensed to UNRWA under the terms of the Contract, in whole or in part, separately or in a combination contemplated by the Contractor’s published specifications therefor, or otherwise specifically
approved by the Contractor, constitutes an infringement of any patent, copyright, trademark, or other intellectual property right of any third party; or,

6.1.2 any acts or omissions of the Contractor, or of any subcontractor or anyone directly or indirectly employed by them in the performance of the Contract, which give rise to legal liability to anyone not a party to the Contract, including, without limitation, claims and liability in the nature of a claim for workers’ compensation.

6.2 In addition to the indemnity obligations set forth in this Article 6, the Contractor shall be obligated, at its sole expense, to defend UNRWA and its officials, agents and employees, pursuant to this Article 6, regardless of whether the suits, proceedings, claims and demands in question actually give rise to or otherwise result in any loss or liability.

6.3 UNRWA shall advise the Contractor about any such suits, proceedings, claims, demands, losses or liability within a reasonable period of time after having received actual notice thereof. The Contractor shall have sole control of the defense of any such suit, proceeding, claim or demand and of all negotiations in connection with the settlement or compromise thereof, except with respect to the assertion or defense of the privileges and immunities of UNRWA or any matter relating thereto, for which only UNRWA itself is authorized to assert and maintain. UNRWA shall have the right, at its own expense, to be represented in any such suit, proceeding, claim or demand by independent counsel of its own choosing.

6.4 In the event the use by UNRWA of any goods, property or services provided or licensed to UNRWA by the Contractor, in whole or in part, in any suit or proceeding, is for any reason enjoined, temporarily or permanently, or is found to infringe any patent, copyright, trademark or other intellectual property right, or in the event of a settlement, is enjoined, limited or otherwise interfered with, then the Contractor, at its sole cost and expense, shall, promptly, either:

6.4.1 procure for UNRWA the unrestricted right to continue using such goods or services provided to UNRWA; or,

6.4.2 replace or modify the goods or services provided to UNRWA, or part thereof, with the equivalent or better goods or services, or part thereof, that is non-infringing; or,

6.4.3 refund to UNRWA the full price paid by UNRWA for the right to have or use such goods, property or services, or part thereof.

7. INSURANCE AND LIABILITY:

7.1 The Contractor shall pay UNRWA promptly for all loss, destruction, or damage to the property of UNRWA caused by the Contractor’s personnel or by any of its subcontractors or anyone else directly or indirectly employed by the Contractor or any of its subcontractors in the performance of the Contract.

7.2 Unless otherwise provided in the Contract, prior to commencement of performance of any other obligations under the Contract, and subject to any limits set forth in the Contract, the Contractor shall take out and shall maintain for the entire term of the Contract, for any extension thereof, and for a period following any termination of the Contract reasonably adequate to deal with losses:

7.2.1 insurance against all risks in respect of its property and any equipment used for the performance of the Contract; and,

7.2.2 workers’ compensation insurance, or its equivalent, or employer’s liability insurance, or its equivalent, with respect to the Contractor’s personnel sufficient to cover all claims for injury, death and disability, or any other benefits required to be paid by law, in connection with the performance of the Contract; and,

7.2.3 liability insurance in an adequate amount to cover all claims, including, but not limited to, claims for death and bodily injury, products and completed operations liability, loss of or damage to property, and personal and advertising injury, arising from or in connection with the Contractor’s performance under the Contract, including, but not limited to, liability arising out of or in connection with the acts or omissions of the Contractor, its personnel, agents, or invitees, or the use, during the performance of the Contract, of any vehicles, boats, airplanes or other transportation vehicles and equipment, whether or not owned by the Contractor; and,

7.2.4 such other insurance as may be agreed upon in writing between UNRWA and the Contractor.

7.3 The Contractor’s liability policies shall also cover subcontractors and all defense costs and shall contain a standard “cross liability” clause.

7.4 The Contractor acknowledges and agrees that UNRWA accepts no responsibility for providing life, health, accident, travel or any other insurance coverage which may be necessary or desirable in respect of any personnel performing services for the Contractor in connection with the Contract.

7.5 Except for the workers’ compensation insurance or any self-insurance program maintained by the Contractor and approved by UNRWA, in its sole discretion, for purposes of fulfilling the Contractor’s requirements for providing insurance under the Contract, the insurance policies required under the Contract shall:

7.5.1 name UNRWA as an additional insured under the liability policies, including, if required, as a separate endorsement under the policy; and,
7.5.2 include a waiver of subrogation of the Contractor’s insurance carrier’s rights against UNRWA; and,

7.5.3 provide that UNRWA shall receive written notice from the Contractor’s insurance carrier not less than thirty (30) days prior to any cancellation or material change of coverage; and,

7.5.4 include a provision for response on a primary and non-contributing basis with respect to any other insurance that may be available to UNRWA.

7.6 The Contractor shall be responsible to fund all amounts within any policy deductible or retentions.

7.7 Except for any self-insurance program maintained by the Contractor and approved by UNRWA for purposes of fulfilling the Contractor’s requirements for maintaining insurance under the Contract, the Contractor shall maintain the insurance taken out under the Contract with reputable insurers that are in good financial standing and that are acceptable to UNRWA. Prior to the commencement of any obligations under the Contract, the Contractor shall provide UNRWA with evidence, in the form of certificate of insurance or such other form as UNRWA may reasonably require, that demonstrates that the Contractor has taken out insurance in accordance with the requirements of the Contract. UNRWA reserves the right, upon written notice to the Contractor, to obtain copies of any insurance policies or insurance program descriptions required to be maintained by the Contractor under the Contract. Notwithstanding the provisions of Article 7.5.3, above, the Contractor shall promptly notify UNRWA concerning any cancellation or material change of insurance coverage required under the Contract.

7.8 The Contractor acknowledges and agrees that neither the requirement for taking out and maintaining insurance as set forth in the Contract nor the amount of any such insurance, including, but not limited to, any deductible or retention relating thereto, shall in any way be construed as limiting the Contractor’s liability arising under or relating to the Contract.

8. ENCUMBRANCES AND LIENS: The Contractor shall not cause or permit any lien, attachment or other encumbrance by any person to be placed on file or to remain on file in any public office or on file with UNRWA against any monies due to the Contractor or that may become due for any work done or against any goods supplied or materials furnished under the Contract, or by reason of any other claim or demand against the Contractor or UNRWA.

9. EQUIPMENT FURNISHED BY UNRWA TO THE CONTRACTOR: Title to any equipment and supplies that may be furnished by UNRWA to the Contractor for the performance of any obligations under the Contract shall rest with UNRWA, and any such equipment shall be returned to UNRWA at the conclusion of the Contract or when no longer needed by the Contractor. Such equipment, when returned to UNRWA, shall be in the same condition as when delivered to the Contractor, subject to normal wear and tear, and the Contractor shall be liable to compensate UNRWA for the actual costs of any loss of, damage to, or degradation of the equipment that is beyond normal wear and tear.

10. COPYRIGHT, PATENTS AND OTHER PROPRIETARY RIGHTS:

10.1 Except as is otherwise expressly provided in writing in the Contract, all right, title and interest, including copyrights, in all works and other materials, whether in written or electronic form and including all derivative works thereof, produced in the performance of this Contract shall be vested exclusively in, and the Contractor shall without further consideration assign, whether as works for hire or otherwise, the same to, UNRWA.

10.2 To the extent that any such intellectual property or other proprietary rights consist of any intellectual property or other proprietary rights of the Contractor: (i) that pre-existed the performance by the Contractor of its obligations under the Contract, or (ii) that the Contractor may develop or acquire, or may have developed or acquired, independently of the performance of its obligations under the Contract, UNRWA does not and shall not claim any ownership interest thereto, and the Contractor grants to UNRWA a perpetual license to use such intellectual property or other proprietary right solely for the purposes of and in accordance with the requirements of the Contract.

10.3 At the request of UNRWA, the Contractor shall take all necessary steps, execute all necessary documents and generally assist in securing such proprietary rights and transferring or licensing them to UNRWA in compliance with the requirements of the applicable law and of the Contract.

10.4 Subject to the foregoing provisions, all maps, drawings, photographs, mosaics, plans, reports, estimates, recommendations, documents, and all other data compiled by or received by the Contractor under the Contract shall be the property of UNRWA, shall be made available for use or inspection by UNRWA at reasonable times and in reasonable places, shall be treated as confidential, and shall be delivered only to UNRWA authorized officials on completion of work under the Contract.

11. PUBLICITY, AND USE OF THE NAME, EMBLEM OR OFFICIAL SEAL OF THE UNITED NATIONS OR UNRWA: The Contractor shall not advertise or otherwise make public for purposes of commercial advantage or goodwill that it has a contractual relationship with UNRWA, nor shall the Contractor, in any manner whatsoever use the name, emblem or official seal of the United Nations or UNRWA, or any abbreviation of the name of the United Nations or UNRWA in connection with its business or otherwise without the written permission of UNRWA.

12. CONFIDENTIAL NATURE OF DOCUMENTS AND INFORMATION: Information and data that is considered proprietary by either Party or that is delivered or disclosed...
by one Party ("Discloser") to the other Party ("Recipient") during the course of performance of the Contract, and that is designated as confidential ("Information"), shall be held in confidence by that Party and shall be handled as follows:

12.1 The recipient ("Recipient") of such Information shall:

12.1.1 use the same care and discretion to avoid disclosure, publication or dissemination of the Discloser’s Information as it uses with its own similar Information that it does not wish to disclose, publish or disseminate; and,

12.1.2 use the Discloser’s Information solely for the purpose for which it was disclosed.

12.2 The Contractor may disclose Information to the extent required by law. In circumstances where, subject to and without any waiver of the privileges and immunities of UNRWA, the Contractor will give UNRWA sufficient prior notice of a request for the disclosure of Information in order to allow UNRWA to have a reasonable opportunity to take protective measures or such other action as may be appropriate before any such disclosure is made.

12.3 UNRWA may disclose Information to the extent as required pursuant to the Charter of the United Nations, or pursuant to resolutions or regulations of the General Assembly or rules promulgated thereunder.

12.4 The Recipient shall not be precluded from disclosing Information that is obtained by the Recipient from a third party without restriction, is disclosed by the Discloser to a third party without any obligation of confidentiality, is previously known by the Recipient, or at any time is developed by the Recipient completely independently of any disclosures hereunder.

12.5 These obligations and restrictions of confidentiality shall be effective during the term of the Contract, including any extension thereof, and, unless otherwise provided in the Contract, shall remain effective following any termination of the Contract.

13. FORCE MAJEURE; OTHER CHANGES IN CONDITIONS:

13.1 In the event of and as soon as possible after the occurrence of any cause constituting force majeure, the affected Party shall give notice and full particulars in writing to the other Party, of such occurrence or cause if the affected Party is thereby rendered unable, wholly or in part, to perform its obligations and meet its responsibilities under the Contract. The affected Party shall also notify the other Party of any other changes in condition or the occurrence of any event which interferes or threatens to interfere with its performance of the Contract. Not more than fifteen (15) days following the provision of such notice of force majeure or other changes in condition or occurrence, the affected Party shall also submit a statement to the other Party of estimated expenditures that will likely be incurred for the duration of the change in condition or the event of force majeure. On receipt of the notice or notices required hereunder, the Party not affected by the occurrence of a cause constituting force majeure shall take such action as it reasonably considers to be appropriate or necessary in the circumstances, including the granting to the affected Party of a reasonable extension of time in which to perform any obligations under the Contract.

13.2 If the Contractor is rendered unable, wholly or in part, by reason of force majeure to perform its obligations and meet its responsibilities under the Contract, UNRWA shall have the right to suspend or terminate the Contract on the same terms and conditions as are provided for in Article 14, “Termination,” except that the period of notice shall be seven (7) days instead of thirty (30) days. In any case, UNRWA shall be entitled to consider the Contractor permanently unable to perform its obligations under the Contract in case the Contractor is unable to perform its obligations, wholly or in part, by reason of force majeure for any period in excess of ninety (90) days.

13.3 Force majeure as used herein means any unforeseeable and irresistible act of nature, any act of war (whether declared or not), invasion, revolution, insurrection, terrorism, or any other acts of a similar nature or force, provided that such acts arise from causes beyond the control and without the fault or negligence of the Contractor. The Contractor acknowledges and agrees that, with respect to any obligations under the Contract that the Contractor must perform in areas in which UNRWA is engaged in, preparing to engage in, or disengaging from any operations, any delays or failure to perform such obligations arising from or relating to harsh conditions within such areas, including without limitation closures, strikes and curfews, or to any incidents of civil unrest occurring in such areas, shall not, in and of itself, constitute force majeure under the Contract.

14. TERMINATION:

14.1 Either Party may terminate the Contract for cause, in whole or in part, upon thirty (30) day’s notice, in writing, to the other Party. The initiation of conciliation or arbitral proceedings in accordance with Article 17 “Settlement of Disputes,” below, shall not be deemed to be a “cause” for or otherwise to be in itself a termination of the Contract.

14.2 UNRWA may terminate the Contract at any time by providing written notice to the Contractor in any case in which the mandate of UNRWA applicable to the performance of the Contract or the funding of UNRWA applicable to the Contract is curtailed or terminated, whether in whole or in part. In addition, unless otherwise provided by the Contract, upon sixty (60) day’s advance written notice to the
14.3 In the event of any termination of the Contract, upon receipt of notice of termination that has been issued by UNRWA, the Contractor shall, except as may be directed by UNRWA in the notice of termination or otherwise in writing:

14.3.1 take immediate steps to bring the performance of any obligations under the Contract to a close in a prompt and orderly manner, and in doing so, reduce expenses to a minimum;

14.3.2 refrain from undertaking any further or additional commitments under the Contract as of and following the date of receipt of such notice;

14.3.3 place no further subcontracts or orders for materials, services, or facilities, except as UNRWA and the Contractor agree in writing are necessary to complete any portion of the Contract that is not terminated;

14.3.4 terminate all subcontracts or orders to the extent they relate to the portion of the Contract terminated;

14.3.5 transfer title and deliver to UNRWA the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the portion of the Contract terminated;

14.3.6 deliver all completed or partially completed plans, drawings, information, and other property that, if the Contract had been completed, would be required to be furnished to UNRWA thereunder;

14.3.7 complete performance of the work not terminated; and,

14.3.8 take any other action that may be necessary, or that UNRWA may direct in writing, for the minimization of losses and for the protection and preservation of any property, whether tangible or intangible, related to the Contract that is in the possession of the Contractor and in which UNRWA has or may be reasonably expected to acquire an interest.

14.4 In the event of any termination of the Contract, UNRWA shall be entitled to obtain reasonable written accountings from the Contractor concerning all obligations performed or pending in accordance with the Contract. In addition, UNRWA shall not be liable to pay the Contractor except for, but without prejudice to UNRWA’s rights under Article 15, those goods delivered and services provided to UNRWA in accordance with the requirements of the Contract, but only if such goods or services were ordered, requested or otherwise provided prior to the Contractor’s receipt of notice of termination from UNRWA or prior to the Contractor’s tendering of notice of termination to UNRWA.

14.5 UNRWA may, without prejudice to any other right or remedy available to it, terminate the Contract forthwith in the event that:

14.5.1 the Contractor is adjudged bankrupt, or is liquidated, or becomes insolvent, or applies for a moratorium or stay on any payment or repayment obligations, or applies to be declared insolvent;

14.5.2 the Contractor is granted a moratorium or a stay, or is declared insolvent;

14.5.3 the Contractor makes an assignment for the benefit of one or more of its creditors;

14.5.4 a Receiver is appointed on account of the insolvency of the Contractor;

14.5.5 the Contractor offers a settlement in lieu of bankruptcy or receivership; or,

14.5.6 UNRWA reasonably determines that the Contractor has become subject to a materially adverse change in its financial condition that threatens to substantially affect the ability of the Contractor to perform any of its obligations under the Contract.

14.6 Except as prohibited by law, the Contractor shall be bound to compensate UNRWA for all damages and costs, including, but not limited to, all costs incurred by UNRWA in any legal or non-legal proceedings, as a result of any of the events specified in Article 14.5, above, and resulting from or relating to a termination of the Contract, even if the Contractor is adjudged bankrupt, or is granted a moratorium or stay or is declared insolvent. The Contractor shall immediately inform UNRWA of the occurrence of any of the events specified in Article 14.5, above, and shall provide UNRWA with any information pertinent thereto.

14.7 The provisions of this Article 14 are without prejudice to any other rights or remedies of UNRWA under the Contract or otherwise.

15. REMEDIES OF UNRWA; NON-WAIVER OF RIGHTS:

15.1 In case the Contractor fails to comply with any term of the Contract, the Contractor shall be liable for all damages sustained by UNRWA, and UNRWA may, after giving the Contractor reasonable notice to perform and without prejudice to any other rights or remedies, exercise one or more of the following rights:

15.1.1 procure all or part of the service or related goods from other sources;

15.1.2 refuse to accept delivery of all or part of the services or related goods; or
15.1.3 terminate the Contract in accordance with Article 14.1,

and the Contractor shall be liable by reason of default for any loss or damage sustained and additional costs incurred by UNRWA, including without limitation any increase in the price payable by UNRWA resulting from the procurement of the services from other sources and the costs of engaging in such procurement. UNRWA may, without notice to the Contractor, apply to the payment of any such loss, damage or additional costs, by setoff or otherwise, all credits, claims or other amounts, whether or not related to the Contract, at any time owing by UNRWA to the Contractor.

15.2 If the Contractor fails to complete the services within the time for delivery specified in the Contract, UNRWA may, in its sole discretion and without prejudice to its other remedies under the Contract, deduct from the contract price the amount set forth in the Contract for each calendar day of delay until actual delivery which amount shall in no event be less than one percent of the [delivered price of the delayed services], up to a maximum deduction of ten percent of the contract price.

15.3 The failure by either Party to exercise any rights available to it, whether under the Contract or otherwise, shall not be deemed for any purposes to constitute a waiver by the other Party of any such right or any remedy associated therewith, and shall not relieve the Parties of any of their obligations under the Contract. All remedies afforded in the Contract shall be taken and construed as cumulative, i.e., in addition to every other remedy provided under the Contract and by law.

16. NON-EXCLUSIVITY: Unless otherwise specified in the Contract, UNRWA shall have no obligation to purchase any minimum quantities of goods or services from the Contractor, and UNRWA shall have no limitation on its right to obtain goods or services of the same kind, quality and quantity described in the Contract, from any other source at any time.

17. SETTLEMENT OF DISPUTES:

17.1 AMICABLE SETTLEMENT: The Parties shall use their best efforts to amicably settle any dispute, controversy, or claim arising out of the Contract or the breach, termination, or invalidity thereof, unless settled amicably under Article 17.1 above within sixty (60) days after receipt by one Party of the other Party’s written request for conciliation or mediation, shall be settled by arbitration in accordance with the Permanent Court of Arbitration Optional Rules for Arbitration between International Organizations and Private Parties in force on the date of this Contract (the “PCA Arbitration Rules”). The decisions of the arbitral tribunal shall be based on general principles of international commercial law. The appointing authority shall be designated by the Secretary-General of the Permanent Court of Arbitration following a written request submitted by either Party. The number of arbitrators shall be three, unless the Parties, in the interest of economy of proceedings, agree that there shall be one arbitrator. The place of arbitration shall be Amman, Jordan. The language to be used in the arbitral proceedings shall be English. The arbitrators must be fluent in that language. The arbitral tribunal shall be empowered to take any measures it deems appropriate, including without limitation, ordering the return or destruction of goods or any property, whether tangible or intangible, or of any confidential information provided under the Contract, ordering the termination of the Contract, or ordering that any other protective measures be taken with respect to the goods, services or any other property, whether tangible or intangible, or of any confidential information provided under the Contract, as appropriate, all in accordance with the authority of the arbitral tribunal pursuant to the PCA Arbitration Rules. The arbitral tribunal shall have no authority to award punitive damages. In addition, unless otherwise expressly provided in the Contract, the arbitral tribunal shall have no authority to award interest in excess of the London Inter-Bank Offered Rate (“LIBOR”) then prevailing, and any such interest shall be simple interest only. The Parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of any such dispute, controversy, or claim.

17.2 ARBITRATION: Any dispute, controversy, or claim between the Parties arising out of or relating to the Contract or the breach, termination, or invalidity thereof, unless settled amicably under Article 17.1 above within sixty (60) days after receipt by one Party of the other Party’s written request for conciliation or mediation, shall be settled by arbitration in accordance with the Permanent Court of Arbitration Optional Rules for Arbitration between International Organizations and Private Parties in force on the date of this Contract (the “PCA Arbitration Rules”). The decisions of the arbitral tribunal shall be based on general principles of international commercial law. The appointing authority shall be designated by the Secretary-General of the Permanent Court of Arbitration following a written request submitted by either Party. The number of arbitrators shall be three, unless the Parties, in the interest of economy of proceedings, agree that there shall be one arbitrator. The place of arbitration shall be Amman, Jordan. The language to be used in the arbitral proceedings shall be English. The arbitrators must be fluent in that language. The arbitral tribunal shall be empowered to take any measures it deems appropriate, including without limitation, ordering the return or destruction of goods or any property, whether tangible or intangible, or of any confidential information provided under the Contract, ordering the termination of the Contract, or ordering that any other protective measures be taken with respect to the goods, services or any other property, whether tangible or intangible, or of any confidential information provided under the Contract, as appropriate, all in accordance with the authority of the arbitral tribunal pursuant to the PCA Arbitration Rules. The arbitral tribunal shall have no authority to award punitive damages. In addition, unless otherwise expressly provided in the Contract, the arbitral tribunal shall have no authority to award interest in excess of the London Inter-Bank Offered Rate (“LIBOR”) then prevailing, and any such interest shall be simple interest only. The Parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of any such dispute, controversy, or claim.

18. PRIVILEGES AND IMMUNITIES: Nothing in or relating to the Contract shall be deemed a waiver, express or implied, of any of the privileges and immunities accorded to UNRWA in international law.

19. TAX EXEMPTION:

19.1 Article II, Section 7, of the Convention on the Privileges and Immunities of the United Nations provides, inter alia, that the United Nations, including its subsidiary organs (including UNRWA), is exempt from all direct taxes, except charges for public utility services, and is exempt from customs restrictions, duties, and charges of a similar nature in respect of articles imported or exported for its official use. In the event any governmental authority refuses to recognize the exemptions of UNRWA from such taxes, restrictions, duties, or charges, the Contractor...
shall immediately consult with UNRWA to determine a mutually acceptable procedure.

19.2 The Contractor authorizes UNRWA to deduct from the Contractor’s invoices any amount representing such taxes, duties or charges, unless the Contractor has consulted with UNRWA before the payment thereof and UNRWA has, in each instance, specifically authorized the Contractor to pay such taxes, duties, or charges under written protest. In that event, the Contractor shall provide UNRWA with written evidence that payment of such taxes, duties or charges has been made and appropriately authorized, and UNRWA shall reimburse the Contractor for any such taxes, duties, or charges so authorized by UNRWA and paid by the Contractor under written protest.

20. OBSERVANCE OF THE LAW: The Contractor shall comply with all laws, ordinances, rules, and regulations bearing upon the performance of its obligations under the Contract. In addition, the Contractor shall maintain compliance with all obligations relating to its registration as a qualified vendor of goods or services to UNRWA, as such obligations are set forth in UNRWA vendor registration procedures.

21. MODIFICATIONS:

21.1 Only the Chief, Procurement and Logistics Division, or, for local contracts, the Field Office Director in each of UNRWA’s fields of operation, or such other contracting authority as UNRWA has made known to the Contractor in writing, possesses the authority to agree on behalf of UNRWA to any modification of or change in the Contract, to a waiver of any of its provisions or to any additional contractual relationship of any kind with the Contractor. Accordingly, no modification or change in the Contract shall be valid and enforceable against UNRWA unless provided by a valid written amendment to the Contract signed by the Contractor and the Chief, Procurement and Logistics Division, or the Field Office Director (for local contracts), or such other contracting authority.

21.2 If the Contract shall be extended for additional periods in accordance with the terms and conditions of the Contract, the terms and conditions applicable to any such extended term of the Contract shall be the same terms and conditions as set forth in the Contract, unless the Parties shall have agreed otherwise pursuant to a valid amendment concluded in accordance with Article 21.1 above.

21.3 The terms or conditions of any supplemental undertakings, licenses, or other forms of agreement concerning any goods or services provided under the Contract shall not be valid and enforceable against UNRWA nor in any way shall constitute an agreement by UNRWA thereto unless any such undertakings, licenses or other forms are the subject of a valid amendment concluded in accordance with Article 21.1, above.

22. AUDITS AND INVESTIGATIONS:

22.1 Each invoice paid by UNRWA shall be subject to a post-payment audit by auditors, whether internal or external, of UNRWA or by other authorized and qualified agents of UNRWA at any time during the term of the Contract and for a period of two (2) years following the expiration or prior termination of the Contract. UNRWA shall be entitled to a refund from the Contractor for any amounts shown by such audits to have been paid by UNRWA other than in accordance with the terms and conditions of the Contract.

22.2 The Contractor acknowledges and agrees that, from time to time, UNRWA may conduct investigations relating to any aspect of the Contract or the award thereof, the obligations performed under the Contract, and the operations of the Contractor generally relating to performance of the Contract. The right of UNRWA 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 relevant documentation for such purposes at reasonable times and on reasonable conditions and to grant to UNRWA access to the Contractor’s premises at reasonable times and on reasonable conditions in connection with such access to the Contractor’s personnel and relevant documentation. 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 UNRWA hereunder.

23. LIMITATION ON ACTIONS:

23.1 Except with respect to any indemnification obligations in Article 6, above, or as are otherwise set forth in the Contract, any arbitral proceedings in accordance with Article 17.2, above, arising out of the Contract must be commenced within three years after the cause of action has accrued.

23.2 The Parties further acknowledge and agree that, for these purposes, a cause of action shall accrue when the breach actually occurs, or, in the case of latent defects, when the injured Party knew or should have known all of the essential elements of the cause of action, or in the case of a breach of warranty, when tender of delivery is made, except that, if a warranty extends to future performance of the goods or any process or system and the discovery of the breach consequently must await the time when such goods or other process or system is ready to perform in accordance with the requirements of the Contract, the cause of action accrues when such time of future performance actually begins.
24. ADDITIONAL WARRANTIES:

24.1 The Contractor represents and warrants that:

24.1.1 it has not and shall not offer any direct or indirect benefit arising from or related to the performance of the Contract or the award thereof to any representative, official, employee, or other agent of UNRWA.

24.1.2 neither it, its parent entities (if any), nor any of the Contractor’s subsidiary or affiliated entities (if any) is engaged in any practice inconsistent with the rights set forth in the Convention on the Rights of the Child, including Article 32 thereof, which, *inter alia*, requires that a child shall be protected from performing any work that is likely to be hazardous or to interfere with the child’s education, or to be harmful to the child’s health or physical, mental, spiritual, moral, or social development.

24.1.3 neither it, its parent entities (if any), nor any of the Contractor’s subsidiaries or affiliated entities (if any) is engaged in the sale or manufacture of anti-personnel mines or components utilized in the manufacture of anti-personnel mines.

24.1.4 it shall take all appropriate measures to prevent sexual exploitation or abuse of anyone by its employees or any other persons engaged and controlled by the Contractor to perform any services under the Contract. For these purposes, sexual activity with any person less than eighteen years of age, regardless of any laws relating to consent, shall constitute the sexual exploitation and abuse of such person. In addition, the Contractor shall refrain from, and shall take all reasonable and appropriate measures to prohibit its employees or other persons engaged and controlled by it from exchanging any money, goods, services, or other things of value, for sexual favors or activities, or from engaging any sexual activities that are exploitive or degrading to any person.

UNRWA shall not apply the foregoing standard relating to age in any case in which the Contractor’s personnel or any other person who may be engaged by the Contractor to perform any services under the Contract is married to the person less than the age of eighteen years with whom sexual activity has occurred and in which such marriage is recognized as valid under the laws of the country of citizenship of such Contractor’s personnel or such other person who may be engaged by the Contractor to perform any services under the Contract.

24.1.5 neither it, its parent entities (if any), nor any of the Contractor’s subsidiary, affiliated entities (if any) or suppliers is engaged in any transactions with, and/or the provision of resources and support to, individuals and organizations associated with, receiving any type of training for, or engaged in, any act of offense described in Article 2, Sections 1, 3, 4 or 5 of the International Convention for the Suppression of the Financing of Terrorism, adopted by the General Assembly of the United Nations in Resolution 54/109 of 9 December 1999.

24.2 The Contractor acknowledges and agrees that the provisions of Article 24.1 constitute an essential term of the Contract and that breach of any such representation and warranty shall entitle UNRWA to terminate the Contract immediately upon notice to the Contractor, without any liability for termination charges or any other liability of any kind.

25. BANK GUARANTEE: If specifically requested by UNRWA, prior to the signature of the Contract, the Contractor shall provide a banker’s guarantee from a bank acceptable to UNRWA in the form, amount and manner prescribed by UNRWA.

26. NOTICE AND OTHER FORMALITIES:

26.1 Service of any notice referred to in the Contract or arising therefrom shall be deemed to be valid if sent by registered mail, or by cable, or by hand against authorized signature on receipt, to the address of the Party concerned as set forth in the Contract.

26.2 It is expressly agreed that UNRWA shall have the right to enforce these General Conditions without the necessity of resorting to service of summons, *mise en demeure*, notarial notice, and without any legal formalities or court proceedings of any kind whatsoever; it is being further agreed that the notice provided for in the preceding paragraph is adequate for all purposes notwithstanding any provision of applicable law to the contrary.

27. SEVERABILITY: If any term, covenant, or condition of this Contract or the application thereof to any person or circumstance shall to any extent be determined to be invalid or unenforceable, the remainder of this Contract, or the application of such term, covenant or condition to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby and each term, covenant, or condition of this Contract shall remain valid and be enforced to the fullest extent possible.
SECTION 7: BIDDING FORMS

Form A: Acknowledgement letter
Form B: Checklist
Form C: Bid Submission
Form D: Bidder Information
Form E: Joint Venture / Consortium / Association Information
Form G: Price Schedule
Form H: Form of Contract
Form I: Performance Bond
Form J: Bid Bond
Form K: Instructions for UNGM registration and Bid submission
FORM A: ACKNOWLEDGEMENT LETTER

Please acknowledge receipt of this ITB by completing this form and returning it by email to the address, and by the date specified, in the Letter of Invitation.

To:  Insert name of contact person  
Email: tender.queries@unrwa.org

From:  Click or tap here to enter text.

Subject  ITB reference  **ITBW-3522000048**

<table>
<thead>
<tr>
<th>Check the appropriate box</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>YES, we intend to submit a bid.</td>
</tr>
<tr>
<td>□</td>
<td>NO. We are unable to submit a competitive offer for the requested goods/works/services at the moment</td>
</tr>
</tbody>
</table>

If you selected NO above, please state the reason(s) below:

<table>
<thead>
<tr>
<th>Check applicable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>The requested goods/services are not within our range of supply</td>
</tr>
<tr>
<td>□</td>
<td>We are unable to submit a competitive offer for the requested products at the moment</td>
</tr>
<tr>
<td>□</td>
<td>The requested products are not available at the moment</td>
</tr>
<tr>
<td>□</td>
<td>We cannot meet the requested specifications</td>
</tr>
<tr>
<td>□</td>
<td>We cannot offer the requested type of packing</td>
</tr>
<tr>
<td>□</td>
<td>We can only offer FCA prices</td>
</tr>
<tr>
<td>□</td>
<td>The information provided for bidding purposes is insufficient</td>
</tr>
<tr>
<td>□</td>
<td>Your ITB is too complicated</td>
</tr>
<tr>
<td>□</td>
<td>Insufficient time is allowed to prepare a bid</td>
</tr>
<tr>
<td>□</td>
<td>We cannot meet the delivery requirements</td>
</tr>
<tr>
<td>□</td>
<td>We cannot adhere to your terms and conditions e.g. payment terms, request for performance security, etc. Please provide details below.</td>
</tr>
<tr>
<td>□</td>
<td>Sustainability criteria/requirements are too stringent (if applicable)</td>
</tr>
<tr>
<td>□</td>
<td>We do not export</td>
</tr>
<tr>
<td>□</td>
<td>We do not sell to the UN</td>
</tr>
<tr>
<td>□</td>
<td>Your volume is too small and does not meet our order quantity</td>
</tr>
<tr>
<td>□</td>
<td>Our production capacity is currently full</td>
</tr>
<tr>
<td>□</td>
<td>We are closed during the holiday season</td>
</tr>
<tr>
<td>□</td>
<td>We had to give priority to other clients’ requests</td>
</tr>
<tr>
<td>□</td>
<td>We do not sell directly but through distributors</td>
</tr>
<tr>
<td>□</td>
<td>We have no after-sales service available</td>
</tr>
<tr>
<td>□</td>
<td>The person handling the bids is away from the office</td>
</tr>
<tr>
<td>□</td>
<td>Other (please provide reasons below):</td>
</tr>
</tbody>
</table>

Further information: Click or tap here to enter text.

<table>
<thead>
<tr>
<th>Check applicable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>We would like to receive future ITBs for this type of goods</td>
</tr>
<tr>
<td>□</td>
<td>We don’t want to receive ITBs for this type of goods</td>
</tr>
</tbody>
</table>

Questions to the bidder concerning the reasons for NO BID should be addressed to  Click or tap here to enter text. phone  
Click or tap here to enter number.,  email  Click or tap here to enter text.  

FORM B: CHECKLIST

This form serves as a checklist for preparation of your bid. Please complete the returnable bidding forms in accordance with the instructions and return them as part of your bid submission: No alteration to the format of forms shall be permitted and no substitution shall be accepted.

Before submitting your bid, please ensure compliance with the instructions in Section 2: Instructions to Bidders and Section 3: Data Sheet.

This form does not have to be returned and simply serves as a tool for bidders to ensure that they have included all necessary forms.

Technical bid:

<table>
<thead>
<tr>
<th>Have you duly completed all the returnable bidding forms?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>* Form C: Bid Submission</td>
<td>☐</td>
</tr>
<tr>
<td>* Form D: Bidder Information</td>
<td>☐</td>
</tr>
<tr>
<td>* Form E: Joint Venture/Consortium/Association Information</td>
<td>☐</td>
</tr>
</tbody>
</table>

| Have you provided the required documents to establish compliance with the evaluation criteria in Section 5? | ☐ |

| Have you provided the required documents in support of Form D: Bidder Information? | ☐ |

Price Schedule:

| * Form G: Price Schedule                                        | ☐ |
FORM C: BID SUBMISSION

Name of bidder:  
Click or tap here to enter text.

Date:  
Click or tap to enter a date.

ITB reference:  
ITBW-3522000048

We, the undersigned, offer to supply the goods and related services required for ________________ in accordance with your Invitation to Bid No. ITBW-3522000048. We hereby submit our bid, which includes this Technical Bid and Price Schedule.

The total price of our bid, excluding any discounts offered below is: Insert amount in words and figures, indicating amount(s) and respective currency(ies) (by lots if applicable).

The discounts offered and the methodology of their application are:

- **Discounts:** If our bid is accepted, the following discounts shall apply Specify in detail each discount offered and the specific item of the Schedule of Requirement to which it applies, including if applicable discounts for accelerated payment.

- **Methodology of application of the discounts:** The discounts shall be applied using the following method: Specify in detail the method that shall be used to apply the discounts.

**Bidder Declaration:** on behalf of our firm, its affiliates, subsidiaries and employees, including any JV / Consortium / Association members or subcontractors or suppliers for any part of the contract.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

- **Requirements and Terms and Conditions:** I/We have read and fully understand the ITB, including the ITB Information and Data Sheet, Schedule of Requirements, the General Conditions of Contract and any Special Conditions of Contract. I/we confirm that the bidder agrees to be bound by them.

- **I/We confirm that the bidder has the necessary capacity, capability and necessary licenses to fully meet or exceed the requirements and will be available to deliver throughout the relevant contract period.**

- **Ethics:** In submitting this bid I/we warrant that the bidder: has not entered into any improper, illegal, collusive or anti-competitive arrangements with any competitor; has not directly or indirectly approached any representative of UNRWA (other than the point of contact) to lobby or solicit information in relation to the ITB; has not attempted to influence, or provide any form of personal inducement, reward or benefit to any representative of UNRWA.

- **I/We confirm to undertake not to engage in proscribed practices, or any other unethical practice, with UNRWA or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to UNRWA. I/We have read and will adhere to the United Nations Supplier Code of Conduct and understand that adherence to it is a requirement for participating in any solicitation exercise of UNRWA.**

- **Conflict of interest:** I/We warrant that the bidder has no actual, potential or perceived conflict of interest in submitting this bid, or entering into a contract to deliver the requirements. Where a conflict of interest arises during the ITB process the bidder will report it immediately to UNRWA’s Point of Contact.

- **Prohibitions, Sanctions:** I/We hereby declare that our firm, its affiliates or subsidiaries or employees, including any Joint Venture/Consortium members or subcontractors or suppliers for any part of the contract is not under procurement prohibition by UNRWA or any other entity of the United Nations, including but not limited to prohibitions derived from the Compendium of United Nations Security Council Sanctions Lists and have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any UN Organization or the World Bank Group.
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>☐</td>
<td>☐</td>
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<td>☐</td>
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<tr>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Name: _______________________________________________________________

Title: _______________________________________________________________

Date: _______________________________________________________________

Signature: ___________________________________________________________

[Stamp with official stamp of the bidder]
FORM D: BIDDER INFORMATION (vendors must complete the following)

<table>
<thead>
<tr>
<th><strong>ITB Reference</strong></th>
<th><strong>ITBW-3522000048</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Legal name of bidder</strong></td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Legal Address, City, Country</strong></td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Website</strong></td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Year of registration</strong></td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Bidder’s Authorized Representative information</strong></td>
<td>Name and Title: Click or tap here to enter text. Telephone numbers: Click or tap here to enter text. Email: Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Legal structure</strong></td>
<td>Choose an item.</td>
</tr>
<tr>
<td><strong>Organisational type</strong></td>
<td>Choose an item.</td>
</tr>
<tr>
<td><strong>Current Licenses, if any, and permits (with dates, numbers and expiration dates)</strong></td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>No. of full-time employees</strong></td>
<td>Click or tap here to enter number.</td>
</tr>
<tr>
<td><strong>No. of staff involved in similar supply contracts</strong></td>
<td>Click or tap here to enter number.</td>
</tr>
<tr>
<td><strong>Are you a UNGM registered vendor?</strong></td>
<td>☐ Yes ☐ No If yes, insert UNGM Vendor Number</td>
</tr>
<tr>
<td><strong>Years of supplying to UN organisations</strong></td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Are you an UNRWA vendor?</strong></td>
<td>☐ Yes ☐ No If yes, insert Vendor Number</td>
</tr>
<tr>
<td><strong>Countries of operation</strong></td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Subsidiaries in the region (please indicate names of subsidiaries and addresses, if relevant to the bid)</strong></td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Commercial Representatives in the country: Name/Address/Phone (for international companies only)</strong></td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Quality Assurance Certification (e.g. ISO 9000 or Equivalent) (If yes, provide a Copy of the valid Certificate):</strong></td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Presence and characteristics of in-house quality control laboratory (if relevant to bid)</strong></td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Does your Company have a corporate environmental policy or environmental management system such as ISO 14001 or ISO 14064 or equivalent?</strong></td>
<td>Tick all that apply and provide supporting documentation. ☐ Corporate Environmental Policy ☐ ISO 14001 ☐ ISO 14064 ☐ Other, specify Click or tap here to enter text.</td>
</tr>
<tr>
<td><strong>Does your organization demonstrate significant commitment to sustainability, including the following aspects that have</strong></td>
<td>Attach a formal statement that outlines your organisation’s commitment to sustainability, where possible providing evidence of tangible results that demonstrate progress such as: Tick all that are attached:</td>
</tr>
<tr>
<td>Question</td>
<td>Answer</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Has your company implemented any initiatives or actions that contribute to sustainable procurement?</td>
<td>☐</td>
</tr>
<tr>
<td>• Environmental: prevention of pollution, sustainable resources; climate change and mitigation and the protection of the environment, biodiversity.</td>
<td></td>
</tr>
<tr>
<td>• Social: human rights and labour issues, gender equality, sustainable consumption, and social health and wellbeing.</td>
<td></td>
</tr>
<tr>
<td>• Economic: whole life cycle costing, local communities and small or medium enterprises, and supply chain sustainability.</td>
<td></td>
</tr>
<tr>
<td>Does your company belong to a diverse supplier group including micro, small or medium sized enterprise, women or youth owned business or other? (If yes, please provide details and documentation)</td>
<td></td>
</tr>
<tr>
<td>Is your company inclusive of persons with disabilities, i.e. do you hire persons with disabilities, do you have a disability inclusion policy or do you consider accessibility in the design of your products, services or supply chain? (If yes, please provide details and documentation)</td>
<td></td>
</tr>
<tr>
<td>Is your company a member of the UN Global Compact</td>
<td>Choose an item. If yes, please provide a link to your Global Compact profile: Click or tap here to enter text.</td>
</tr>
<tr>
<td>Contact person that UNRWA may contact for requests for clarifications during bid evaluation</td>
<td>Name and Title: Click or tap here to enter text. Telephone numbers: Click or tap here to enter text. Email: Click or tap here to enter text.</td>
</tr>
</tbody>
</table>
### FORM E: JOINT VENTURE/CONSORTIUM/ASSOCIATION INFORMATION

To be completed and returned with your bid if the bid is submitted as a Joint Venture/Consortium/Association.

<table>
<thead>
<tr>
<th>No</th>
<th>Name of Partner and contact information (address, telephone numbers, fax numbers, e-mail address)</th>
<th>Proposed proportion of responsibilities (in %) and type of goods, works and/or services to be performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click or tap here to enter text.</td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td>2</td>
<td>Click or tap here to enter text.</td>
<td>Click or tap here to enter text.</td>
</tr>
<tr>
<td>3</td>
<td>Click or tap here to enter text.</td>
<td>Click or tap here to enter text.</td>
</tr>
</tbody>
</table>

**Name of leading partner**

(with authority to bind the JV, Consortium, Association during the ITB process and, in the event a Contract is awarded, during contract execution)

Click or tap here to enter text.

We have attached a copy of the below referenced 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 [Click or tap here to enter text] for the fulfilment of the provisions of the Contract.

<table>
<thead>
<tr>
<th>Name of partner:</th>
<th>Name of partner:</th>
</tr>
</thead>
<tbody>
<tr>
<td>______________________</td>
<td>______________________</td>
</tr>
<tr>
<td>Signature: ______________________</td>
<td>Signature: ______________________</td>
</tr>
<tr>
<td>Date: ______________________</td>
<td>Date: ______________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of partner:</th>
<th>Name of partner:</th>
</tr>
</thead>
<tbody>
<tr>
<td>______________________</td>
<td>______________________</td>
</tr>
<tr>
<td>Signature: ______________________</td>
<td>Signature: ______________________</td>
</tr>
</tbody>
</table>
FORM G: PRICE SCHEDULE (BILLS OF QUANTITIES)

ITB No. ITBW-3522000048
Currency: -----------------------------

The Commercial Evaluation will be composed of two parts

1. Assessment of mandatory Requirements.
2. Acceptance to provide the performance bond if awarded

Vendors are supposed to check their Prices to ensure that there are no errors. In case the errors are identified in any vendors financial offer, then the affected bidder will be requested to accept the corrected offer, otherwise the vendors offer will be rejected.

Mandatory Requirements

Vendor will be evaluated on pass and fail for this criterion. The vendor must confirm the acceptance of the UNRWA General Conditions of Contract for Services

1. Acceptance of the UNRWA General Conditions of Contract for Services (UNRWA GCC)

☐ I do hereby accept the UNRWA General Conditions of Contract for Services (See Annex G)

☐ I do not accept the UNRWA General Conditions of Contract for Services

2. Acceptance to provide performance bond if awarded

☐ I do hereby accept to provide the performance bond

☐ I do not accept the UNRWA General Conditions of Contract for Services

Failure to accept the commercial mandatory requirements may lead to rejection of the vendor’s bid.

INSTRUCTIONS ON BILLS OF QUANTITIES

a) Include all unit prices and total prices, and if the unit price is missing/un-priced, the unit price will be considered zero and it will mean the vendor has included this price in the overall total.
b) Please also double check arithmetical correctness of your bid before the submission

c) Submit in excel file in the e-tendering system (In-Tend) alongside your offer.

d) Print the populated excel file, sign and stamp and submit a copy alongside your bid,
## BILLS OF QUANTITIES

### Maintenance Works At Four Schools For Zarqa Area -ITBW-3522000048

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>QTY</th>
<th>Unit</th>
<th>Unit rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BLK - Block Work</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLK-003-M</td>
<td>20 cm thick hollow concrete blocks walling, type A compressive strength 35kg/cm² with 1:6 (cement :fine aggregate)morter binder</td>
<td>14</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>CON - Concrete Work</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>con-006-m</td>
<td>10 cm average thickness plain concrete (250/20) with broom finish for ground slab</td>
<td>80</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>CON-008-M</td>
<td>Reinforced concrete 250/20 in door jambs, belts, lintel, sills or alike (Reinforcement 4 O 12mm &amp; 5 O 8mm/mr stirrups)</td>
<td>70</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>CON-020-M</td>
<td>Reinforced concrete mix 250/20 suspended solid slab average 15cm thick with 14mm diameter reinforcement base at 20cm centres</td>
<td>5</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>CON-031-M</td>
<td>Plain concrete 200/20 cm in 3 cm average thickness to roof screed with steel troweld finish</td>
<td>150</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>DEM - Demolishing &amp; Alteration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEM-017-M</td>
<td>Hack off existing ground or wall tiles, prepare and leave ready to receive new tiles or plaster and remove debris from site</td>
<td>30</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>DEM-035-M</td>
<td>Demolish existing reinforced concrete slab for single toilet unit</td>
<td>5</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-042-m</td>
<td>Carefully demolish (2.5x0.70m) concrete canopy complete with plastering edges, making good all work affected, and remove all debris from site , rate include external paints to match with exist .</td>
<td>15</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>DEM-043-M</td>
<td>Lift up existing ceramic floor tiling, clean and prepare existing surface to receive new floor finish and remove debris from site</td>
<td>60</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>ELC - Electrical Installation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Maintenance Works At Four Schools For Zarqa Area -ITBW-3522000048

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>QTY</th>
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<th>Unit rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELC-085-M</td>
<td>Supply, install, connect, test, put in operation and commission ceiling mounted fluorescent lighting fixture 2X36watt of approved brand B.G or Buraq UN version, complete with reflector and LED Lamp T8 (1200 mm (1198*26 mm)) Power: 18 W, Input voltage : 185-265 VAC, Power factor: &gt;=0.5, Lumen output &gt;=1800 Lm, PC cover frosted class, Connection Terminal: G13 double end, color temperature :6000- 6500K K, CIR : &gt;= 80, Working lifetime: &gt;=25000 HRS, 2 Years Warranty Viewing angle: &gt;= 140 Degree, THD : &gt; 20, testing certificate: LM79, LVD. All in accordance and approval of D.O.W or E.E</td>
<td>100</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>ELC-665-M</td>
<td>Carefully dismantle and refix the existing ceiling fan for an annual check. This job shall be deemed to include dismantling ceiling fan to make sure that it is safely fixed to slab steel rods, making sure that it is fixed by the original clamp, checking the clamp, bolts and all parts from cracks and cut. If there are no steel rods fan must be hanged using 60 cm length steel rod Ø14mm installed carefully in hollow block (ribs). After work completion contractor must close the ceiling hole(using gypsum) and fill the annual ceiling fans maintenance table and insert the serial number in the sheet.</td>
<td>30</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>ELC-700-M</td>
<td>Supply, install, mount, connect, test and put in operable manner regulating speed switch for ceiling fan similar to KDK, Panasonic or Equivalent.</td>
<td>20</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>ELC-701-M</td>
<td>Supply, install, mount correctly and safely and test 40 watt ceiling mounted fan type Equivalent to Panasonic or KDK. Condenser controlled five speed regulator, with cut-off safety switch, fall prevention of blade, Safety wire to prevent detachment of fan motor from rod, Thermal fuse to prevent overheating or power surge, and with permanently lubricated ball bearing assembly. Rate shall deemed to include all conduits size 20mm and electric wire size 2X2.5, switch and any fittings required for full and proper operation of the fan,making good all affected areas.</td>
<td>14</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>ELC-709-M</td>
<td>Supply, install, mount correctly and safely and test 40 watt wall mounted fan type Equivalent to KDK or Panasonic Three speed and ON/OFF by pull switch. Power plug must be MK type. In accordance and approval of D.O.W or E.E. rate include all electrical connections (3x2.5 mm cables inside 20 mm PVC conduit.</td>
<td>5</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**Total** 0
<table>
<thead>
<tr>
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<th>Unit rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXC-001-M</td>
<td>Excavate in any kind of soil, rock and concrete or asphalt pavement for site levelling, footing</td>
<td>9</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>FIN-003-M</td>
<td>External plastering or rendering 20mm thick, cement sand mix 1:2, 1:4, 1:2, for key coat, rough</td>
<td>145</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>and fine coats respectively.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIN-006-M</td>
<td>Plastering or rendering for repairing cracks, edges of window canopies or the like, including</td>
<td>100</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>10-20cm wide expamet strip mesh. Rate includes hacking off existing plaster then making good</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>work affected</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIN-011-M</td>
<td>Floor unglazed ceramic tiles, 8mm thick laid on sand and mortar beds including 2mm pointing.</td>
<td>65</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>FIN-013-M</td>
<td>Wall glazed ceramic tiles 6mm thick laid on plaster and mortar baking including 2 mm pointing,</td>
<td>25</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>rate includes necessary plastering.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIN-081-M</td>
<td>Decorative ceramic tiles best quality(shape and colour to be decided by supervisor engineer)</td>
<td>40</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>complete with mortar, pointing, and stanles steel or aluminium angles. rate include any neccessary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>works as plaster partially or hacking exist layers , skirting , to recieve new ceramic tiles.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>0</strong></td>
</tr>
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<td>Ref.</td>
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<td>Unit</td>
<td>Unit rate</td>
<td>Total</td>
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<td>------------------------------------------------------------------------------</td>
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<td>-------</td>
</tr>
<tr>
<td>IRN-002-M</td>
<td>Door cylinder switch lock complete with handles (ISEO type, European made)</td>
<td>30</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>IRN-004-M</td>
<td>Door lock complete with handles (National type or approved equal)</td>
<td>5</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>MET-008-M</td>
<td>Window protective screen, complete with frame, 3mm mesh, ironmongery,</td>
<td>32</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>hardware and painting to match existing or as sketch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>met-019-M</td>
<td>Galvanized steel pipe rail 2&quot; internal diameter</td>
<td>40</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>for making guide rail, handrail or alike, fixed to concrete, blockwork or</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>welded to existing handrail including painting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET-026-M</td>
<td>perforated metal sheet 1.5 mm thick fixed on</td>
<td>30</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>frame, rate include to supply, install, fix 8 cm * 4 cm metal tubes as</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>surrounding frame and partitions every 1 m length, also any additional</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>tubes to get the rigidity of metal frame as directed of DOW</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET-034-M</td>
<td>Double sheet single leaf metal door, complete with hollow section frame,</td>
<td>3</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2.0 mm sheet metal, rockwool, stop, ironmongery hardware, switch lock and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>painting (prime &amp; 2 coats oil paint) as per sketches</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET-047-M</td>
<td>Supply and fix (30x30x2mm) hollow section tube including painting</td>
<td>40</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>MET-049-M</td>
<td>Supply and fix (80x40x2mm) hollow section tube including painting</td>
<td>40</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>MET-053-M</td>
<td>Supply and fix prepainted trapezoidal zinc sheet roofing 0.6mm thick</td>
<td>25</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>complete with steel hollow sections joists 80x40x2mm to the boundary frame</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and each one meter in short length, rivets screws, 80x80x2mm columns etc..</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>As detailed in drawings and according to DOW. Rate also includes plain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>concrete 200/20 for footing welding, prime and two coats oil paint,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>galvanized steel gutter, with coordinate with DOW</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET-188-M</td>
<td>Pre-painted zinc sheet SANDWISH PANEL 5mm thick complete with U section</td>
<td>32</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>galvanized zinc sheets 0.6mm thick fixed in edges of panel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REM-031-M</td>
<td>Dismantle existing steel door readjust, repair, rate includes all necessary</td>
<td>20</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>repairs, hinges, bolts, bottom tube and fixing, welding, paints</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ref.</td>
<td>Description</td>
<td>QTY</td>
<td>Unit</td>
<td>Unit rate</td>
<td>Total</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>-------</td>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td>rep-021-m</td>
<td>Carefully break out dilapidated column concrete (average depth 40mm), expose reinforcement, clean to bright metal, prime steel bars with zink rich Epoxy primer type DUREPAIR EZ5, or equivalent. Apply epoxy Bonding Agent type CONGRESIVE 1414 or equivalent to both concrete and steel. Apply repair mortar type CEMREREP AIR CHB or equivalent (see attached sketch). Rate to include removal of all debris from site.</td>
<td>10</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>rep-304-m</td>
<td>Jacketing of columns as specified from top of footing up to determine level by DOW Reinforced concrete (300 kg/cm²) T14mm, stirrups T 10 mm / 15 cm.</td>
<td>2</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**Total**                                                                               |       |       |           | 0     |

**PAV - Paths, Pavings & Steps**

<table>
<thead>
<tr>
<th>Pav.</th>
<th>Description</th>
<th>QTY</th>
<th>Unit</th>
<th>Unit rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>pav-002-m</td>
<td>Base coarse in layers not exceeding 15cm thickness after compaction, well rammed and consolidated</td>
<td>10</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**Total**                                                                               |       |       |           | 0     |
<table>
<thead>
<tr>
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<th>Unit</th>
<th>Unit rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>plm-007-m</td>
<td>High level W.C. suite, P-trap screwed to floor including connection to existing water and sewerage system complete with cistern flushing mechanism with ball</td>
<td>3</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-033-m</td>
<td>replace completely the exist grohe uniset tools , to produce effective flushing mechanism for the cistern uniset.</td>
<td>5</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-034-M</td>
<td>1/2” diameter float valve and ball to replace unserviceable existing one</td>
<td>3</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-034-M</td>
<td>repair the exist grohe uniset tools , to produce effective flushing mechanism for the cistern uniset</td>
<td>5</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-048-M</td>
<td>2” internal diameter UPVC drainage pipe (3.6mm thick) laid under ground including excavating, bedding, surrounding and back filling or fixed to wall with brackets or fixed within walls. Rate also includes jointing, fittings, connections and testing</td>
<td>20</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-050-M</td>
<td>4” internal diameter UPVC drainage pipe (4.6mm thick) laid under ground including excavating, bedding, surrounding and back filling or fixed to wall with brackets or fixed within walls. Rate also includes jointing, fittings, connections and testing</td>
<td>30</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-051-M</td>
<td>6” internal diameter UPVC drainage pipe (7mm thick) laid under ground including excavating, bedding, surrounding and back filling or fixed to wall with brackets or fixed within walls. Rate also includes jointing, fittings, connections and testing</td>
<td>65</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-061-M</td>
<td>4” internal diameter UPVC rain water down pipe or ventilation pipe, including, shoe, bend or outlet, jointing and brackets</td>
<td>40</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-077-M</td>
<td>60cm internal diameter manhole, constructed of 15cm thick plain concrete 150/20 walls and base, 10cm thick reinforced concrete 200/20 cover slab, lean mix concrete margin, plain concrete200/20 benching, UPVC half round channel, 50 kg medium duty cast iron cover and frame clear opening 570mm diameter set in</td>
<td>1</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-077-M</td>
<td>60cm internal diameter manhole, constructed of 15cm thick plain concrete 150/20 walls and base, 10cm thick reinforced concrete 200/20 cover slab, lean mix concrete margin, plain concrete200/20 benching, UPVC half round channel, 50 kg medium duty cast iron cover and frame clear opening 570mm diameter set in</td>
<td>4</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-101-M</td>
<td>White glazed fireclay wash basin column type (to replace existing) with plug, P-trap and chain including mastic sealant</td>
<td>1</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>
### Maintenance Works At Four Schools For Zarqa Area -ITBW-3522000048

<table>
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<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLM-103-M</td>
<td>carefully Dismantle, keep save and refix wash basin, high level WC with related accessories</td>
<td>10</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-132-M</td>
<td>supply and fix plastic hose with shower outlet (shataf) including necessary fittings</td>
<td>4</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-163-M</td>
<td>Supply and install flushing mechanism with ball for high level W.C. suit to replace unserviceable one</td>
<td>4</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PLM-304-M</td>
<td>Stainless steel trapped floor gully 4&quot; diameter with outlets and inlets as needed; including heavy duty grating, excavating, bedding, surrounding and connection to pipe work.</td>
<td>8</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**Total** 0
## Maintenance Works At Four Schools For Zarqa Area -ITBW-3522000048

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</tr>
</thead>
<tbody>
<tr>
<td>PNT - Painting &amp; Decorating</td>
<td>Two coats of high quality external emulsion paint to wall and ceiling surfaces, including rubbing down existing deteriorated paint, if any, to plaster, preparing, stopping, repairing hair cracks and priming</td>
<td>2350</td>
<td>m²²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>pnt-006-m</td>
<td>Two coats oil paint to walls including rubbing down existing deteriorated paint, if any, to plaster, preparing, stopping, repairing hair cracks and priming</td>
<td>700</td>
<td>m²²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PNT-014-M</td>
<td>Prime and apply two coats acrylic based textured paint to newly plastered walls</td>
<td>20</td>
<td>m²²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PNT-017-M</td>
<td>Two coats oil paint for steel rainwater down pipes, ventilation pipes, handrail pipe or the like, including proper treatment of deteriorated paint prior to painting</td>
<td>300</td>
<td>mr²</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

### Total

<table>
<thead>
<tr>
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<th>QTY</th>
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<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROF - Roofing</td>
<td>Plasticised bitumen roofing, one layer membrane with chippings, 4mm thick, including priming existing surface, dressing into rain water proof seal, rate includes dismantling and refixing water tanks, dismantling pipe line and refixing, and cleaning the roof (measured net with no allowance for end and side laps)</td>
<td>150</td>
<td>m²²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>ROF-008-M</td>
<td>Plasticised bitumen roofing, one layer membrane with chippings, 4mm thick, including priming existing surface, dressing into rain water proof seal, rate includes dismantling and refixing water tanks, dismantling pipe line and refixing, and cleaning the roof (measured net with no allowance for end and side laps) rate include dismantle the current deteriorated area of bitumen membrane, remove debris from the site, Concret Works to adjust concrete level to match the slope for the current rain water drainage</td>
<td>100</td>
<td>m²²</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

### Total

<table>
<thead>
<tr>
<th>Ref.</th>
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<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>
## Maintenance Works At Four Schools For Zarqa Area-ITBW-3522000048

**Project Title:** Maintenance Works At Four Schools For Zarqa Area  

**Currency:**

**Liquidated Damages:** JD 150 /Day  

**Project duration:** 60 Day

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>BLK - Block Work</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>CON - Concrete Work</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>DEM - Demolishing &amp; Alteration</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>ELC - Electrical Installation</td>
<td>0</td>
</tr>
<tr>
<td>G</td>
<td>EXC - Excavation &amp; Earthworks</td>
<td>0</td>
</tr>
<tr>
<td>H</td>
<td>FIN - Finishings</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>G - Metalwork</td>
<td>0</td>
</tr>
<tr>
<td>K</td>
<td>PAV - Paths, Pavings &amp; Steps</td>
<td>0</td>
</tr>
<tr>
<td>L</td>
<td>PLM - Internal Plumbing</td>
<td>0</td>
</tr>
<tr>
<td>M</td>
<td>PNT - Painting &amp; Decorating</td>
<td>0</td>
</tr>
<tr>
<td>R</td>
<td>ROF - Roofing</td>
<td>0</td>
</tr>
</tbody>
</table>

**Overall total** 0
### Maintenance at Wadi Seer Training center - ITBW – 3522000048

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>QTY</th>
<th>Unit</th>
<th>Unit rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON - Concrete Work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>con-015-m</td>
<td>Polysulphide mastic sealant pointing to expansion joint (20X20 mm)</td>
<td>70</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>con-300-m</td>
<td>Concrete mix 200/20 in 50mm average thick roof screed laid to fall with steel troweled finish.</td>
<td>1040</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>DEM - Demolishing &amp; Alteration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dem-009-m</td>
<td>Clean down, remove all debris, remove water proofing, strip of loose materials and prepare existing roof and skirting to receive new finish</td>
<td>1250</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-015-m</td>
<td>Hack off existing plaster, clean and prepared existing surface to receive new plaster or glazed tiles and remove debris from site</td>
<td>137</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-033-m</td>
<td>Dismantle existing door, window, window protection, cupboard door, ventilation window, canopy, entrance gate, complete with frame and store away approved materials for re-use</td>
<td>40</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>ELC - Electrical Installation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>elc-012-m</td>
<td>Do maintenance works for Flood lighting unit, street lighting unit or Hi -bay lighting unit. Rate shall be deemed to include replace Lamp European made and approved from D.O.W before installation. This item applicable for 150W, 250W or 400 W</td>
<td>35</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-050-m</td>
<td>Supply, install, connect and test HIGH BAY unit 200 W, Die casting aluminum, high performance aluminum (ADC12), high quality power coating for best correction resistance, CNC machine surface processed of heat sink for better heat dissipating, high quality seal ring. Input voltage : 185-265 VAC, 50-60 Hz, Power factor : &gt;-0.95, Lighting source: Cree or equivalent, Efficiency: 120 Lm/W, Beam angle=90, CRI=&gt;70, Certificates: LVD, LM79, IP65, power driver brand: MEANWELL or equivalent, Operating tempreture : -20 C to +50 C, CCT : 5500-6500K, DC voltage output=&lt;60VDC, I=&lt;250mA, THD=&lt;10%, Lenses : PC, Working life time: &gt;=50000 HRS, Warrenty 5 years All in accordance and approval of D.O.W Rate include fixing steel rope, new unit to be fixed at 4-5 meters hight.</td>
<td>10</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-065-m</td>
<td>Supply, install, connect, test, put in operable manner and commission 2X8W exit emergency lighting unit, made in Europe as a complete unit with long life Nickel Cadmium chargeable batteries, with the instruction and approval of D.O.W or E.E</td>
<td>2</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Ref.</td>
<td>Description</td>
<td>QTY</td>
<td>Unit</td>
<td>Unit rate</td>
<td>Total</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>elc-100-m</td>
<td>Supply, install, mount, connect and test one gang switch Equivalent to B.G, MEM type. In accordance and approval of D.O.W or E.E.</td>
<td>5</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-103-m</td>
<td>Supply, install, mount, connect and test two gang switch Equivalent to B.G, MEM type. In accordance and approval of D.O.W or E.E.</td>
<td>8</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-115-m</td>
<td>Supply, install, mount, connect and test three-pin socket outlet, 13 amp. with switch Equivalent to B.G, MEM type In accordance and approval of D.O.W or E.E.</td>
<td>10</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-123-m</td>
<td>Supply, install, mount, connect and test double gange three-pin socket outlet, 13 amp. with switch Equivalent to B.G, MEM type : In accordance and approval of D.O.W or E.E.</td>
<td>15</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>
## Maintenance at Wadi Seer Training center -ITBW – 3522000048

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>QTY</th>
<th>Unit</th>
<th>Unit rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>elc-323-m</td>
<td>Supply, install and connect 3X2.5 SQ mm cable, Equivalent to Gulf- CABLECO-UNITED type.</td>
<td>100</td>
<td>mr</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>elc-504-m</td>
<td>Supply, install, mount and put in operable manner 25 mm rigid white or black colour PVC conduit or 16X25 mm trunk (upon situation on site) with holding clamps each 60 cm at most, Gulf or JPCO. Rate shall be deemed to include all junction boxes or civil works needed, and also include install pull rope if the conduits well be used for future data cables. All works in accordance and approval of D.O.W</td>
<td>70</td>
<td>mr</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>fin-081-m</td>
<td>Decorative ceramic tiles best quality(shape and colour to be decided by supervisor engineer) complete with mortar, pointing, and stainless steel or aluminium angles.</td>
<td>137</td>
<td>m²</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fin-300-m</td>
<td>Plastering or rendering for repairing cracks , top of skirting or the alike (approximate 10-20cm wide).Rate includes breaking carefully the areas where corrosion of steel is detected to expose the steel , repairing the steel with special material , fixing of steel mish at the cracks then making good work affected, preparing to receive new plaster , and remove debris from site.</td>
<td>115</td>
<td>mr</td>
<td>0</td>
<td>0</td>
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<tr>
<td>irn-022-m</td>
<td>Glass panes 6mm thick fixed properly to steel or aluminum window including putty or rubber as needed</td>
<td>4</td>
<td>m²</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>met-029-m</td>
<td>Aluminium expansion joint cover (60x3mm) for floors</td>
<td>10</td>
<td>mr</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>met-030-m</td>
<td>Aluminium expansion joint cover (2mm thick) for wall and ceiling (10-12 cm wide)</td>
<td>40</td>
<td>mr</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>met-300-m</td>
<td>Mild steel security grill protection comprises2No. of horizontal 1.5-inch pipes ,and 1.5 inch steel pipes every 10cm vertically complete with steel angles 50°50°5mm ad painting (primer and two coats of oil paint).</td>
<td>60</td>
<td>m²</td>
<td>0</td>
<td>0</td>
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<tr>
<td>plm-061-m</td>
<td>Supply and install 4&quot; internal diameter UPVC rain water down pipe or ventilation pipe, including, shoe, bend or outlet, jointing and brackets</td>
<td>40</td>
<td>mr</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>

**Total**

FIN - Finishings: 0

ELC - Electrical: 0

G - Metalwork: 0

PLM - Internal Plumbing: 0
## Maintenance at Wadi Seer Training center - ITBW – 3522000048

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<tr>
<td><strong>PNT - Painting &amp; Decorating</strong></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>PNT-002-m</td>
<td>Two coats of high quality external emulsion paint to wall and ceiling surfaces, including rubbing down existing deteriorated paint, if any, to plaster, preparing, stopping, repairing hair cracks and priming</td>
<td>1000</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PNT-006-m</td>
<td>Two coats oil paint to walls including rubbing down existing deteriorated paint, if any, to plaster, preparing, stopping, repairing hair cracks and priming</td>
<td>600</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>PNT-009-m</td>
<td>Two coats oil paint for door windows window protective grill, screen, blackboard or a like. Deteriorated paints should be treated properly prior painting.</td>
<td>150</td>
<td>m²</td>
<td></td>
<td>0</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
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<tr>
<td><strong>ROF - Roofing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>ROF-005-m</td>
<td>50x50mm cement and sand angle fillet</td>
<td>585</td>
<td>mr</td>
<td></td>
<td>0</td>
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<tr>
<td>ROF-008-m</td>
<td>Plasticised bitumen roofing, one layer membrane with chippings, 4mm thick, including priming existing surface, dressing into rain water proof seal, rate includes dismantling and refixing water tanks, dismantling pipe line and refixing, and cleaning the roof (measured net with no allowance for end and side laps)</td>
<td>1350</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>ROF-011-m</td>
<td>Repair Roof expansion joint by removing exist. Cover, cleaning, applying new filler and new bitumen membrane 4mm 1m wide</td>
<td>76</td>
<td>mr</td>
<td></td>
<td>0</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
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### Project Title:
Maintenance at Wadi Seer Training center 2022 (PEP)

### Contract No:

### Level 1: Mandatory

### Type of contract:

### Liquidated Damages:
JD 150/ Day

### Project duration (days):
45 Day

<table>
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<th>Code</th>
<th>Description</th>
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<tr>
<td>A</td>
<td>CON - Concrete Work</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>DEM - Demolishing &amp; Alteration</td>
<td>0</td>
</tr>
<tr>
<td>G</td>
<td>ELC - Electrical Installation</td>
<td>0</td>
</tr>
<tr>
<td>H</td>
<td>FIN - Finishings</td>
<td>0</td>
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<tr>
<td>I</td>
<td>G - Metalwork</td>
<td>0</td>
</tr>
<tr>
<td>K</td>
<td>PLM - Internal Plumbing</td>
<td>0</td>
</tr>
<tr>
<td>L</td>
<td>PNT - Painting &amp; Decorating</td>
<td>0</td>
</tr>
<tr>
<td>M</td>
<td>ROF - Roofing</td>
<td>0</td>
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</table>

### Overall total
0
## General Maintenance at North Amman Area 2022 (PB)-ITBW – 3522000048

<table>
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<tr>
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<tr>
<td><strong>BLK - Block Work</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>blk-001-m</td>
<td>10 cm thick hollow concrete blocks walling, type A compressive strength 35kg/cm² with 1:6 (cement : fine aggregate) mortar binder</td>
<td>25</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>blk-002-m</td>
<td>15 cm thick hollow concrete blocks walling, type A compressive strength 35kg/cm² with 1:6 (cement : fine aggregate) mortar binder</td>
<td>10</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>CON - Concrete Work</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>con-001-m</td>
<td>Lean mix concrete (1:8) in blinding, backfilling voids or the like</td>
<td>1</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>con-002-m</td>
<td>Plain concrete 250/20 in thickening to ground slabs, plinths, steps, supports, closing small opening in walls, lightening channel walls or walls or the like</td>
<td>5</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>con-007-m</td>
<td>Reinforced concrete 250/20 in 10cm thick concrete ground slab, reinforced O 10/15cm centres bothways</td>
<td>30</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>con-008-m</td>
<td>Reinforced concrete 250/20 in door jambs, belts, lintel, sills or alike (Reinforcement 4 O 12mm &amp; 5 O 8mm/mr stirrups)</td>
<td>20</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>con-018-m</td>
<td>Reinforced concrete 250/20 in 15cm thick concrete ground slab, with broom finish, reinforced O 10/20cm centres both ways.</td>
<td>30</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>con-074-m</td>
<td>Drilling hole 14mm diameter in reinforced concrete 20cm deep. Rate includes cleaning the hole from dust by air compressor and applying primer bonding agent to receive epoxy material</td>
<td>15</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>con-077-m</td>
<td>Reinforced concrete 300/20 for ground beams</td>
<td>2</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>con-018-m</td>
<td>Reinforced concrete 300/20 for Columns, Stub Columns and Columns within walls</td>
<td>1</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>DEM - Demolishing &amp; Alteration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dem-001-m</td>
<td>Demolish existing concrete pavement, screed, roof screed aprons plinths or steps (10 cm average thickness) and remove debris from site</td>
<td>30</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-002-m</td>
<td>Lift up existing cement or terrazzo floor tiling and mortar, clean and prepare existing surface to receive new floor finish and remove debris from site</td>
<td>50</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-004-m</td>
<td>Demolish existing 10-15 cm thick concrete block partition wall and remove debris from site</td>
<td>40</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-014-m</td>
<td>Hack off existing terrazzo or concrete skirting and remove debris from site</td>
<td>30</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Ref.</td>
<td>Description</td>
<td>QTY</td>
<td>Unit</td>
<td>Unit rate</td>
<td>Total</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>-------</td>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td>dem-015-m</td>
<td>Hack off existing plaster, clean and prepared existing surface to receive new plaster or glazed tiles and remove debris from site</td>
<td>55</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-017-m</td>
<td>Hack off existing wall tiles, prepare and leave ready to receive new tiles or plaster and remove debris from site</td>
<td>50</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-023-m</td>
<td>Dismantle and remove existing squatting W.C. suite, wash basin or sink</td>
<td>5</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-033-m</td>
<td>Dismantle existing door, window, window protection, cupboard door, ventilation window, canopy, entrance gate, complete with frame and store away approved materials for re-use</td>
<td>20</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-037-m</td>
<td>Dismantle existing ceiling &amp; walls expansion joint, clean &amp; prepare existing surface to receive new one</td>
<td>100</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-043-m</td>
<td>Lift up existing ceramic floor tiling, clean and prepare existing surface to receive new floor finish and remove debris from site</td>
<td>10</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>dem-113-m</td>
<td>Dismantle existing water and swerage pipe line</td>
<td>1</td>
<td>item</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**Total** 0
## General Maintenance at North Amman Area 2022 (PB)-ITBW – 3522000048

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>QTY</th>
<th>Unit</th>
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</tr>
</thead>
<tbody>
<tr>
<td>elc-037-m</td>
<td>Supply, install, connect, test, put in operation and commission weather proof ceiling mounted fluorescent lighting fixture 1X36watt Equivalent to BG with poly carbonate diffuser and steel cover holders which is suitable to be fixed in bathroom or humidity areas. Empty (without lamps, sockets, starters, capacitors and ballasts). Internal wires must be protected and isolated from the ballast heat. Rate shall be deemed to include install LED lamps (get from UNRWA stores MRWH). In coordination with DOW.</td>
<td>8</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-040-m</td>
<td>Supply, install, connect and test flood lighting unit 100 W, Die cast Aluminum body with Tamper Glass. Input voltage : 185-265 VAC, 50-60 Hz, Power factor : -&gt;0.95, Efficiency: 120 Lm/W, CCT: 5500K-6500K, CRi&gt;70, beam angle: 120X90, Lighting source: SMD, LED chip type: Cree or equivalent, Operating temperature : -20 C to +50 C, IP66, IK:8, Working life time: &gt;=50000 HRS, power driver: Meanwell or equivalent, driver efficiency&gt;=95, only one piece driver for the unit, driver installed inside separate compartment Test Reports: approved by JSMO THD : &lt;= 20, Surge Protection &gt;=8KV, warranty 5 years.</td>
<td>2</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-068-m</td>
<td>Supply, install, connect, test put in operation and commission ceiling mounted empty lighting fixture 2X36w of approved brand Equivalent to B.G or BURAQ UN version (without lamps, starters and ballast) with reflector. Rate shall be deemed to include: -Test and handle LED lamp from MRWH (UNRWA stores). -Lighting point with 3X2.5 mm wires and 20 mm PVC conduit Rate shall be deemed to include all material or works needed according to D.O.W</td>
<td>20</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-100-m</td>
<td>Supply, install, mount, connect and test one gang switch Equivalent to B.G, MEM type. In accordance and approval od D.O.W or E.E.</td>
<td>5</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-102-m</td>
<td>Supply, install, mount, connect and test one gang switch Equivalent to B.G, MEM type with 7X7 box, 20 mm conduits, 3X2.5 mm wires and all needed accessories. In accordance and approval of D.O.W or E.E.</td>
<td>5</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-103-m</td>
<td>Supply, install, mount, connect and test two gang switch Equivalent to B.G, MEM type. In accordance and approval od D.O.W or E.E.</td>
<td>20</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-115-m</td>
<td>Supply, install, mount, connect and test three-pin socket outlet, 13 amp. with switch Equivalent to B.G, MEM type In accordance and approval of D.O.W or E.E.</td>
<td>10</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-123-m</td>
<td>Supply, install, mount, connect and test double gang three-pin socket outlet, 13 amp. with switch Equivalent to B.G, MEM type . In accordance and approval of D.O.W or E.E.</td>
<td>15</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Ref.</td>
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<td>Unit</td>
<td>Unit rate</td>
<td>Total</td>
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<tr>
<td>elc-129-m</td>
<td>Supply, install, connect and test 32 Amp double pole switch with indicator lamp Equivalent to B.G. MEM type. In accordance and approval of D.O.W or E.E.</td>
<td>2</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-323-m</td>
<td>Supply, install and connect 3X2.5 SQ mm cable, Equivalent to Gulf-CABLECO-UNITED type.</td>
<td>300</td>
<td>mR</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Ref.</td>
<td>Description</td>
<td>QTY</td>
<td>Unit</td>
<td>Unit rate</td>
<td>Total</td>
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<tr>
<td>elc-504-m</td>
<td>Supply, install, mount and put in operable manner 25 mm rigid white or black colour PVC conduit or 16X25 mm trunk (upon situation on site) with holding clamps each 60 cm at most, Gulf or JPCO. Rate shall be deemed to include all junction boxes or civil works needed, and also include install pull rope if the conduits well be used for future data cables. All works in accordance and approval of D.O.W.</td>
<td>300</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-651-m</td>
<td>Dismantle and refix all electrical installations (wires, cables, conduits, trunks, boxes, lighting units, power socket outlets, fans, D.B.s,...) due to the demolish, replacement and construction of processes.</td>
<td>2</td>
<td>item</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-703-m</td>
<td>Supply, install, mount, connect, test and put in operable manner 8” exhaust fan mounted on glass Panasonic or KDK type. with feeding circuit. Unit must be approved by E.E before installation.</td>
<td>10</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>elc-756-m</td>
<td>Supply, install, mount, connect ad test 8” diameter student bell IP65. In accordance and approval of D.O.W or E.E.</td>
<td>4</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>exc-001-m</td>
<td>Excavate in any kind of soil, rock and concrete or asphalt pavement for site levelling, footing or alike including removing surplus excavated materials from site.</td>
<td>17</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>exc-003-m</td>
<td>Imported granular fill for beds, in backfilling around footings, filling percolation pits and/or making up levels in layers not exceeding 15cm thick well rammed and consolidated.</td>
<td>25</td>
<td>m³</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-001-m</td>
<td>Internal plastering 20mm thick, cement sand mix 1:2 , 1:4 ,1:2, for key coat, rough and fine coats respectively.</td>
<td>65</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-002-m</td>
<td>Internal plaster 20mm thick, cement sand mix 1:2 , 1:4 ,1:2, for key coat, rough and fine coats respectively. to suit existing plaster finish</td>
<td>100</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-006-m</td>
<td>Plastering or rendering for repairing cracks, edges of window canopies or the like, including 10-20cm wide expamet strip mesh. Rate includes hacking off existing plaster then making good work affected</td>
<td>200</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-009-m</td>
<td>Terrazzo tiles 250x250x25mm, laid on sand and mortar bed including 2mm pointing with white cement and polishing</td>
<td>20</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-011-m</td>
<td>Floor unglazed ceramic tiles, 8mm thick laid on sand and mortar beds including 2mm pointing.</td>
<td>10</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-013-m</td>
<td>Wall glazed ceramic tiles 6mm thick laid on plaster and mortar baking including 2mm pointing, rate includes necessary plastering.</td>
<td>70</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Ref.</td>
<td>Description</td>
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<tr>
<td>fin-027-m</td>
<td>30mm thick marble threshold, sill, worktop or the like (Khalili, Turkish or similar type) polished one side and exposed edges, chamfered as needed, fixed with adhesive or mortar</td>
<td>2</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-036-m</td>
<td>An approved rubber backing expansion joint filler for floor expansion joint (approximately 20x10mm)</td>
<td>20</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-037-m</td>
<td>An approved rubber backing expansion joint filler for roof expansion joint (approximately 20x10mm)</td>
<td>60</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-038-m</td>
<td>An approved rubber backing expansion joint filler for wall expansion joint (approximately 20x10mm)</td>
<td>20</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-081-m</td>
<td>Decorative ceramic tiles best quality (shape and colour to be decided by supervisor engineer) complete with morter, pointing, and stainless steel or aluminium angles.</td>
<td>70</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-086-m</td>
<td>Granite skirting 100mm high, 12mm thick laid on mortar backing, including pointing</td>
<td>2</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Ref.</td>
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<td>Total</td>
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</tr>
<tr>
<td>fin-087-m</td>
<td>30mm thick granite threshold, sill, worktop or the like, polished one side and exposed edges, chamfered as needed, fixed with adhesive or mortar</td>
<td>2</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-101-m</td>
<td>Floor porcelain tiles (600x600 mm) (non-slip) , thickness not less than 10 mm laid on sand and 40mm mortar beds with 3mm pointing and as approved by DOW.</td>
<td>200</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fin-102-m</td>
<td>Porcelain Skirting 100mm high x 9 mm thick laid on adhesive material or cement mortar backing</td>
<td>80</td>
<td>m</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**Total** 0

**G - Metalwork**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>QTY</th>
<th>Unit</th>
<th>Unit rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>fix-001-m</td>
<td>Refix properly existing dismantled door including architrave, and frame</td>
<td>4</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fix-020-m</td>
<td>Refix properly existing dismantled hot water cylinder</td>
<td>1</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>fix-053-m</td>
<td>Refix properly existing door frame complete with plastering around frame, maintenance, and making good all work effected.</td>
<td>15</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>irn-005-m</td>
<td>Door cylinder switch lock complete with handles (National type, local made)</td>
<td>5</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>met-029-m</td>
<td>Aluminium expansion joint cover (60x3mm) for floors</td>
<td>20</td>
<td>m</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>met-030-m</td>
<td>Aluminium expansion joint cover (2mm thick) for wall and ceiling (10-12 cm wide)</td>
<td>40</td>
<td>m</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>met-033-m</td>
<td>Double sheet single leaf metal door, complete with hollow section frame, 1.5mm sheet metal, rockwool, stop, ironmongery hardware, switch lock and painting (prime &amp; 2 coats oil paint) as per sketches</td>
<td>3</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>met-036-m</td>
<td>Galvanized mild steel double leaf external door complete with hollow section frame, 1.5 mm double metal sheet, rockwool, glazing, stop, ironmongery, lock, hardware and painting. Rate includes for dismantling existing door and making good all works disturb</td>
<td>3</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>met-114-m</td>
<td>1.5mm thick steel sheet cover for wall mounted pipes (15-20 cm wide and 10cm deep) fixed properly to wall incluing primer and two coats paint.</td>
<td>50</td>
<td>m</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>met-123-m</td>
<td>Angle shaped AluminumExpansion joint cover 75x75x2mm thickcomplete with backing cord and polysulphide mastic. (30x20mm)</td>
<td>20</td>
<td>m</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>met-700-m</td>
<td>1.5mm thick steel sheet duct for exhaust fan fixed properly including primer and two coats paint.</td>
<td>2</td>
<td>m</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>rem-007-m</td>
<td>Polish existing terrazzo floor tiles, including cleaning down, raking out and re-pointing as needed.</td>
<td>500</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>rem-015-m</td>
<td>Clean and polish existing skirting</td>
<td>150</td>
<td>m</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Ref.</td>
<td>Description</td>
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</tr>
<tr>
<td>rem-020-m</td>
<td>Transfer furniture and equipments and keep in a safe place and cover from sunlight and dust, then replace back in place.</td>
<td>1</td>
<td>item</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>rep-074-m</td>
<td>Apply shrinkage controlled, cementitious high specification repair mortarsystem-fosroc (or equal approved) 10 mm thick for concrete canopies, the concrete surface should be primed with acrylic emulsion bonding agent for concrete (Nitobond AR) or equal approved, clean corroded steel reinforcement to bright steel, prime with Nitoprime zincrich, all works should be done according to DOW instructions.</td>
<td>50</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>rep-076-m</td>
<td>Carefully scrap and removed deteriorated loose concrete and plaster to reach sound material, the affected area should marked, then cut back edge of repair, fully exposed any reinforcement in the repair area, fully clean the concrete and the steel surface.</td>
<td>50</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Ref.</td>
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<tr>
<td>rep-231-m</td>
<td>hacking off existing internal plastering and rendering and remove debris out side the site.</td>
<td>40</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>rep-247-m</td>
<td>epoxy material filling correctly into the holes and fixing 12mm rebar.</td>
<td>3</td>
<td>item</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-003-m</td>
<td>Supply and install water mixer (Fiore or approved equal)</td>
<td>8</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-007-m</td>
<td>High level W.C. suite, P-trap screwed to floor including connection to existing water and sewerage system complete with cistern flushing mechanism with ball</td>
<td>2</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-015-m</td>
<td>Toilet roll holder (chromium)</td>
<td>2</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-016-m</td>
<td>Towel rail (chromium)</td>
<td>3</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-017-m</td>
<td>Mirror chamfered all edges, 4mm thick screwed or fixed properly with silicon or approved adhesive material to wall</td>
<td>2</td>
<td>m²</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-018-m</td>
<td>UPVC trapped floor gully 4&quot; diameter with outlets and inlets as needed; including heavy duty grating, excavating, bedding, surrounding and connection to pipe work</td>
<td>5</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-035-m</td>
<td>1/2&quot; internal diameter galvanized water pipe (class B) fixed within walls including insulation, or fixed to walls with brackets or laid under ground including excavating, bedding, surrounding and backfilling. Rate also includes jointing, fittings, connections and testing.</td>
<td>10</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-036-m</td>
<td>3/4&quot; internal diameter galvanized (class B) water pipe fixed within walls including insulation, or fixed to walls with brackets or laid under ground including excavating, bedding, surrounding and backfilling. Rate also includes jointing, fittings, connections and testing.</td>
<td>10</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-041-m</td>
<td>1/2&quot; internal diameter stop valve to replace unserviceable existing one</td>
<td>2</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-042-m</td>
<td>3/4&quot; internal diameter stop valve to replace unserviceable existing one</td>
<td>2</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-049-m</td>
<td>3&quot; internal diameter UPVC drainage pipe (3.6mm thick) laid under ground including excavating, bedding, surrounding and back filling or fixed to wall with brackets or fixed within walls. Rate also includes jointing, fittings, connections and testing</td>
<td>15</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-050-m</td>
<td>4&quot; internal diameter UPVC drainage pipe (4.6mm thick) laid under ground including excavating, bedding, surrounding and back filling or fixed to wall with brackets or fixed within walls. Rate also includes jointing, fittings, connections and testing</td>
<td>10</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-052-m</td>
<td>8&quot; internal diameter cement drainage pipe (10mm thick) including excavating, bedding, surrounding, backfilling jointing, fittings, connections and testing</td>
<td>50</td>
<td>mr</td>
<td></td>
<td>0</td>
</tr>
<tr>
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<tr>
<td>plm-077-m</td>
<td>60cm internal diameter manhole, constructed of 15cm thick plain concrete 150/20 walls and base, 10cm thick reinforced concrete 200/20 cover slab, lean mix concrete margin, plain concrete 200/20 benching, UPVC half round channel, 50 kg medium duty cast iron cover and frame clear opening 570mm diameter set in.</td>
<td>4</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-108-m</td>
<td>White glazed fireclay washing basin 400x500mm complete with water mixer, waste fittings, trap, plug and chain with all associated water supply pipe work, waste to slab level, fixed to 30mm thick granite worktop, skirting, threshold, sill and 500mm height.</td>
<td>3</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-132-m</td>
<td>supply and fix plastic hose with shower out let (shataf) including necessary fittings</td>
<td>12</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-133-m</td>
<td>1/2&quot; dia. Chromium stop valve</td>
<td>6</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>plm-163-m</td>
<td>Supply and install flushing mechanism with ball for high level W.C. suit to replace unserviceable one</td>
<td>10</td>
<td>no</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Description</td>
<td>QTY</td>
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<td>Unit rate</td>
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</tr>
<tr>
<td>1/2&quot; internal diam. Plastic water pipe (channel) Saudi made or Adassani, or approved equal. Complete with all fitting, joints, connections, and testing.</td>
<td>30</td>
<td>mr</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>3/4&quot; internal diam. Plastic water pipe (channel) Saudi made or Adassani, or approved equal. Complete with all fitting, joints, connections, and testing.</td>
<td>30</td>
<td>mr</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Heavy duty (chromium) grating to existing floor gully</td>
<td>6</td>
<td>no</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Two coats of high quality external emulsion paint to wall and ceiling surfaces, including rubbing down existing deteriorated paint, if any, to plaster, preparing, stopping, repairing hair cracks and priming.</td>
<td>4050</td>
<td>m²</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Two coats oil paint to walls including rubbing down existing deteriorated paint, if any, to plaster, preparing, stopping, repairing hair cracks and priming.</td>
<td>3000</td>
<td>m²</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Two coats oil paint for door windows window protective grill, screen, blackboard or a like. Deteriorated paints should be treated properly prior painting.</td>
<td>200</td>
<td>m²</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Rub down existing painted surfaces to plaster, prepare stop, repair hair cracks, prime and paint two coats of acrylic based textured paint</td>
<td>1500</td>
<td>m²</td>
<td>0</td>
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<tr>
<td>Repair Roof expansion joint by removing exist. Cover, cleaning, applying new filler and new bitumen membrane 4mm 1m wide</td>
<td>20</td>
<td>mr</td>
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<td>Supply and construct Steel Frame at the left side of the building similar to the one used on the right side, but with additional steel beam under the slab, as shown in structural report figure 10. The contractor should design the steel structure to strengthen the slab, and the drawings and the calculations should be submitted to ICID HQ (A) for approval.</td>
<td>1</td>
<td>item</td>
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<tr>
<td>Door for toilet, as per attached drawings.</td>
<td>3</td>
<td>no</td>
<td>0</td>
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### General Maintenance at North Amman Area - ITBW – 3522000048

**Project Title:** General Maintenance at North Amman Area  
**Level 1: Mandatory**  
**Currency:**  
**Liquidated Damages:** JD 150/ Day  
**Project duration (days):** 72 Day

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<th>Code</th>
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<tr>
<td>A</td>
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<td>CON - Concrete Work</td>
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<tr>
<td>C</td>
<td>DEM - Demolishing &amp; Alteration</td>
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<td>D</td>
<td>ELC - Electrical Installation</td>
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<td>EXC - Excavation &amp; Earthworks</td>
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<td>G</td>
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<td>H</td>
<td>G - Metalwork</td>
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<td>I</td>
<td>PLM - Internal Plumbing</td>
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<td>K</td>
<td>PNT - Painting &amp; Decorating</td>
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<tr>
<td>L</td>
<td>ROF - Roofing</td>
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<td>M</td>
<td>RPR - Repairing Works</td>
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<td>O</td>
<td>WOD - Carpentry &amp; Joinery</td>
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**Overall total:** 0
Contract
For
Minor Works
With
Security Deposit
Index

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Tender Form TF/1 – TF/2
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5. Defects
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9. Statutory obligations
10. Liabilities and insurance
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12. Security Deposit
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Terms and Conditions of Invitation to Tender

(Contract for Minor Works with Security Deposit 2020)

DATE: insert date

1. Tenderers are invited for the construction of:
   insert project title (name), e.g. Construction/ Maintenance of ……….etc.

2. Tenders shall be submitted on or before 11:00 a.m.
   On: insert date
   At: insert location of tender box (place)
   in a sealed envelope plainly marked:
   project title (name)), e.g. Construction /Maintenance of ……….etc.

3. The following documents are attached hereto:
   a) Tender Form.
   b) Conditions of Contract for Minor Works.
   c) Appendix “A” to the Conditions of Contract.
   d) General Instructions and Notes on Pricing and Measurement.
   e) Quality Control Tests.
   f) Bills of Quantities.
   g) Drawings as listed in Appendix “B” to the Bills of Quantities.
   h) UNRWA’s Specifications for Building Maintenance and Medium Building Construction Works.
   i) Solar Specifications.

4. The Tenderer shall return all documents duly completed and signed within his tender.

5. Each tender shall be accompanied by the following:
   a) A security deposit valid for sixty (60) calendar days from the date of the last day of submission of tenders and made payable to UNRWA in the amount of [insert USD/JD/SYP figure equal to five per centum (5%) of the Agency estimate rounded off to the nearest thousand]. The security deposit will be returned to the unsuccessful tenderers within sixty (60) calendar days of the last day of submission of tenders.
   Security deposits shall be accepted only if they are:
      1) In the form of a bank guarantee or a stand-by letter of credit (LC); or
      2) In the form of a bank draft or certified cheque.
   Bank guarantees shall comply with the following conditions:
      1) Provided by a fully licensed bank acceptable to UNRWA;
      2) Approved by the authorized signatories;
      3) Registered and stamped by the bank; and
      4) Shall state the following conditions:
         i. A promise to pay the order to UNRWA or its successors;
         ii. Total amount of the legal currency;
         iii. Payment at UNRWA’s or its successor’s first demand without reservation;
         iv. Promise to remain unconditional and irrevocable and shall not be
restricted, delayed or in any way encumbered by any dispute that may arise between UNRWA and the Contractor; and

v. The period of validity.

b) A certified true copy of the Article of Association of the Company, Partnership or Firm, a certified copy of the Memorandum of Association, if any, a copy of the official gazette or gazettes showing the registration of the company, if any, or in the case of a sole owner, a signed statement indicating the name or names of the person or persons authorized to sign for him.

c) Information regarding the name or description of other work previously performed; value; date; architect or engineer responsible.

d) A cost analysis for each item of work contained in the Bills of Quantities, upon request.

NB: UNRWA may reject the Tender if any one of the above listed documents is not submitted with the Tender.

6. Tenders which are defective by reason of omissions, erasures, alterations or additions may be rejected as defective. UNRWA reserves to itself the right, however, to waive any such defect in Tenders received. It also reserves to itself, the right to reject any and all Tenders, including that of the lowest tenderer, for any reason whatsoever without disclosing the reason therefor.

7. Tenders will only be considered where unit rates are quoted in respect of every item required by the Tender documents; these unit rates shall be the sole basis on which Tenders will be considered.

8. The successful tenderer will be so informed by UNRWA, in writing, within a period of sixty (60) calendar days of the last day for submission of Tenders. The successful tenderer will then be required to sign the Contract and present the following documents:

a) A new security deposit in the amount of ten per centum (10%) of the total value of the Contract, such security deposit to be provided within five calendar days from the date of receipt of the notification of the acceptance of the tender. The security deposit must be (i) meet all of the applicable conditions as set forth under paragraph 5 (a) above, and (ii) valid from the date of the signature of Contract until the provisional acceptance of the work and forty (40) calendar days thereafter. It shall be retained by UNRWA as a security deposit subject to the relevant articles of the Contract. The temporary security deposit referred to in paragraph 5 (a) above shall be returned to the tenderer upon receipt by UNRWA of the aforesaid security deposit.

b) A proposed Program of work, upon request.

9. In the event, the successful tenderer fails or refuses to sign the Contract when requested by UNRWA, and/or fails or refuses to present the ten per centum (10%) security deposit the temporary security deposit referred to, in paragraph 5 (a) shall be forfeited.

10. In light of UNRWA’s contractual commitments to donors, UNRWA will publish the following information online:

a) Title of the contract/project,

b) Nature and purpose of the contract/project,

c) Name and address of the contractor, and

d) Amount of the contract/project.
Tender Form

(Contract for Minor Works with Security Deposit 2020)

TO: The United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA),

1. I/WE the undersigned have read and understood the Terms and Conditions of Invitation to Tender and the documents and drawings mentioned therein issued by your Chief Field Infrastructure and Camp Improvement Programme concerning the construction of:

   insert Project name (title) e.g. Construction/Maintenance of….etc.

   Hereinafter called the Works at:

   insert Site location, e.g. Jabal Amman 25th St.

2. I/WE return herewith the Contract documents (duly completed and signed) enclosed with the Terms and Conditions of Invitation to Tender.

3. I/WE bind ourselves to carry out the subject Works in strict accordance with the following documents:
   a) Tender Form.
   b) Conditions of Contract for Minor Works.
   c) Appendix “A” to the Conditions of Contract.
   d) General Instructions and Notes on Pricing and Measurement.
   e) Quality Control Tests.
   f) Bills of Quantities.
   g) Drawings as listed in Appendix “B” to the Bills of Quantities.
   h) UNRWA’s Specifications for Building Maintenance and Medium Building Construction Works.
   i) Solar Specifications.

   For the total sum of (insert Contract amount) on the basis of the quantities indicated in the Bills of Quantities and Summary, and to complete the said Works within insert period of Contract in weeks, commencing from the date the Site is handed over to me/us by the UNRWA.

4. This tender remains open to acceptance for a period of sixty (60) calendar days from 12:00 noon of the last day for submission of tenders.

5. I/WE enclose herewith security deposit for the amount of insert USD/JD/SYP, valid for sixty (60) calendar days from 12:00 noon of the last day for submission of tenders.

6. I/WE recognize that tenders will only be considered where unit rates are quoted in respect of every item required in the tender documents and that these unit rates will be the sole basis on which tenders will be considered.
7. I/WE enclose herewith:
   a) A certified copy of the Articles of Association of our Company, partnership or firm,
   b) A certified copy of its Memorandum of Association, if any,
   c) A copy of the official Gazette or Gazettes showing registration of the company, if any,
   d) Or in the case of a sole owner, a signed statement indicating the name or names of the person or persons authorized to sign for him.

8. I/WE enclose a list of works previously carried out by me/us, together with their value, date of construction and name of architect or engineer responsible.

9. I/WE bind ourselves to supply UNRWA with the cost analysis for each item of work contained in the Bills of Quantities, upon request.

10. I/WE recognize that the tender may be rejected by UNRWA without disclosing the reason therefor.

11. I/WE bind ourselves to supply UNRWA within five (5) calendar days from the date of receipt of notification of acceptance of my/our tender with a security deposit meeting all of the applicable conditions as set forth under paragraph 5 (a) above in page IT/2 and valid until forty (40) calendar days after the date of provisional acceptance of the Works, as notified to me/us in writing, in the amount of ten per centum (10%) of the total value of the Contract, to be retained by UNRWA as a security deposit in accordance with the General Conditions contained in the Contract, and upon request, the proposed Program of work.

12. If I/WE are the successful tenderer and fail or refuse to sign the Contract when requested by UNRWA and/or fail or refuse to present the ten per centum (10%) security deposit, I/WE agree that the enclosed temporary security deposit shall be forfeited to UNRWA.

Signature of Tenderer

Signature of Witness

Name of Tenderer

Name of Witness

Address

Address

Date

Date
Contract for Minor Works with Security Deposit 2020
No………………………………..  

This Contract made this insert date, e.g. eighth, second, thirteenth”etc.  

day of insert month and year e.g November, 2015  

by and between the United Nations Relief and Works Agency for Palestine  
Refugees in the Near East (UNRWA), hereinafter called the Agency, and  
insert Contractor’s name as shown in the company’s commercial registration  

hereinafter called the Contractor.  

W I T N E S S E T H  

Whereas the Agency is desirous of  
insert project title (name), e.g. Construction/ Maintenance of …….., etc.  

hereinafter called the Works at :  
insert Site location, e.g. ANC, Zarka, Omar Ibn Alkhattab St., …etc.  

and has caused Specifications and Bills of Quantities and Drawings as listed in  
Appendix B to the Bills of Quantities to be prepared showing and describing the work  
to be done; and  

Whereas the Contractor undertakes to do and construct the Works in accordance  
with the Contract Documents, as hereinafter defined at the rates shown in the  
Bills of Quantities including any adjustments made in the Summary.  
Now therefore it is hereby agreed as follows: -  
The Contractor shall complete the Works, including but not limited to state  
nature of intended works, e.g. construction of preparatory school at Jabal  
Altaj including external works and utilities as shown on drawings and in  
accordance with the conditions of the Contract
Conditions of Contract

1 DEFINITIONS AND INTERPRETATION

Definitions

1.1 “Works” means all the work necessary for the completion of the Contract including any variations ordered by the Director of Works.

1.2 “Contract” means the Agreement if any together with these Conditions of Contract the Appendix and other items listed in the Contract Schedule.

1.3 “Cost” means all expenditure properly incurred or to be incurred whether on or off the Site including overhead properly allocatable thereto but does not include any allowance for profit.

1.4 “Site” means the lands and other places on under in or through which the Works are to be constructed and any other lands or places provided by the Agency for the purposes of the Contract together with such other places as may be designated in the Contract or subsequently agreed by the Director of Works as forming part of the Site.

1.5 “Excepted Risks” are
(a) the use or occupation by the Agency its agents servants or other Contractors (not being employed by the Contractor) of any part of the Permanent Works
(b) any fault defect error or omission in the design of the Works (other than a design provided by the Contractor pursuant to his obligations under the Contract)
(c) riot war invasion act of foreign enemies or hostilities (whether war be declared or not)
(d) civil war rebellion revolution insurrection or military or usurped power
(e) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds.

Headings and marginal notes

1.6 The headings and marginal notes in the Conditions of Contract shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or the Contract.

2 DIRECTOR OF WORKS

Director of Works to be a named individual

2.1 The Agency shall appoint and notify the Contractor in writing or alternatively state in the Contract a named individual to act as the Director of Works. If at any time the Director of Works is unable to continue the duties required by the Contract the Agency shall forthwith appoint a replacement and shall so notify the Contractor in writing. If the Contractor was not notified of a named individual, the Director of Works shall be the Chief Field Infrastructure and Camp Improvement Programme.

2.2 The Director of Works may appoint a named Resident Site Engineer and/or other suitably experienced person to watch and inspect the Works and the Director of Works may delegate to such person in writing any of the powers of the Director of Works herein provided that prior notice in writing is given to the Contractor.
2.3 The Director of Works shall have power to give instructions for

(a) any variation to the Works including any addition thereto or omission therefrom
(b) carrying out any test or investigation
(c) the suspension of the Works or any part of the Works in accordance with Clause 2.6
(d) any change in the intended sequence of the Works
(e) measures necessary to overcome or deal with any obstruction of condition falling within Clause 3.8
(f) the removal and/or re-execution of any work or materials not in accordance with the Contract
(g) the elucidation or explanation of any matter to enable the Contractor to meet his obligations under the Contract
(h) the exclusion from the Site of any person employed thereon which power shall not be exercised unreasonably

2.4 The Director of Works or Resident Site Engineer and/or other suitably experienced person who exercises any delegated power shall upon the written request of the Contractor specify in writing under which of the foregoing powers any instruction is given. If the Contractor is dissatisfied with any such instruction he shall be entitled to refer the matter to the Director of Works for the decision.

2.5 The Director of Works may order in writing that any work shall be executed on a Day work basis. Subject to the production of proper records the Contractor shall then be entitled to be paid in accordance with a Day work Schedule included in the Contract or otherwise in accordance with a “Schedules of Day works” to be agreed in writing between the Agency and the Contractor.

2.6 (1) The Director of Works may order the suspension of the progress of the Works or any part thereof and in such event may issue such instruction as may in his opinion be necessary to protect and secure the Works during the period of suspension.

(2) If permission to resume work is not given by the Director of Works within a period of 60 Calendar Days from the date of the written Order of Suspension then the Contractor may serve a written notice on the Director of Works requiring permission to proceed with the Works within 14 Calendar Days from the receipt of such notice. Subject to the Contractor not being in default under the Contract the Director of Works shall grant such permission and if such permission is not granted the Contractor may by a further written notice served on the Director of Works elect to treat the suspension where it affects a part of the Works as an omission under Clause 2.3(a) or where the whole of the Works is suspended as an abandonment of the Contract by the Agency. In this event the Contractor shall be informed, and final quantities shall be assessed by the parties not later than twenty-eight (28) Calendar Days from the date of the order to stop work. The Contractor shall be compensated, taking into consideration payments hitherto made to the Contractor and the state of completion of the Works, in an amount to be agreed by the parties hereto.
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
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</table>
| 2.7     | Each party shall be bound by and give effect to every instruction or decision of the Director of Works unless and until either  
|         | (a) it is altered or amended by an agreed settlement following a reference under Clause 11.1 and neither party gives notice of dissatisfaction therewith  
|         | or  
|         | (b) it is altered or amended by a decision of an arbitrator under Clause 11.2  

3 GENERAL OBLIGATIONS

**Contractor to perform and complete the Works**  
3.1 The Contractor shall perform and complete the Works and shall (subject to any provision in the Contract) provide all supervision labour materials plant transport and temporary works which may be necessary therefore.

**Responsibility for care of the Works**  
3.2 (1) The Contractor shall take full responsibility of the care for the Works from the starting date until the Director of Works issues a Certificate of Provisional Acceptance for the whole of the Works pursuant to Clause 4.5.  
(2) If the Director of Works issues a Certificate of Provisional Acceptance in respect of any part of the Works before completion of the whole of the Works the Contractor shall cease to be responsible for the care of that part of the Works and the responsibility of its care shall then pass to the Agency.  
(3) The Contractor shall take full responsibility for the care of any outstanding work which he has undertaken to finish during the Defects Correction Period until such outstanding work is complete.

**Contractor to repair and make good**  
3.3 (1) In case any damage loss or injury from any cause whatsoever (save and except the Excepted Risks) shall happen to the Works or any part thereof while the Contractor is responsible for their care 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 conform in every respect with the requirements of the Contract and the instructions of the Director of Works.  
(2) To the extent that any damage, loss or injury arises from any of the Expected Risks the Contractor shall if required by the Director of Works repair and make good the same at the expense of the Agency.  
(3) 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 completing outstanding work or complying with his obligations under Clauses 4.7 and 5.2.

**Contractor’s authorized representative**  
3.4 The Contractor shall notify the Director of Works of the person duly authorized to receive instructions on behalf of the Contractor.
### Setting out and safety of site operations

**3.5** The Contractor shall take full responsibility for the setting out of the Works and for the adequacy, stability and safety of his site operations and method of construction. In particular, the Contractor shall be responsible for the implementation of the safety requirements listed in the Appendix.

### Director of Works to provide necessary information

**3.6** Subject to Clause 3.5 the Director of Works shall be responsible for the provision of any necessary instructions, drawings or other information.

### Contractor’s responsibility for design

**3.7**

1. The Contractor shall not be responsible for the design of the Works except where expressly stated in the Contract.

2. The Contractor shall be responsible for the design of any temporary works other than temporary works designed by the Director of Works.

3. The Contractor shall exercise all reasonable skill, care and diligence in designing any part of the Permanent Works for which he is responsible.

### Adverse physical conditions and artificial obstructions - delay and extra cost

**3.8**

1. If during the carrying out of the Works the Contractor encounters any artificial obstruction or physical condition (other than a weather condition due to weather) which obstruction or condition could not in his opinion reasonably have been foreseen by an experienced Contractor the contractor shall as early as practicable give written notice thereof to the Director of Works.

2. If in the opinion of the Director of Works such obstruction or condition could not reasonably have been foreseen by an experienced Contractor then the Director of Works shall issue a variation certifying a fair and reasonable sum and the Agency shall pay such sum to cover the Cost of performing any additional work or using any additional plant or equipment as a result of:

   - (a) complying with any instructions which the Director of Works may issue
   - and/or
   - (b) taking proper and reasonable measures to overcome or deal with the obstruction or condition in the absence of instruction from the Director of Works.

   Failing agreement of such sums the Director of Works shall determine the fair and reasonable sum to be paid.

### Facilities for other Contractors

**3.9** The Contractor shall in accordance with requirements of the Director of Works afford reasonable facilities for any other Contractor employed by the Agency and for any other properly authorized authority employed on the Site.
4 STARTING AND COMPLETION

Starting work 4.1 The Agency shall give the Contractor at least seven (7) Calendar Days’ notice, in writing, of the date the Site will be handed over. The Contractor shall commence work within five (5) Calendar Days of the date of handing over of the Site and shall carry it out with all due diligence and without delay.

The Agency shall hand over the Site to the Contractor within ninety (90) Calendar Days of the date of this Contract unless otherwise agreed by the parties in writing. Should the Agency fail to hand over the Site to the Contractor within the period specified or within the period agreed in writing, the Contractor may serve notice on the Agency, cancelling the Contract.

Period for completion 4.2 The period or periods for completion shall be as stated in the Appendix or such extended time as may be granted under Clause 4.4 and shall commence on the starting date. The starting date shall be deemed not to exceed 5 Calendar Days after the Site handover (Clause 4.1).

Contractor’s programme 4.3 The Contractor shall within 14 Calendar Days after Site handover (Clause 4.1) if so required provide a programme of his intended activities. The Contractor shall at all times proceed with the Works with due expedition and reasonably in accordance with his programme or any modification thereof which he may provide or which the Director of Works may request.

Extension of the period for completion 4.4 If the period for completion of the Works or any part thereof is delayed for any of the following reasons

(a) an instruction given under Clause 2.3 (a) (c) or (d)
(b) an instruction given under Clause 2.3 (b) where the test or investigation fails to disclose non-compliance with the Contract
(c) encountering an obstruction or condition falling within Clause 3.8 and/or an instruction given under Clause 2.3 (e)
(d) delay in receipt by the Contractor of necessary instructions drawings or other information
(e) failure by the Agency to give adequate access to the Works or possession of land required to perform the Works
(f) delay in receipt by the Contractor of materials to be provided by the Agency under the Contract
(g) exceptional adverse weather
(h) other special circumstances of any kind whatsoever which in the opinion of the Agency are outside the control of the Contractor

then provided that the Contractor has taken all reasonable steps to avoid or minimize the delay the Director of Works shall upon a written request by the Contractor promptly by notice in writing grant such extension of time for completion of the whole or part of the Works as may in his opinion be reasonable. The extended period or periods for completion shall be subject to regular review provided that no such review shall result in a decrease in any extension of time already granted by the Director of Works.
Certificate of Provisional Acceptance of Works or part of Works

4.5 (1) Provisional Acceptance of the whole of the Works shall occur when the Works reach a state when notwithstanding any defect or outstanding items therein, they are taken or are fit to be taken into use or possession by the Agency.

(2) Similarly Provisional Acceptance of part of the Works may also occur if so required by the Agency but only if it is fit for such part to be taken into use or possession independently of the remainder.

(3) The Director of Works shall upon the Contractor’s written request issue a Certificate of Provisional Acceptance certifying in writing the date on which the Works or any part thereof has reached Provisional Acceptance or otherwise advise the Contractor in writing of the work necessary to achieve Provisional Acceptance.

Liquidated damages

4.6 If by the end of the period or periods for completion (Clause 4.2) the Works have not reached the Provisional Acceptance stage the Contractor shall be liable to the Agency in the sum stated in the Appendix as liquidated damages for every day during which the Works so remain uncompleted up to the limit stated in the Appendix reduced in proportion to the value of those parts which have been certified as complete provided that the said limit shall not be reduced.

Provided that if after liquidated damages have become payable in respect of any part of the Works the Director of Works issues a variation under Clause 2.3(a) or an artificial obstruction or physical condition within the meaning of Clause 3.8 is encountered or any other situation outside the Contractor’s control arises any of which in the opinion of the Director of Works results in further delay to the completion of that part of the Works.

(a) the Director of Works shall so inform the Contractor in writing and

(b) the Agency’s further entitlement to liquidated damages in respect of that part of the Works shall be suspended until the Director of Works notifies the Contractor in writing that the further delay has come to an end.

Such suspension shall not invalidate any entitlement to liquidated damages which accrued before the period of delay started to run and any monies deducted or paid in accordance with this Clause may be retained by the Agency without incurring interest thereon.

Rectification of defects

4.7 The Contractor shall rectify any defects and complete any outstanding items in the Works or any part thereof which reach the Provisional Acceptance stage promptly thereafter or in such a manner and/or time as may be agreed or otherwise accepted by the Director of Works. The Contractor shall maintain any parts which reach Provisional Acceptance in the condition required by the Contract until Provisional Acceptance of the whole of the Works fair wear and tear excepted.

5 DEFECTS

Definition of Defects Correction Period

5.1 “Defects Correction Period” means the period stated in the Appendix which period shall run from the date certified as Provisional Acceptance of the whole of the Works or the last period thereof.

Cost of remedying defects

5.2 If any defects appear in the Works during the Defects Correction Period which are due to the use of materials or workmanship not in accordance
with the Contract the Director of Works shall give written notice thereof and the Contractor shall make good the same at his own cost.

**Remedy for Contractor’s failure to correct defects**

5.3 If any such defects are not corrected within a reasonable time by the Contractor the Agency may after giving 14 Calendar Days written notice to the Contractor employ others to correct the same and the cost thereof shall be payable by the Contractor to the Agency.

**Director of Works to certify Final Acceptance**

5.4 Upon the expiry of the Defects Correction Period and when any outstanding work notified to the Contractor under Clause 5.2 has been made good the Director of Works shall upon the written request of the Contractor issue a Certificate of Final Acceptance certifying the date on which the Contractor completed his obligations under the Contract to the Director of Works’ satisfaction.

**Unfulfilled obligations**

5.5 Nothing in Clause 5 shall affect the rights of either party in respect of defects appearing after the Defects Correction Period.

6  **ADDITIONAL PAYMENTS**

**Director of Works to determine additional sums and deductions**

6.1 If the Contractor carries out additional works or incurs additional cost as a result of any of the matters referred to in paragraphs (a) (d) or (e) of Clause 4.4 the Director of Works shall certify and the Agency shall pay to the Contractor such additional sum as the Director of Works, after consultation with the Contractor, considers fair and reasonable. Likewise the Director of Works shall determine a fair and reasonable deductions to be made in respect of any omission of work.

6.2 Same measures under 6.1 shall apply to paragraph (b) of Clause 4.4, only to the extent that those tests and investigations

(i) are not covered by the Contract and

(ii) the results do not fail the required standards.

**Valuation of additional work**

6.3 In determining a fair and reasonable sum under Clause 6.1 for additional work the Director of Works shall have regard to the prices contained in the Contract.

7  **PAYMENT**

**Valuation of the Works**

7.1 Payments under this Contract shall be on the basis of the quantities and the unit rates of the work actually ordered to be done and completed by the Contractor and not by way of a lump sum, the aforesaid payments shall be made in MONTHLY Instalment, each payment being certified by the Director of Works.

**Interim statements**

7.2 The Contractor shall submit to the Director of Works interim statements at intervals included for in the Appendix showing the estimated value of the Works executed up to the end of that period together with a list of any goods or materials delivered to the Site and their value and any other items which the Contractor considers should be included in an Interim Certificate.

**Interim payments**

7.3 Within 20 Calendar Days of the delivery of such statement the Director of Works shall certify and the Agency shall pay to the Contractor such sum as the Director of Works considers is properly due. The Director of Works
may by any certificate delete correct or modify any sum previously certified by him.

**Contractor to submit final account**

**7.4** Within 20 Calendar Days after the issue of the Director of Works certificate under Clause 4.5 the Contractor shall submit a final account to the Director of Works together with any documentation reasonably required to enable the Director of Works to ascertain the final contract value. Within 20 Calendar Days after the receipt of this information the Director of Works shall issue the Final Certificate. The Agency shall pay to the Contractor the amount due thereon within 20 Calendar Days of the issue of the Final Certificate. This Final Certificate will be the Contractor’s final account less Security Deposit during Defects Correction Period (Clause 12.3).

**7.5** The Final Certificate shall save in the case of fraud or dishonesty relating to or affecting any matter dealt with in the certificate conclusive evidence as to the sum due to the Contractor under or arising out of the Contract unless either party has within 28 Calendar Days after the issue of the Final Certificate given notice under Clause 11.1.

**8 ASSIGNMENT AND SUB-CONTRACTING**

**Assignment**

**8.1** Neither the Agency nor the Contractor shall assign the Contract or any part thereof or any benefit or interest therein or thereunder without the written consent of the other party which consent shall not unreasonably be withheld.

**No Sub-contracting without consent of the Director of Works**

**8.2** The Contractor shall not Sub-contract the whole of the Works. The Contractor shall not Sub-contract any part of the Works without the consent of the Director of Works which consent shall not unreasonably be withheld.

**Contractor responsible for Sub-contractors**

**8.3** The Contractor shall be responsible for any acts defaults or neglects of any Sub-contractor, his agents, servants or workmen in the execution of the Works or any part thereof as if they were the acts defaults or neglects of the Contractor.

**9 STATUTORY OBLIGATIONS**

**Contractor to comply with statutory requirements**

**9.1** The Contractor shall comply with and give all notices required by any statute, statutory instrument, rule or order or any regulation or by-law applicable to the construction of the Works (hereinafter called “the statutory requirements”) and shall pay all fees and charges which are payable in respect thereof.

**Agency to obtain consents**

**9.2** The Agency shall be responsible for obtaining in due time any consent approval licence or permission but only to the extent that the same may be necessary for the Works in their permanent form.

**10 LIABILITIES AND INSURANCE**

**Workmen’s Compensation Insurance**

**10.1** (1) The Contractor shall at all times be liable for, shall indemnify the Agency in respect of, and shall maintain at his expense such insurance with a Company approved by the Director of Works that will protect him as well as the Agency from any and all claims, damages, losses
and expenses arising or resulting from injury, sickness, disease or death of any of person employed by the Contractor.

(2) The Workmen’s Compensation Insurance must also cover the activities and employees of any Sub-contractors of the Contractor.

**Third Party / Public Liability Insurance**

10.2 The Contractor shall at all times be liable for, shall indemnify the Agency in respect of, and shall maintain at his expense such insurance with a company approved by the Director of Works that will protect him as well as the Agency from any and all claims for damages, including those from Agency employees, due to bodily injury or death of any persons as well as from claims due to damage to adjoining or other real or personal property which may arise from and during operations under this Contract whether such operations be by himself or by any Sub-contractor or anyone directly or indirectly employed by him. This insurance shall be in an amount which is satisfactory to the Director of Works.

**Fire Insurance**

10.3 (1) The Contractor shall at all times be liable for and shall indemnify the Agency in respect of all damage occasioned by fire and shall maintain at his expense Fire Insurance upon the entire structure on which the work of this Contract is to be done to one hundred per centum (100%) of the insurable value thereof unless the Director of Works decides otherwise, including items of labour and materials connected therewith, whether in or adjacent to the Works insured, and materials in place or to be used as part of the Works.

(2) The Contractor shall provide said Fire Insurance in the joint names of himself and the Agency. Any loss sustained is to be made adjustable and payable to the Agency.

(3) This insurance will not cover any tools, equipment or plant owned by the Contractor, his mechanics or Sub-contractors since the provision for this insurance is designed for the sole protection of the Agency and its property.

(4) The Fire Insurance must also cover the activities of any Sub-contractor, and those deemed to be Sub-contractors.

**Insurance in the joint names**

10.4 Insurance under Clauses 10.1 to 10.3 shall be in the joint names of the Agency and the Contractor, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated between the Agency and the Contractor for the sole purpose of rectifying the loss or damage.

**Contractor’s non-compliance with insurance requirements**

10.5 If the Contractor fails or refuses to provide the aforesaid insurance, the Agency may, at its discretion, after notice as provided for in the Contract, cancel this Contract and/or utilize the Security Deposit as well as any sums due to the Contractor, and procure the insurance on behalf of the Contractor without prejudice to any other rights that it may have in law or equity.
11 DISPUTES

Settlement of disputes 11.1 (1) If any dispute or difference of any kind whatsoever shall arise between the Agency and the Contractor in connection with or arising out of the Contract or the carrying out of the Works whether arising during the progress of the Works or after their completion it shall be settled according to the following provisions.

(2) In the event of any dispute arising from the interpretation or application of the terms and conditions of this Contract because of translation into other languages the English version shall be considered as the authentic text.

(3) Any dispute shall be decided according to the provisions of this Contract. To the extent that these provisions do not fully cover the particular matter in dispute recourse may be had to the general principles of law and the Lex Loci Contractus shall not have any overriding effect but may afford evidence of such general principles.

Appointment of arbitrator 11.2 Any dispute arising out of the interpretation or application of the terms of this Contract shall, unless settled by direct negotiations, be referred to an Arbitrator who shall be appointed jointly by the parties. Should the parties not agree within thirty (30) Calendar Days after request for arbitration by either party as to the choice of the Arbitrator, the appointment shall be made by the Secretary General of the Permanent Court of Arbitration (PCA) upon request of either party in accordance with the Permanent Court of Arbitration Optional Rules for Arbitration between International Organizations and Private Parties in force on the date of this Contract (the “PCA Arbitration Rules”). The decision of the Arbitrator shall be final and binding upon the parties. It is understood, however, that the provisions of this Clause and the submission of the Agency to an Arbitrator do not constitute a waiver by the Agency of its immunity from any form of legal process.

12 SECURITY DEPOSIT

Performance Security Deposit 12.1 At or before the signing of this Contract, the Contractor shall provide and constantly maintain a valid Bank Guarantee (or a cash deposit) in a sum amounting to ten percentum (10%) of the total amount of the Contract which shall be retained by the Agency as security for the faithful performance of this Contract until Provisional Acceptance of the Works and for forty Calendar Days thereafter, subject, however, to the provisions of Clause 12.3 below.

Agency’s right to appropriate the Security Deposit 12.2 Should the Contractor breach any of the terms and conditions of the Contract by his acts or omission, the Agency shall request him to remedy the breach. Should the Contractor fail to remedy the breach, the Agency shall serve notice on him requiring him to remedy the breach within such period of time as it shall fix. In the event the Contractor fails or refuses to remedy the breach within the time fixed, the Agency shall have the right to appropriate the said Security Deposit or any portion thereof and/or withhold any sums due to the Contractor without prejudice to any other rights which it may have in law or equity to cover any loss of damage which it may have incurred or sustained as a consequence thereof.
12.3 The Agency shall return the Security Deposit, or the remaining part of it in case part of it has been appropriated, to the Contractor within the forty Calendar Days period stipulated in clause 12.1 above, providing that a new Security Deposit in the sum of five percentum (5%) of the amount of the Contract is provided by the Contractor and given to the Agency as security for any defect which may be found in the Works during the period from Provisional Acceptance to Final Acceptance (Defects Correction Period).

13 **TERMINATION OF CONTRACT**

Without prejudice to the terms of this Contract, the Agency may terminate the Contract if the Contractor should be adjudged a bankrupt, or if he becomes insolvent, or if he persistently disregards the instructions of the Director of Works, or if he has committed any other breach of this Contract. In such event, the Agency may appropriate the Security Deposit and/or withhold any sums due to the Contractor without prejudice to any other rights which it may have in law.

14 **SAFETY MEASURES**

The Contractor is responsible for providing as is reasonably practicable, a safe and healthy working environment for his employees and others, who may be present on or in the immediate vicinity of the construction site. The Agency reserves the right to refuse permission to execute Works or to defer payments to the Contractor if the Works are unsafe or if adequate safety measures are not implemented. The safety measures as noted in the Appendix shall be required as minimum measures and the execution of which shall not relieve the Contractor from his overall responsibility for safety of the Site and operations.

15 **TAX EXEMPTION**

15.1 Article II, Section 7, of the Convention on the Privileges and Immunities of the United Nations provides, inter alia, that the United Nations, including its subsidiary organs (including the Agency), is exempt from all direct taxes, except charges for public utility services, and is exempt from customs restrictions, duties, and charges of a similar nature in respect of articles imported or exported for its official use. In the event any governmental authority refuses to recognize the exemptions of the Agency from such taxes, restrictions, duties, or charges, the Contractor shall immediately consult with the Agency to determine a mutually acceptable procedure.

15.2 The Contractor authorizes the Agency to deduct from the Contractor’s invoices any amount representing such taxes, duties or charges, unless the Contractor has consulted with the Agency before the payment thereof and the Agency has, in each instance, specifically authorized the Contractor to pay such taxes, duties, or charges under written protest. In that event, the Contractor shall provide the Agency with written evidence that payment of such taxes, duties or charges has been made and appropriately authorized, and the Agency shall reimburse the Contractor for any such taxes, duties, or charges so authorized by the Agency and paid by the Contractor under written protest.
The Agency shall not be liable to the Contractor for any indirect taxes, including those that Contractor has to pay in connection with the Works such as, without limitation, value-added tax (VAT) relating to equipment and materials purchased by the Contractor or services received by the Contractor.

OFFICIALS NOT TO BENEFIT

The Contractor warrants that no official of the Agency has received or will be offered by the Contractor any direct or indirect benefit arising from the Contract or the award thereof. The Contractor agrees that breach of this provision is a breach of an essential term of this Contract.

CHILD LABOUR

The Contractor represents and warrants that neither it, its parent entities (if any), nor any of the Contractor’s subsidiary or affiliated entities (if any) is engaged in any practice inconsistent with the rights set forth in the Convention on the Rights of the Child, including Article 32 thereof, which, inter alia, requires that a child shall be protected from performing any work that is likely to be hazardous or to interfere with the child’s education, or to be harmful to the child’s health or physical, mental, spiritual, moral, or social development. The Contractor acknowledges and agrees that the provisions hereof constitute an essential term of the Contract and that any breach of this representation and warranty shall entitle the Agency to terminate the Contract immediately upon notice to the Contractor, without any liability for termination charges or any other liability of any kind.

FORCED OR COMPULSORY LABOUR

The Contractor represents and warrants that neither it, its parent entities (if any), nor any of the Contractor’s subsidiary or affiliated entities (if any) employs “forced or compulsory labour” in any form. “Forced or compulsory labour” consists of all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty. The Contractor acknowledges and agrees that the provisions hereof constitute an essential term of the Contract and that any breach of this representation and warranty shall entitle the Agency to terminate the Contract immediately upon notice to the Contractor, without any liability for termination charges or any other liability of any kind.

MINES

The Contractor represents and warrants that neither it, its parent entities (if any), nor any of the Contractor’s subsidiaries or affiliated entities (if any) is engaged in the sale or manufacture of anti-personnel mines or components utilized in the manufacture of anti-personnel mines. The Contractor acknowledges and agrees that the provisions hereof constitute an essential term of the
Contract and that any breach of this representation and warranty shall entitle the Agency to terminate the Contract immediately upon notice to the Contractor, without any liability for termination charges or any other liability of any kind.

20SEXUAL EXPLOITATION

The Contractor shall take all appropriate measures to prevent sexual exploitation or abuse of anyone by its employees or any other persons engaged and controlled by the Contractor to perform any services under the Contract. For these purposes, sexual activity with any person less than eighteen years of age, regardless of any laws relating to consent, shall constitute the sexual exploitation and abuse of such person. In addition, the Contractor shall refrain from, and shall take all reasonable and appropriate measures to prohibit its employees or other persons engaged and controlled by it from exchanging any money, goods, services, or other things of value, for sexual favours or activities, or from engaging any sexual activities that are exploitive or degrading to any person. The Contractor acknowledges and agrees that the provisions hereof constitute an essential term of the Contract and that any breach of these provisions shall entitle the Agency to terminate the Contract immediately upon notice to the Contractor, without any liability for termination charges or any other liability of any kind.

The Agency shall not apply the foregoing standard relating to age in any case in which the Contractor’s personnel or any other person who may be engaged by the Contractor to perform any services under the Contract is married to the person less than the age of eighteen years with whom sexual activity has occurred and in which such marriage is recognized as valid under the laws of the country of citizenship of the Contractor’s personnel or such other person who may be engaged by the Contractor to perform any services under the Contract.

21TERRORISM

The Contractor represents and warrants that neither it, its parent entities (if any), nor any of the Contractor’s subsidiary, affiliated entities (if any), suppliers, personnel and employees is engaged in any transactions with, and/or the provision of resources and support to, individuals and organisations associated with, receiving any type of training for, or engaged in, any act or offense described in Article 2, Sections 1, 3, 4 or 5 of the International Convention for the Suppression of the Financing of Terrorism, adopted by the General Assembly of the United Nations in Resolution 54/109 of 9 December 1999. The Contractor acknowledges and agrees that the provisions hereof constitute an essential term of the Contract and that any breach of this representation and warranty shall entitle the Agency to terminate the Contract immediately upon notice to
the Contractor, without any liability for termination charges or any other liability of any kind.

HOST COUNTRY REQUIREMENTS FOR COVID-19 PANDEMIC

Given the prevailing situation presented by the COVID-19 pandemic and until the Host Government declares that the effect of this pandemic is contained and no more precautions are required, the Contractor is reminded that it will be required to abide by all relevant Host Government and Agency instructions on health and safety procedures and protection measures to limit the spread of COVID-19.

UNRWA expects the Contractor to openly communicate with the Agency about any emerging situation, identifying the challenges presented, in order for the Contractor and the Agency to work toward mutually acceptable resolutions in accordance with the terms of the contract. As per the contract, UNRWA reserves the right to inspect the Site to monitor that at all stages of the project all relevant health and safety requirements are adhered to by the Contractor, and to exercise any and all remedies under the contract.

In particular, the Contractor will be required to demonstrate that it has incorporated COVID-19 transmission and prevention measures into all job hazard analyses and pre-task safety planning for all work activities as needed.

MISCELLANEOUS

Waiver

23.1 No waiver or waiver of any breach, of any provision of this Contract shall be deemed to be a waiver of any other provision or of any future breach of that provision.

Applicable Law

23.2 This Contract shall be governed by and construed in accordance with general principles of international commercial law. If any term, covenant, or condition of this Contract or the application thereof to any person or circumstance shall to any extent be determined to be invalid or unenforceable, the remainder of this Contract, or the application of such term, covenant or condition to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby and each term, covenant, or condition of this Contract shall remain valid and be enforced to the fullest extent possible.

Entire Agreement

23.3 This Contract and its Appendix may be modified or amended only upon the written agreement of the parties, and this Contract and its Appendix, as amended, represent the entire agreement and understanding between the parties with respect to the subject matter hereof.
IN WITNESS WHEREOF the parties hereto by their duly authorized representatives have set their hands to duplicates, both of which shall be deemed as original, the day and year first above written.

For and on behalf of the Contractor

For and on behalf of the Agency

W I T N E S S E S (*)

<table>
<thead>
<tr>
<th>Signature</th>
<th>Name</th>
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* if necessary
Appendix “A” to the Conditions of Contract

(to be prepared before tenders are invited and to be included with the documents supplied to prospective tenderers)

1. Name of Director of Works (Clause 2.1)

2. Name of the Resident Site Engineer (Clause 2.2)

3. Period for completion (Clause 4.2)

4. Periods for completion of parts of the Works if applicable and details of the work to be carried out within each such part (Clause 4.2)

<table>
<thead>
<tr>
<th>Details of Work</th>
<th>Period for completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part A</td>
<td></td>
</tr>
<tr>
<td>Part B</td>
<td></td>
</tr>
</tbody>
</table>

5. Liquidated damages (Clause 4.6)

6. Defects Correction Period (Clause 5.1)

7. Amount of Performance Security 10% (Clause 12.1)

8. Amount of Defects Correction Security 5% (Clause 12.3)

9. Safety Measures:

Notwithstanding overall safety requirements the Contractor’s attention is drawn to the following specific requirements in particular:

**Hard Hat**

All employees, visitors, office staff must wear a hard hat on the job site.

**Foot Protection**

Sturdy shoes must be worn; safety shoes are preferred. Sandals or open toes shoes are not permitted. Rubber boots must be worn for work in concrete or other caustic type materials.

**Eye & Face Protection**

Protective eye or face protection must be worn when operating machinery which present potential eye or face injury from physical, chemical or radiation agents.
<table>
<thead>
<tr>
<th>Section</th>
<th>Requirements</th>
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<tbody>
<tr>
<td><strong>First Aid</strong></td>
<td>Basic first aid facilities must be available on site.</td>
</tr>
<tr>
<td><strong>Ladders</strong></td>
<td>Ladders must be constructed of sound materials and in good condition. Ladders must be properly secured and extend at least 1.0 meters above the landing.</td>
</tr>
<tr>
<td><strong>Scaffolds</strong></td>
<td>All scaffolding must be erected and maintained to conform with established standards. All scaffolding must have solid footing and anchoring. All scaffolds must be at least 4 boards wide. No employee should be permitted to work from a single plank.</td>
</tr>
<tr>
<td><strong>Materials handling &amp; Storing</strong></td>
<td>All materials must be properly stocked and secured to prevent sliding, falling or collapse. Materials and equipment must be stored/stacked in an organised manner.</td>
</tr>
<tr>
<td><strong>Electrical and Mechanical Tools &amp; Equipment</strong></td>
<td>All Electrical and Mechanical tools and equipment used on the job site must conform to the requirements of standard codes. All exposed metal parts of electrical tools and equipment must be sufficiently earthed. Only employees who are authorized and who are sufficiently trained are permitted to work on or repair electrical equipment.</td>
</tr>
<tr>
<td><strong>Safety Barriers at Floor Openings and Stairwells</strong></td>
<td>All significant openings, which are more than 2.0 meters above ground level, must have adequate clearly marked safety barriers. All barriers must be securely fixed to the existing superstructure by a suitable approved fixing assembly. All barriers are subject to the approval of the Director of Works or his representative.</td>
</tr>
<tr>
<td><strong>Housekeeping</strong></td>
<td>All stairways, passageways and gangways shall be kept free from materials, supplies and obstructions of every kind. Materials and supplies shall be kept away from the edges of hoistways, stairways, floor openings and suspended slabs. Protruding nails in re-useable boards, planks, and timbers shall be removed. Protruding nails in scrap timber shall be bent flush, hammered-in or removed. All open sides, which are 2.0 meters above ground level must be clearly demarked either with guard rails, or a suitable visual barrier (e.g. plastic tape, etc.). Adequate barricades, signs etc. must be provided as required at or near trenches or other excavations.</td>
</tr>
</tbody>
</table>
General Instructions and Notes on Pricing and Measurement

1. Generally

(A) Description

The description given against the items in the Bills of Quantities do not necessarily describe fully all the work to be performed. The Contractor shall refer to the Contract Documents and these Notes wherein the work to be executed and the materials supplied for each item in the Bills of Quantities is fully shown and/or described.

(B) Measurements

a) Unless otherwise stated, all work has been and/or will be measured net as executed or fixed in place with no allowance made for laps or waste.

b) The dimensions given in the Bills of Quantities are generally in the sequence LENGTH-WIDTH-HEIGHT.

c) All quantities have been taken up or down to the nearest meter (or other unit) and where exactly half a meter (or other unit) results the quantities have been taken to the meter (or other unit) above. The same procedure will be followed for any re-measurements.

d) The quantities given for each item in the Bills of Quantities are the estimated quantities of the work to be executed. Re-measurement of the works shall be carried out and the measurements recorded in a measurement book to be agreed by the Contractor and the Director of Works representative.

e) The quantities for items stated to be provisional in the Bills of Quantities are indicative only where the exact nature of the works cannot be determined at the time of the production of Contract documents, and these shall be re-measured in accordance with the instructions given hereafter.

f) The quantities for works under provisional sums shall be estimated by the Director of Works before instructing any works under this sum. The value of the final works shall be determined in accordance with actual quantities after re-measurement or on the basis of lump sum as the case may be in the original instructions of the Director of Works.

(C) Pricing

a) The Contractor shall satisfy himself as to the meaning of every item in the bills of quantities and the rates and prices inserted by the Contractor against the items shall be deemed to include for all his obligations under the Contract and for all other matters and things necessary for the proper construction, completion and maintenance of the Works including, but not limited to, all temporary work, the provision and use of all plant and equipment (both mechanical and non-mechanical): Shifting, altering and adapting the temporary work, plant and equipment as required during the progress of the Works and
removing on completion including making good any work or surface disturbed; providing samples of materials and/or workmanship as detailed in the Specification; the provision of bonds and guarantees; all work in connection with the measurement of the Works and the preparation of the final account, profit, all establishing charges, overheads and other on-costs of whatsoever nature. No claim will be considered in respect of any or all these items.

b) Prices for all items shall be deemed to include for all straight raking and circular cutting and consequent waste.

c) The Contractor shall price all items which he considers to have a value. Items which are not priced by the Contractor will be deemed to be of no value and their price has been included in the price of other items.

d) The Contractor shall produce a detailed analysis of his unit rates to the Director of Works within twenty-four (24) hours of being requested to do so.

e) The Contractor is requested to price identical items in the Bills of Quantities at the same rates.

f) Contractors are instructed not to give discount on the summary page of the tender. If a discount is offered on the summary page as lump sum or as a percentage, the Agency shall at its own discretion, and with no need for the approval of the bidder, calculate the discount as a percentage of the total value of the bid and apply that percentage on each unit rate offered.

(D) **Quantities**

a) The quantities given in the Bills of Quantities have been calculated from the drawings listed in Appendix “B” in accordance with the method of measurements stated under the trade headings set out hereinafter.

b) The quantities given in the Bills of Quantities may be used as a basis for ordering materials, but should be checked before any orders are placed. No claim for extra or delay will be entertained should the quantities given in the Bill of Quantities prove to be inaccurate.
2. **EXCAVATION AND EARTHWORKS**

(A) **Measurements**

a) Excavation shall be measured by cubic volume. The volume shall be calculated by taking the area of the slab, bed, footing, base and the like and multiplying by the vertical depth. No allowance will be made for increase in bulk after excavation. No allowance will be made for working space.

b) Trench excavation for drain and water pipes and electricity cables and excavation for manholes and percolation pits is included in the items of pipework, cabling manholes and percolation pits and will not be measured separately.

c) Hardcore or Granular Fill beds shall be measured by cubic volume. The volume shall be calculated by taking the area of the bed and multiplying by the consolidated depth, including finishing, to a maximum depth of 15cm. Filling required below this 15cm depth is intended to be of suitable materials from the excavation and no extra will be paid for Hardcore or granular fill used in lieu thereof.

(B) **Rates**

a) Rates for excavation shall include for:

i. Clearing the Site of all rubbish, debris, shrubs, trees, bushes, plants, fence, and the like including grubbing up roots and foundations prior to the commencement of the Works.

ii. Excavation to any depth.

iii. Excavation in any material whatsoever found, including rock.

iv. Excavation circular on plan.

v. Allowance for working space.

vi. Excavating below water-table level.

vii. Keeping excavations clear of water.

viii. Levelling, ramming, trimming and grading bottoms of excavations in rock.

ix. Planking and strutting.

x. Selecting suitable material from the excavations and returning, filling and ramming in layers around foundations and to underside or hard-core beds including all multiple handling and transport about the Site.

b) Rates for hard-core beds shall include for:

i. Trimming and levelling ground under.

ii. Ramming and consolidation.

iii. Loss of bulk in consolidation.

iv. Finishing top surface to receive concrete, paving and the like.
3. **CONCRETE WORK**

**A) Measurements**

a) Concrete work shall be measured net.

No deductions will be made for:

i. The volume of concrete displaced by embedded steel,

ii. Voids not exceeding 0.10 meter super in concrete measured superficially.

iii. Voids not exceeding 0.05 meter cube in concrete measured cube.

b) Solid concrete slabs shall be measured superficially. All other concrete work will be measured cube except where otherwise stated below.

c) Forming channels (where measured separately) in concrete shall be measured run.

d) Forming urinal slots including trades in concrete shall be measured by number.

e) Precast concrete:

   i. Paving slabs shall be measured superficially,

   ii. Sills, copings and rainwater channels shall be measured run,

   iii. Manhole covers and latrine slabs shall be measured by number.

f) Expansion Joint:

   i. Filler shall be measured superficially,

   ii. Pointing shall be measured run.

g) Concrete items forming part of manholes and percolation pits are included in the items of manholes and percolation pits and will not be measured separately.

h) Concrete slabs shall be measured superficially for the full thickness over beams and the like.

i) Drop beams and the like shall be measured only as the portion projecting from the slab or other work.

j) Concrete columns shall be measured the full height taken through slabs, beams and the like.

k) Hollow block in slabs shall be measured superficially, or by number.

**B) Rates**

a) Rates for concrete work shall include for:

   i. Supply and storage of cement

   ii. Supply and storage of aggregates and water,

   iii. Mixing and placing in position,

   iv. Packing and tamping around reinforcement,

   v. Vibrating (if specified),

   vi. Grading, tamping and trowelling,
vii. Formwork, shuttering and supports,
viii. Supplying reinforcement and storing on Site including
cutting, bending and fixing in position and providing
all tying wire, distance places spacers,
ix. Finish to exposed faces,
x. Curing,
xi. Work of any cross-sectional area,
xii. Work at any height,
xiii. Curved work,
xiv. Forming mortices and grouting in,
xv. Forming grooves, throats, holes, chases, re-bates,
chamfers, splayed angels, mouldings and the like,
xvi. Casting in or cutting and pinning plugs, holdfasts,
brackets, and the like,
xvii. Hoisting to any height and bedding, jointing and
pointing,
xviii. Wall ties.

4. BLOCKWORK
(A) Measurements

a) Blockwork shall be measured net. No deductions will be made
for voids or openings of less than 0.10 m² in area.
b) Blockwork shall be measured superficially except for walls less
than 25cm in height which shall be measured run.
c) Courses of solid blockwork in hollow block walls shall be
measured run.
d) Forming openings through block walls (other than honeycomb
walls and Claustra walling) shall be measured by number.
e) Thickness given refers to the thickness shown on the drawings
and no allowance will be made for any additional thickness due
to uneven or bad workmanship.
f) Ventilating pipes shall be measured by number.

(B) Rates
a) Rates for blockwork shall include for:

i. Supply and storage of cement
ii. Supply and storage of aggregates, water and other
materials,
iii. Manufacture and curing of blocks,
iv. Laying blocks including horizontal and vertical mortar
joints,
v. Work of all Classifications in any location,
vi. Finishing fair and pointing to exposed faces,
vii. Rough and fair cutting,
viii. Cutting or leaving holes, chases, grooves, mortices, sinkings and the like and making good,
ix. Cutting and pinning or building in ends of lintels, steps, timbers, rails, brackets, steel sections and the like, and making good,
x. Concrete filling and reinforcing rods to cavities at quoins and door and window openings,
xi. Cutting and bonding at angles, intersections and the like.

b) Rates for ventilating pipes shall include for:
   i. Cutting and pinning or building in,
   ii. Accessories.

5. STONEWORK

(a) Measurements
   a) Thicknesses given refer to the nominal thickness or the thickness shown on the drawing. No allowance will be made for any additional thickness due to uneven or bad workmanship or to variations in the thickness of the stone.
   b) Stonework shall be measured in square meters, net as laid, with the surface area of Jambs, Lintels & Sills added, with no allowance made for Lintels, Jambs, Sills, Quoin stones… etc.
   c) Rubble stone walls shall be measured by volume and/or in square meters as specified in the Bills of Quantities.
   d) Coping Stones shall be measured in Linear Meter for each Width & Thickness.
   e) Other stone items shall be measured net as listed in the Bill of Quantities.

(b) Rates
   a) Rates for stone work shall include for:
      i. Supply and storage of cement
      ii. Supply and storage of stone, aggregates, water and other materials,
      iii. Laying stones including coursing, bonding, and all mortar joints,
      iv. Work of all classifications in any location,
      v. Face or surface finishing including all openings, returns, reveals and the like,
      vi. Rough and fair cutting,
      vii. Tying to backing material,
      viii. Concrete backing where included with stonework
ix. Cutting or leaving holes, chases, grooves, mortices, sinkings and the like, and making good,

x. Cutting and pinning or building in ends of lintels, steps, timbers, rails, brackets, steel sections and the like, and making good.

6. **CARPENTRY AND JOINERY WORK**

   (A) **Measurements**

   a) Sizes of timber given in the Bills of Quantities are finished sizes after planning to provide wrought faces.

   b) Sizes of doors shall be taken over the frame and shall include transom lights, sidelights and the like. The finished floor level shall be taken as the bottom of the floor and frame.

   c) Sizes of fittings shall be taken as the gross overall measurements including legs, bearers, brackets and the like.

   d) Display board panels shall be measured superficially.

   e) Purlins, coat rail, display board and chalkboard frames, chalk trays, pelmets, shelves, shelf divisions, and worktops shall be measured run.

   f) Doors, pairs of doors, benches and chalkboards shall be measured by number.

   (B) **Rates**

   a) Rates for carpentry and joinery work shall include for:

   i. Any length of timber,

   ii. Joints in the running length of timber,

   iii. Raking, curved or circular work and labours,

   iv. Framing,

   v. Forming holes, angles, ends, mitres, rebates, splayed edges, grooves, chamfers, scribed edges, rounded edges, rounded corners, notches, sinkings, fitted ends, far ends and the like,

   vi. Cutting and fitting around obstructions.

   vii. Forming mouldings,

   viii. Nosings, bed moulds, margins, and the like,

   ix. Facing and edging to block-board,

   x. Bedding and painting,

   xi. Grounds, blockings and backings,

   xii. Plugging concrete, blockwork, and stonework, and making good,

   xiii. Ironmongery including screws, temporary fixing, re-fixing, oiling and adjusting,

   xiv. Providing two keys for each lock including tagging,
xv. Hardware including nails, screws, dowels, cramps and the like,

xvi. Steel legs, brackets, bearers and other supports including painting,

xvii. Glass and glazing including cutting to size and putty,

xviii. Fly-screening including cutting to size,

xix. Preparing surfaces to receive finishes,

xx. Painting, varnishing, polishing, oiling, and the like, to any area or width in any location including work in multicolours and cutting in edges.

7. **METALWORK**

(A) **Measurements**

a) Items of steel which are measured by weight shall have the weight calculated from the standard weight tables with no allowance made for rolling margin.

b) Windows, doors, pairs of doors and gates shall be measured by number.

c) Curtain tracks and expansion joint covers shall be measured by run.

d) Mesh to screens shall be measured superficially.

e) All other metalwork shall be measured by weight.

(B) **Rates**

a) Rates for metalwork shall include for:

   i. Preparing shop drawings,
   
   ii. Cutting,
   
   iii. Assembling,
   
   iv. Welding and grinding,
   
   v. Drilling, countersinking, screwing, bolting and riveting,
   
   vi. Bedding and pointing,
   
   vii. Lugs, plugs, holdfasts and the like,
   
   viii. Ironmongery including temporary fixing, refixing, oiling and adjusting,
   
   ix. Providing two keys for each lock and padlock including tagging,
   
   x. Hardware including cramps, dowels, and the like,
   
   xi. Glass and glazing including cutting to size and putty,
   
   xii. Preparing surfaces for and painting one coat of primer before fixing,
   
   xiii. Painting to any area or width in any location including work in multicolours and cutting in edges.
8. **PLASTERWORK AND OTHER WALL, FLOOR & CEILING FINISHES**

(A) **Measurements**

a) All finishes shall be measured net. No deductions will be made for voids not exceeding 0.50 m\(^2\) in areas measured superficially.

b) All finishes, except skirting and sills, shall be measured superficially.

c) Skirting and sills shall be measured run.

(B) **Rates**

a) Rates for finishes shall include for:

i. Supply and storage of cement

ii. Supply and storage of aggregates and water,

iii. Mixing,

iv. Hacking concrete, applying cement slurry or raking out joints of blockwork to form key,

v. Application to any surface,

vi. Any width or area,

vii. Any location and any height,

viii. Beds, bedding and backing,

ix. Finish to surface,

x. Finish to edges and arises,

xi. Grouting and pointing,

xii. Making good around steel sections, pipes, tubes, bars, brackets, outlets and the like,

xiii. Finish to falls, cross-falls and currents,

xiv. Forming bays including joints,

xv. Treating surfaces with dust proofer, hardener and the like,

xvi. Ends, intersections, angles, ramps, and the like on skirting,

xvii. Forming rounded top edges and coves at bottom on skirting.

b) Rates for tiling shall include for:

i. Purpose made tiles including round edge tiles and bull-nosed tiles.

c) Rates for Precast terrazzo items shall include for:

i. Forming holes,

ii. Forming grooves.
9. **ROOF FINISHES**
   
   (A) **Measurements**
   
   a) All finishes shall be measured net.
   b) All finishes, except triangular shaped fillets and cement and sand lining to gutters, shall be measured superficially.
   c) Triangular shaped fillets and cement and sand lining to gutters shall be measured run.

   (B) **Rates**
   
   a) Rates for cement and sand work shall include for:
      
      i. Supply and storage of cement
      ii. Supply and storage of aggregates and water,
      iii. Mixing,
      iv. Hacking concrete, applying cement slurry or raking out joints of blockwork to form key,
      v. Application to any surface,
      vi. Any width or area,
      vii. Finish to surface,
      viii. Finish to falls, cross-falls and currents,
      ix. Forming bays including joints,
      x. Finish to edges and arises,
      xi. Making good around steel sections, pipes, tubes, bars, brackets, outlets, and the like,
      xii. Ends, intersections, ramps, and the like on fillets.

   b) Rates for water proofing shall include for:
      
      i. Preparation of surface,
      ii. Any area or width,
      iii. Cutting in edges.

   c) Rates for roof sheeting shall include for:
      
      i. Side and end laps,
      ii. Fixings including bolts, hook bolts, screws and washers,
      iii. Sheets of any width or length.

10. **PLUMBING WORK**

   (A) **Measurements**

   a) All plumbing work, except rainwater pipes and water supply pipework in water points, shall be measured by number.
   b) Rainwater pipes and water supply pipework in water points shall be measured run over fittings.
   c) Pipework in frames to shading sheds shall be measured run over fittings.
(B) **Rates**

a) **Rates generally shall include for:**

   i. Cutting or forming all chases, holes, and the like,
   
   ii. Pipe sleeves,
   
   iii. Fixing brackets, clips, holderbats, hangers, and the like,
   
   iv. Temporary and final fixing,
   
   v. Nails, screws, bolts, nuts, washers, holes, plugs, and the like,
   
   vi. Building in or cutting and pinning,
   
   vii. Testing and drawings,
   
   viii. Painting,
   
   ix. All work of other trades in connection with plumbing work including all making good.

b) **Rates for sanitary fittings, isolated taps and gullies shall include for:**

   i. All pipework in connection therewith and connections thereto including connection to the nearest manhole of gully and to the cold water storage tank.

c) **Rates for pipework including pipework in frames to shading sheds shall include for:**

   i. Joints in the running length,
   
   ii. Nipples, connections, sockets, ferrules, couplings, back-nuts, unions, and the like,
   
   iii. Bends, elbows, tees, reducers, access doors, cleaning eyes, blank caps, stop valves, and the like,
   
   iv. Welded joints and connections including grinding,
   
   v. Lagging and wrapping,
   
   vi. Excavation, bedding and backfilling

11. **ELECTRICAL WORK**

   (A) **Measurements**

   All electrical work shall be measured by number.

   (B) **Rates**

   a) **Rates generally shall include for:**

   i. Cutting or forming all chases, recesses, holes and the like,
   
   ii. Conduit sleeves,
   
   iii. Fixing brackets, clips, holderbats, hangers, and the like,
   
   iv. Temporary and final fixing,
   
   v. Nails, screws, bolts, nuts, washers, holes, plugs, and the like,
   
   vi. Building in or cutting and pinning,
   
   vii. Testing and drawings,
   
   viii. Painting,
   
   ix. All work of other trades in connection with electrical work including all making good.
b) Rates for fittings, switches, and fuseboards shall include for:
   i. Conduit and wiring to and between fittings, switches, and
      fuseboards (except connections to supply company’s main)
      including all fittings, boxes, connectors and the like and making
      connections,
   ii. Lamps, bulbs, tubes and the like,
   iii. Plates and covers,

c) The rate for the connection to the Supply Company’s main shall
   include for:
   i. All the supply company’s charges for making the connection to
      the main,
   ii. Wiring or cabling between the supply company’s mains and the
       distribution board,
   iii. Underground conduit and junction boxes including excavation
       and backfilling,
   iv. Poles including insulators.

12. **GLAZING WORK**

   (A) **Measurements**

   Glass and glazing work is included with the items in which the glass
   is fixed and will not be measured separately.

   (B) **Rates**

   a) Rates for glass and glazing work shall include for:
      i. Any size, shape and area,
      ii. Glazing to wood or metal,
      iii. Bedding edges,
      iv. Labours to edges,
      v. Drilling holes and grinding.

13. **PAINTING AND DECORATING**

   (A) **Measurements**

   a) Painting and decorating to walls, ceilings and the like shall be
      measured superficially.
   b) Painting and decorating to all other surfaces, items and things are
      included in the items of surfaces, items and things, and will not be
      measured separately.
(B) Rates

a) Rates for painting and decorating work shall include for:

   i. Preparing of surface including puttying, sealing and priming,
   ii. Any area or width,
   iii. Any location,
   iv. Work in multicolours,
   v. Cutting in edges.

14. DEMOLITIONS AND ALTERATIONS

(A) Measurements

   a) Unless otherwise stated, old materials shall be understood to become the property of the Contractor and shall be cleared away; Old materials required to remain the property of the Agency shall be so described; setting aside and storing of such materials shall be given in the description.

   b) Removing individual fittings, fixtures engineering installations or the like from and existing structure shall be given as an item; stating the size, or enumerated. Those required to be set aside for re-fixing shall be so described.

   c) Removing finishing or coverings to existing structures shall be given as items, indicating the quantity, or in square meters, stating the nature of the finishing or coverings.

   d) Demolishing individual structures or part thereof, shall be given as an item, stating the dimensions. Alternatively, demolishing all structure on Site may be given as one item.

   e) Cutting openings in existing structures and alterations to existing structures shall be given either as an item or enumerated, stating the size of the opening and the type and thickness of the existing structure. Making good all work damaged shall be understood to be included. The provision of new lintels shall be included in the description of such work.

   f) The provision of temporary screens and coverings to protect the existing structure shall be understood to be included in the demolition and alteration items.

   g) Shoring incidental to demolitions and alterations, together with clearing away and making good all work damaged, shall be understood to be included. Shoring, other than that incidental to demolitions and alterations, shall be given as an item stating the locations; clearing away and making good all work damaged shall be understood to be included.

(B) Rates

a) Rates shall include for:

   i. Labour, material and plant,
   ii. Temporary propping or shoring incidental to the Works,
iii. Protection of adjacent buildings,
iv. Temporary screens and protection of remaining finishing and structures,
v. Clearing all debris from Site,
vi. Making good finishes and structures disturbed,
vii. Disposal of old materials by Contractor unless otherwise stated in the description,
viii. Removal of old materials to Agency store where these are to be retained by the Agency.

15. PARTICULAR NOTES ON PRICING AND MEASUREMENT OF PLUMBING WORK

Further to the notes included on page GI/11 of this document, the rates for sanitary fittings shall allow for all waste pipes to ground floor level only. All underground soil and waste pipes are measured separately in the internal plumbing and drainage sections.
Quality Control Tests

1. **PRICING**
   a) The Contractor shall not be entitled to additional allowance for carrying out these tests as it should be understood that the cost will have already been allowed for in the Contract’s Unit Rate.

2. **CONDITIONS OF CONTRACT**

   2.1 **General Conditions**
   Materials failing to comply with the specified tests shall be removed from the Site and substituted with proper materials. The replacement materials shall also be subject to testing according to the discretion of the Director of Works and all additional testing costs shall be borne by the Contractor.
   a) Test results should comply with Local Standards in the Country where the Project is executed in addition to the following Standards: AASHTO T27, T89, T90; ASTM C156, C39-C86, C116-90, C97, D1556-90, D1557-90, D3282-88, D1559, D3549-77; BS 4131-73 Part B, BS 4131-73 Part A, BS 7263 Part 1:1990, BS 340.

   2.2 **Special Conditions**
   (To be completed by the Director of Works as applicable)
   Insert any requirements/e.g. tests to be carried out by the Contractor

1. **List of TESTS to be carried out for all Construction Projects (Where Applicable). The Decision on the applicability of such tests on any particular project is left to the judgment of the Director of Works.**

   3.1 **Earthworks:**
   a) Examination of Fill Material for compliance with specifications.
   b) Field Density test.

   3.2 **Concrete Works:**
   a) Mix Design.
   b) Slump test.
   c) Cube/Cylinder Compressive Strength test.

   3.3 **Reinforcing Steel:**
   a) Steel tensile test.
   b) Visual test of steel for rust, straightness, suitability for use; including measuring the diameter with a precision calliper.

   3.4 **Mechanical Works:**
   a) Water Network pressure test.
   b) Gas Network pressure test.
   c) Drainage Network leakage test.
d) Equipment test:
   1) Contractor should provide evidence that the equipment has passed the manufacturer’s Quality Control tests
   2) Includes all requirements specified in Contract Documents such as {Add-on’s, connecting parts…etc.}.

e) PVC pipes: Pressure and thickness test or a certificate of compliance with local standards.

3.5 Electrical Works:

a) Electrical resistance of earthing: For power sockets equal or less than 2 ohms, for computer sockets equal or less than 0.5 ohms.

b) Continuity test: connection of cables according to local standard.

c) Insulation resistance test or a certificate of compliance with local standards.

d) Equipment test:
   1) Contractor should provide evidence that the equipment has passed the manufacturer’s Quality Control tests
   2) Includes all requirements specified in Contract Documents such as {Add-on’s, connecting parts…etc.}.

e) Electrical PVC Conduits: Type and thickness to comply with local standards.

3.6 Concrete Blocks:

a) Compressive Strength test.

3.7 Tiling Works:

a) Transverse (Crushing) test.

b) Abrasion test: results should comply with local standards.

c) Water Absorption test.

d) Surface thickness test: White cement part.

3.8 Asphalt Mix:

a) Asphalt Content test.
b) Compaction test.

c) Thickness test.

3.9 Concrete Curb Stones:  
a) Compressive Strength test.

3.10 Painting:  
a) Paint analysis test or a certificate of compliance with local standards.
FORM I: PERFORMANCE BOND

PERFORMANCE BOND (BANK GUARANTEE)

[On the headed note paper of the Guarantor (Bank)]

From:
[Name of the Bank/………………………………………………………………………]  
[Branch or Office] .........................................................................................  
[Address] ......................................................................................................

Fax No: [.................................]  
(the “Guarantor”)

To: United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA)

Al- Bayader Area, opposite WSTC  
P.O.Box 143464  
11814, Bayader Wadi Al-Seer  
Jordan

Fax No: [4746361]  
(the “Beneficiary” or “you”)

Date:...........................................  
Dear
Sir/Madam

Re: Performance Bond in respect of [.................................................................]’s performance obligation under the Contract [Ref no. ..............................................] (the “Performance Bond”)  
Performance Bond No. [ ......................]

1. We, have been informed that [supplier…………………………………………………….] (the “Principal”) has entered into a contract [full name of the contract .................................................................] dated ....................... with you, the Beneficiary, for the provision of [ .................................................................] (the “Contract”).

2. Further, we understand that, according to the conditions of the Contract, an on demand performance bond is required as a security for the performance of the Principal’s obligations under the Contract.

3. At the request of the Principal and in consideration of you entering into the Contract with the Principal, we [bank name…………………………………………………….] hereby guarantee to you that we shall, without proof and notwithstanding any contest or dispute by the Principal, pay you in full, without any deductions, set-off or withholdings, any sum or sums not exceeding in total an amount of JOD [insert the amount in figures........................................] ([insert the amount in words..............................................................] Jordanian Dinar) (the “Bond Amount”) claimed by you, upon, and in any event within 3 (three) days after, receipt by us of your first written demand stating:

(a) that the Principal is in breach of his obligation(s) under the Contract; and
(b) the respect of which the principal is in breach,
(c)to the account specified in the said demand.
4. You may make any number of demands, but any case not later than expiry date, from time to time, under this Performance Bond. The maximum aggregate liability hereunder shall not exceed the Bond Amount.

5. Our obligations constituted by this Performance Bond is irrevocable and, except as stated herein, unconditional and shall not be reduced, discharged or released for any reason, act, event or omission.

6. This Performance Bond shall expire, the latest, on [insert date] (the “Expiry Date”).

7. Any demand for payment must be received by us at this office on or before the Expiry Date.

8. We represent and warrant that we have the full power, authority and capacity to execute and deliver this Performance Bond and to perform our obligations hereunder.

9. Any demand, notice or communication made to us under or in connection with this Performance Bond shall be in writing and made to the address written above to the attention of: (a) [insert attention/contact details……………………………………………].

10. This Performance Bond shall be regulated by the Uniform Rules for Demand Guarantees, International Chamber of Commerce (“ICC”) Publication No. 758.

11. We acknowledge that nothing hereunder or any document entered into in relation hereto shall imply a waiver, express or implied, by UNRWA of any privileges or immunity enjoyed by you, or acceptance of the jurisdiction of the courts of any country over disputes arising thereof.

Yours faithfully,

Signed by :............
Name:......................
Title:........................
FORM J: BID SECURITY

Bid Security must be issued using the official letterhead of the Issuing Bank. Except for indicated fields, no changes may be made on this template.

Beneficiary: United Nations Relief and Works Agency for Palestine Refugees in the Near East
ITB Reference: ITBW-3522000048

WHEREAS Click or tap here to enter text. (hereinafter called “the bidder”) has submitted a bid to UNRWA dated Click or tap to enter a date. to execute goods and/or services Construction Maintenance for Different Installations at Different Areas (hereinafter called “the bid”):

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 if the bidder:

a) Fails to sign the Contract after UNRWA has awarded it;
b) Withdraws its bid after the date of the opening of the bids;
c) Fails to comply with UNRWA’s variation of requirement, as per ITB instructions; or
d) Fails to furnish Performance Security, insurances, or other documents that UNRWA may require as a condition to rendering the contract effective.

AND WHEREAS we have agreed to give the bidder such 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 bid 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 [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 120 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]
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UNRWA’s e-tendering system, In-tend is integrated with the United Nations Global Marketplace portal (www.ungm.org). Please find instructions on how to register your company and how to access the tender documentation. For further assistance, please contact UNGM at registry@ungm.org or use the Help Button on the UNGM site.

STEP 1: CREATION OF YOUR UNGM ACCOUNT

To access the tender documents, you need to complete the registration process at least at Basic level and have a ‘Registered’ status with UNRWA on UNGM.

To create an account on UNGM, please follow these steps:

1. Go to the UNGM site www.ungm.org. Suppliers are recommended to use Google Chrome as a web browser to navigate the UNGM site.
2. At the top right corner of the page, click on Register.

3. Click on Company (or on behalf of a company/ NGO).

[Image of UNGM website and registration form]
4. Download and read the [UN Supplier Code of Conduct](https://www.ungm.org/supplier-code-of-conduct).

Complete the **required** information.

- The provided **email address** will become the account's **username**. It will be used for logging into the supplier's account and for authentication. It must be a **valid email address**.
- Provide the **company's name** as it appears on the **company's Certificate of Incorporation** or other legal documentation.
- If a **message** appears that a company with a similar name already exists, suppliers are advised to contact UNGM using the **contact form**.

5. Confirm that you have read and acknowledge the UN Supplier Code of Conduct by ticking the checkbox and click on **Send the activation link**.

An activation email will be sent to the email address.
6. Access the email **UNGM Account Activation - Welcome to the UNGM** in your inbox and click on the **Activate** button. Please note, the link can only be used once.
STEP 2: LOG INTO YOUR UNGM ACCOUNT

In order to log into your UNGM account, please click on the ‘Log in’ link at the top right-hand corner of the page. You will need to use your username which is the email address you registered with and your password.

If you do not remember your password, please use the ‘forgotten password’ functionality.

STEP 3: COMPLETE YOUR VENDOR REGISTRATION FORM IN UNGM

From the ‘Registration’ link in the left-hand menu, you can complete your registration form. It only takes about 5-8 minutes to complete your Basic registration.

Click on Registration in the navigation menu. The asterisk (*) indicates information that is required, and you will not be able to submit the registration without this information.
Complete the registration form section by section.

General

Under the General section, suppliers are required to provide general information about their company.

- **Company name** must be provided exactly as written in the company’s Certificate of Incorporation or other legal documentation.
- **Business license number** refers to the reference number from a city, state and/or official document that grants the bearer the ability to engage in specific business activities within the designated area.
- **Year established** refers to the year of creation of the company. The year format should follow YYYY, for example, 1991.
- **Company's ownership** refers to the control over a company. Select the type of business ownership corresponding to the company.

Once the General section has been completed, click on **Save & Continue >** to move to the next section.

Address

Under the Address section, suppliers are required to provide the address information of their company.

Click on **Save & Continue >**.
**Registration type**

Under the **Registration type** section, suppliers are required to provide information about countries in which they prefer to do business.

- **National** should be selected if suppliers prefer to do business in their country of establishment.
- **International** should be selected if suppliers prefer to do business in their country of establishment and other countries.

Click on **Save & Continue** >.

**Contacts**

Under the **Contacts** section, suppliers are required to **provide their contact information** and **add other contacts** if necessary.

Click on **Save & Continue** >.
Coding

Under the Coding section, suppliers are required to provide information about their activity - by classifying the suppliers' products and/or services according to the UNSPSC code classification.

Click on Save & Continue >.

Declaration

The declaration of eligibility is a formal and explicit statement which has to be made on behalf of the supplier.

Under the Declaration section, suppliers are required to review the seven statements and select the most appropriate option.

Click on Save & Continue >.
The registration is now complete.

The registration statuses with UN organizations may be visible under Manage Agency submissions.

Once the supplier's profile is registered with at least one UN organization at the basic level, the supplier's profile will become visible to all UN staff members.

STEP 4: HOW TO MANAGE REGISTRATION SUBMISSIONS WITH UN ORGANIZATIONS?

To manage registration submissions with different UN organizations, please follow these steps:

1. Click on Manage Agency Submissions in the navigation menu to identify the registration statuses with UN organizations.
2. Additional actions may be taken under the Manage Agency Submissions page such as **withdraw the registration** and complete the Level 1 and/or Level 2 registration.

- **Withdraw registration**

Once the supplier's profile is registered with at least one UN organization at the Basic level, the supplier's profile will become visible to all UN staff members.

If the supplier decides that he/she does not want to do business with a specific UN organization, the registration with the UN organization may be removed.

Click on **Withdraw** to remove the registration with the UN organization. The registration may be resubmitted later, if necessary.

- **Complete Level 1 and/or 2 registrations**

UNGM will automatically suggest registration at Level 1 and/or 2 only for UN organizations which require these additional levels. For more information, read the [What are the UN organizations’ registration criteria on UNGM? Article](#).
Click on **Complete Level 1 registration** > to complete the Level 1 registration form.

Click on **Complete Level 2 registration** > to complete the Level 2 registration form.

**TIP:** UN organizations mostly review Level 1 and/or Level 2 registrations as part of a **tendering process**. In the meantime, the registration statuses, at these levels, will remain as Submitted.

**STEP 5: CHECK YOUR STATUSES AND UNGM NUMBER IN THE DASHBOARD**

To check the registration statuses with **UN organizations** please Go to the Dashboard in the navigation menu.
STEP 1: SEARCH FOR TENDER NOTICES ISSUED BY UNRWA

From the UNGM homepage, click on the ‘Business Opportunities’ box.

You will be redirected to the 1 ‘Tender notices’ page in the left-hand menu.

Click on the 2 ‘show more criteria’ button on the upper right side.
In the "UN organizations" field, please type UNRWA. The system will automatically show all the active tender notices issued by UNRWA.

On the side of each tender notice, you will find a blue button with either "Express interest" (if this is the first time you view the notice) or "View documents".

In case of first access, click on "Express interest" to notify UNRWA that you are interested in participating in this tender. After a few seconds, the button will change in a green button "View documents". Click on this "View Documents" button (on the left side) to gain access to the tender documents.

**STEP 2: TENDER MANAGEMENT**

After clicking on ‘View Document’ you will be transferred from the UNGM portal to the UNRWA e-tendering system. The following ‘Tender Management’ screen should appear.

**IMPORTANT:** If it does not show the Tenders screen, please inform immediately UNRWA at Intend.Admin@unrwa.org.
You are now in the UNRWA e-tendering system. Under this area you will find several menu tabs:

- **Tender**: General information about this tender
- **RFP documents**: IMPORTANT, here is the deadline plus all the documents of the tender process (RFQ, RFP, ITB, etc.). In the same area, you have the placeholders for uploading your proposal and all your documents.
- **Correspondence**: an area where you can write email and receive answers from UNRWA.
- **Clarifications**: an area for reading the clarifications issued by UNRWA and made available to all bidders. Please ensure to read all the clarifications as they become part of the specifications.
- **History**: a log of past activities related to this tender

From this point onward, we think that the system is more intuitive and you will be able to navigate without major difficulties. But if you have questions, please contact us using the CORRESPONDENCE function of the e-tendering system or via email at Intend.Admin@unrwa.org.

**STEP 3: ACCESS THE TENDER AT A LATER STAGE**

To view all tenders that you have expressed interest to participate in or tenders that you have been directly invited to by UNRWA, click on "my tenders", then click on the 'View document' button next to the notices to see the details of the tender notice and its documents.
STEP 4:  DOWNLOAD THE TENDER DOCUMENTS

In the ‘Tender Management’ page, select the 8 ‘RFP* documents’ menu tab, scroll down until the section 9 ‘Tender documents received’ and 10 ‘download’ all documents.

* or as the case maybe RFQ, ITB, etc.
STEP 5: ATTACH AND SUBMIT DOCUMENTS

After downloading the tender documents you can confirm your interest by clicking 'Opt In' (you will be redirected to the ‘My Tender Return Section’) or decline by clicking ‘Opt Out’ with an option to provide reason and to cease any system generated communication. However, you will be able to opt back in at any point.

If any mandatory documents have been requested, they will be shown in the ‘My tender return’ section against a red button. As the case maybe you will be requested to upload one or two envelopes (financial / technical).

If a Questionnaire is required to be completed, it will be shown in Red and marked ‘Not Started’ in the ‘My Tender Return’ section. It is mandatory that any Questionnaire’s must be completed.

To add additional documents you wish to submit as part of your tender return and you feel are relevant to the tender, click the button under the ‘My Tender Return’ section (if available). These will then appear in the ‘My Tender Return’ section.

NOTE: Large files may take some time to upload.

The button will not allow the submission until you have up-loaded all mandatory documents and answered any Questionnaires that they may have been sent.

IMPORTANT: When you have completed all the above steps and are ready to submit your tender return, click the ‘Submit Return’ at the bottom of above page.
A pop-up window with a Return Receipt will appear.

After pressing the Submit Return button, the Modify Return button will turn to where you will be able to modify the submitted bid before the closing date. Please note that any documents not included in the subsequent return will not be considered. All tender documents you wish to return must be included in your modified bid as this replaces your first and existing bids.

You must press the 'Submit' button again, in order to submit any subsequent modified returns.

**TENDER ALERT SERVICE**

The Tender Alert Service (TAS) is an added service for vendors who would like to be notified of relevant tender notices via email. With the Tender Alert Service, you can receive notification of relevant business opportunities that match your company's products and/or services directly to your email address.

This service is provided at the fees listed below. You can also access tenders free of charge under Tender Notices.

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### TENDER ALERT SERVICE

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**For more help and guidance please visit UNGM Help Center.**

If you urgently need assistance, you can also contact UNGM at registry@ungm.org for urgent assistance.
SECTION 8 DRAWINGS
Assessment for Nuzha Elementary
Girls School 1&2
Recommendations

- The expansion joint should be treated properly.
- The expansion joints in the floor should be straight and should align, without offset, with expansion joints in vertical planes such as double columns and walls and should have a consistent width throughout.
- Joints in the walls should be free of mortar protrusion, masonry ties, protruding shelf angles, and other obstructions that might hinder the movement or obstruct installation of the expansion joint system.
- Treatment methods for expansion joints in various elements
  - Walls: The joints in the wall are not left exposed. They are covered with covering sheets which may be of aluminum or hard board. etc. The covering sheet is fixed to the wall on one side of the joint with screws left free from the other side.

![Expansion Joint Profile](image1)

Figure 7: Expansion Joint in walls

- Expansion joint in the roof shall be provided with a watertight joint filler. Joint in floor shall be invariably sealed to prevent accumulation of dirt, dust, therein.

![Expansion Joint Profile](image2)

Figure 8: Expansion Joints in floor slabs
Figure 9: Expansion Joints in roof floor

- For the deteriorated frame on the third floor, the slabs on both sides should be supported until the deteriorated frame concrete is demolished without affecting the reinforcement, and all the corroded reinforcement should be brushed and cleaned after which the frame should be inspected to determine if more reinforcement is required, new concrete should be casted, and the expansion joint between the frame and the above slab should be filled with compressible material.

- For the entrances slab on grade, the slabs should be demolished reconstructed over well-compacted fill material.

- For the slab in front of the left staircase, where the vibration is noticeable the slab should be stiffened by appropriate method, it is recommended to use a steel frame structural similar to the one used on the right side of the building but with additional steel beam under the slab as shown in figure 10 below.
• The provider/contractor should design the steel structure to strengthen the slab, and the drawings and calculations should be submitted to ICID HQ(A) for approval.

• The partitions which suffer from cracks should be demolished and reconstructed according to the detail shown in figure 11.

![Diagram of floor slab and stiffener column anchored in floor slabs]

Figure 11: Typical detail for internal block wall

• A ground beam under the partitions should be added as the detail shown in figure 12, the ground beam should be supported from both sides on the existing columns, bearing walls or another ground beams, therefore the final ground beam layout should be prepared according to the final design for the partitions on the ground floor.

• Never lay masonry straight over door/window frame. Always provide adequate RCC lintels/sills with adequate support on walls.

• Fill the gap between the top of masonry and bottom (soffit) of beam/slab with mastic

![Diagram of ground beam under hollow block partition]

Figure 12: Ground beam under hollow block partition
Figure 13: section I in ground beam
SECTION 10: SPECIFICATION FOR BUILDING MAINTENANCE AND MEDIUM BUILDING CONSTRUCTION WORKS
Specification for Building Maintenance and Medium Building Construction Works
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<td>List of British Standards to which reference is made in this Specification</td>
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101 Office of the Director of Works

1. The Contractor shall provide, erect, maintain and remove on completion of the Works the offices and their contents, access roads and hard standing thereto described in the Contract for the use of the Director of Works. The offices shall be ready for use by the Director of Works within 2 weeks of the Date of Commencement of the Contract and shall be regularly and properly cleaned for so long as they are in use.
2. The offices shall be furnished by the Contractor with all required furniture and equipment as described in the Contract Documents to the approval of the Director of Works.
3. The Contractor shall provide and keep in good repair one (1) slump cone and two (2) 30m and 50m steel tapes for testing materials and workmanship.
4. The Contractor shall provide and maintain the offices with an A/C for cooling and heating.

102 Traffic Safety

1. The Contractor shall provide, erect and maintain such traffic signs, lamps, barriers, traffic control signals and such other measures as may be necessitated by the construction of the Works to the satisfaction of the Local Authority and the Director of works.
2. The Contractor shall not commence any work which affects public roads until all traffic safety measures necessitated by the work or required by the Local Authority are fully operational.
3. The Contractor shall keep clean and legible at all times all traffic signs, lamps, barriers and traffic control signals and he shall position, re-position, cover or remove them as necessitated by the progress of the Works.

103 Temporary Diversion of Traffic

1. The Contractor shall construct temporary diversion ways whoever the works will interfere with existing public or private roads and other ways over which there is a public or private right of way for any traffic.
2. The standard of construction and lighting shall be suitable in all respects for the class or classes of traffic using the existing way and the width of the diversion shall be not less than that of the existing way unless otherwise described in the Contract.
3. Diversion ways must be constructed in advance of any interference with the existing ways and shall be maintained to provide adequately for the traffic flows.
4. The provisions of this Clause shall not apply to any temporary access or accommodation works which the Contractor may construct for his sole use in the execution of the Works.
5. The Contractor shall not commence any work without coordination with the relevant Authorities and owners.
Privately and Publicly Owned Services

1. If any privately owned service for water, electricity, sewerage, etc. passing through the Site is affected by the Works then the Contractor shall locate it and provide a satisfactory alternative service before cutting the existing service.

2. The position and type of Public Authority main services utilities shall be verified by the Contractor who must satisfy himself as to the exact position and type of such existing utilities. The Contractor shall coordinate and take all measures required by any Public Authority for the support and full protection of the pipes, manholes, cables and other utilities during the progress of the works. The Contractor shall make allowance in his price for compliance with this clause.

Existing Ground Levels

1. The Contractor shall satisfy himself that the existing ground levels as indicated in the Contract are correct. Should the Contractor wish to dispute any levels he shall submit to the Director of Works a schedule of the position of the levels considered to be in error and a set of revised levels. The existing ground relevant to the disputed levels shall not be disturbed before the Director of Works’ decision as to the correct levels is given.

Coins and Antiquities

1. Any coins or antiquities found on the site are to remain the property of the employer and are to be handed over to the Director of Works.

2. The Contractor is responsible for any coordination with the relevant Authorities.

Protection and Making Good

1. The Contractor shall protect all completed works from damage until the completion of the Works to the approval of the Director of works.

2. Should the Contractor allow any works to be damaged he shall at his expense make good or replace, as required by the Director of Works, to the approval of the Director of Works.
Scope

1. The area to be demolished is shown in the Contract Drawings. This includes site clearance, safety, pollution control; Country Regulations about location of dump area...etc. in accordance to the standard and Country Regulations.
2. Areas adjacent to demolition works shall be protected from damage resulting from the demolition.
3. Particulars of the proposed methods of carrying out demolition works, handling and sorting of recyclable materials and disposal of construction and demolition waste shall be submitted to the Director of Works for information at least 7 days before the demolition starts.
4. The Contractor shall comply with the requirements of preservation, protection and replanting of existing trees before commencing site clearance.

Giving Notices

1. The Contractor shall give all notices to wear, gas, and lighting and power Authorities and shall allow them facilities for removing or relocating any fixtures, fittings or services which may belong to them.

Nuisance

1. Demolition work is to be carried out in such a manner as to cause the minimum possible inconvenience to adjoining owners, users of existing facilities or the general public, and the Contractor will be held responsible for any claims arising from the disregard of this Clause in accordance to the country regulations. All rubbish and the works where necessary are to be prickled with water to prevent dust arising and screens and protection provided to the satisfaction of the Director of works.

Water and Electricity

1. The Contractor shall provide all necessary water and electricity for the works by whatever means are necessary, including temporary connections, supply installation and storage tanks, and clear away and remove the whole of the temporary installation upon completion.

Reinstating

1. The Contractor shall reinstate at his own cost and make good all damage occurring to remaining structures and/or adjoining property. All making out and making good is to be executed with materials and workmanship to match in every respect the surrounding work, and shall be properly bonded thereto. All to the satisfaction of the Director of Works.

Road and Footways
1. The Contractor is responsible for maintaining all public/internal roadways and footpaths and shall be responsible for and make good any damage thereto occurring as a result of the demolition work.

207 **Plant**

The Contractor shall provide all plant, scaffolding, gangways, planks, gantries, tarpaulins etc., for proper execution and protection of the works and adjoining buildings, roadways and footpaths.

208 **Signboard**

1. Where necessary the Contractor shall obtain all consents, pay all fees for and provide and erect vertical signboard to road frontages size 3m x 2mX 2mm thick painted steel to the approval of the Director of Works, on which will include the name of the Project, the Agency (UNRWA), the Donor of the Project and the name of the Contractor including the emblems of UNRWA and Donor as well the period of the project.

209. **Diversion of Services**

1. Before commencement of the demolition work, all electrical, water, telecommunication, heating, sprinklers, sanitation and other services which come within the area to be demolished shall be disconnected or redirected in such a manner as to provide the buildings which are to remain with said services totally unaffected by the demolition work. The Contractor shall be responsible for coordination with Services Provider Authorities in the country.

210 **Pulling Down**

1. Pull down the whole of the structure marked on the Contract Drawings to basement floor level and clear all cellular of debris, rubbish and other material. Include for pulling down of basement walls as shown on the Contract Drawings. Basement shall properly cleaned out and filled with hardcore in layers not exceeding 15cm compacted thickness in accordance with Clause 408.

2. Where there is no existing basement, break up ground floor slam and grub up foundations.

3. Provide all necessary shoring, safety measures, strutting etc., required to maintain adjoining buildings.

211 **Overloading**
1. Materials arising from the demolition must not be stacked or allowed to accumulate on existing structures in such a way as to endanger their stability. The Contractor will be solely responsible for damage arising from this cause.

212 Exposed Party Walls

1. Where existing party walls are exposed due to demolition work, the Contractor shall remove old plaster or wall covering (if any), rake out joints and leave ready to receive new plastering etc., elsewhere specified).

213 Enclosing Adjoining Buildings

1. Where floors of adjoining buildings are exposed to the outside air provide and erect in back from edge of floor temporary framed and close-boarded screens with access doors and fastenings covered on the outside with approval roofing felt. Adapt as necessary during the progress of the work and clear away when no longer required.

214 Materials arising out of the demolition

1. The Contractor shall be responsible to dismantle carefully all usable material as specify in the contract, such as steel and wooden doors, windows, electrical and sanitary fixtures, cupboards etc., which are to remain the property of the Agency and are to be cleared and stacked as directed on site or disposed of according to the instruction of the Director of Works.

2. The material arising from the demolition is to become the property of the Contractor unless otherwise stated in the Contract Documents and is to be removed from site to a tip provided by the Contractor. No excess materials shall be burnt on site without the written approval of the Director of Works.

215 Grub up Services

1. Grub up galleys, break up manholes etc., and fill in voids in accorded with Clause 408. Stop off all disused drains at point of entry and seal with concrete. Remove all water supply pipes at point of entry; plug and seal all dead ends.

216 Removal of Plant

1. The Contractor shall, upon completion of the demolition works, remove and clear away all temporary buildings, plant, rubbish and superfluous materials, and shall leave the site in a clean and tidy state to the satisfaction of the Director of Works.

217 Approval

1. Demolition work shall not be commenced before obtaining the written approval of the Director of Works.
Underpinning

300

Underpinning
301 **Scope**

1. Underpinning will only be carried out as shown in the Contract Documents and shall be executed under the direct supervision of the Director of Works.

302 **Timbering and Shoring**

1. Provide and fix all required timbering, needling, shoring etc., to ensure the safety of adjoining wall whilst underpinning. Remove and make good all disturbed work on completion.

303 **Underpinning**

1. Where foundations of new walls are below the level of foundations of walls of adjoining premises, excavate as necessary and underpin from the level of bottom of new foundations up to approx. 5cm below underside of foundations of old wall with concrete mix 300/20 for the full thickness of the foundation or as shown in the Contract Drawings.
2. Excavating and connecting shall be carried out in short, discontinuous lengths not exceeding 1.5m unless expressly directed by the Director of Works.
3. Plank and strut to sides of excavation as required or directed.
4. Provide and fix all necessary temporary shuttering to vertical faces of existing foundations and underpinning, and remove when no longer required.
5. Wedge and pin up on top of new underpinning to underside of existing foundations with cement and sand (1:3) mixed fairly dry and well rammed in.

304 **Disposal of Surplus Material**

1. Remove all surplus material to a tip off the site provided by the Contractor.
Excavation, Earthworks and Site Works

400

Excavation, Earthworks and Site Work
Nature of Excavation

1. Information over the nature of the ground conditions made available by the Agency as the result of trial holes (bores) being made or soil test investigation report, does not in any way absolve the Contractor from his responsibilities nor is it guaranteed that similar conditions apply throughout the site.

2. The contractor shall be deemed to have visited the site, inspected trial holes (if any) and decided for himself the nature of the ground and sub-soil to be excavated.

Rock

1. Where rock is encountered in the course of excavation it should be removed with any required machineries / equipment, wedges and levers. Loose rock shall be removed and resulting cavities backfilled in accordance with Clause 407.

Sand or Ballast from the Excavation

1. Gravel or selected material, if approved by the Director of Works may be used for backfilling around foundations or making up levels according to the Contract Documents.

2. It is strictly forbidden to dig for gravel beyond the limits of the excavations as set out in the Contract Documents.

Clear Site

1. Clear site of all rubbish, grub up bushes, shrubs including trees with different heights and dimensions and plantings on site as indicated in the Contract Documents. Demolish, break up and remove buildings, structures and superficial obstructions on the site in the way of or otherwise affected by the Works.

2. Grub up all roots, break up and remove old foundations, drains or manholes, empty and cleanse all old wells and cesspools found during the excavations, seal up connections and dead ends, remove all contaminated earth, fill in voids in accordance with Clause 407.

3. Existing Trees and Roots
   (a) Where shown in the Contract Documents trees shall be uprooted or cut down as near ground level as possible or as instructed by the Director of Works.
   
   (b) All felled timber shall be removed from site and shall not be burned on site without the written approval of the Director of Works. Such approval does not absolve the Contractor from his responsibilities in respect of damage to property caused by burning felled timber.
   
   (c) Holes left by the roots shall be filled in accordance with Clause 407.

4. Trees, bench marks and other objects which are to be retained on the Site shall be adequately protected from damage during the course of the works.

5. Clear the Site of all surplus excavated materials and other debris from the Works and leave clean and tidy on completion.
405. **Excavation**

1. Excavate in any material whatsoever found to reduce levels and to form trenches, pier holes, column bases and the like to the sizes, depths and dimensions shown on the drawings or as directed by the Director of Works. The last 15cm of the excavation shall be performed using light equipment/tools and manually to the approval of the Director of Works.

2. No excavated material shall be removed from the site unless the Director of Works declares that it is unsuitable for use in the works or surplus to the total requirements. Material that is unsuitable for use or surplus to total requirements shall be run to tips provided by the Contractor.

3. All soil that can support vegetation shall be removed from the site of new buildings, terraces, pathways etc., and shall be kept separate from general excavation materials.

4. Defective or soft spots at the bottom of excavations shall be excavated and filled with a lean concrete mix (1:8) to the satisfaction of the Director of Works.

5. The Contractor shall make good with granular fill to Clause 407 or a lean mix concrete (1:8) as directed by the Director of Works:
   (a) Any excavation greater than the net volume required for the Works as described in the Contract.
   (b) Any additional excavation or at below the bottom of foundations to remove materials which the Contractor allows to become unsuitable in the opinion of the Director of Works.

6. The sides of excavations shall be supported by whatever means the Contractor elects to adopt. The supports shall be sufficient to prevent “fall-ins”.

7. Level and trim the bottoms of all excavations including excavation in rock.

8. Bottoms of all trenches pier holes etc., are to be inspected and approved by the Director of Works before concrete or hardcore is laid.

9. The excavation area shall be fenced and protected to avoid accidents which may be resulting from any movements beside the excavation.

406 **Suitable Fill**

1. Return fill and consolidate in selected excavated material (to be not included any red/mud soil) around foundations up to original ground level or to the levels shown, in layers not exceeding 15cm compacted thickness. The material shall be well watered before compaction unless otherwise directed. The Contractor shall be responsible to carry out the compaction laboratory tests, samples to be indicated and directed on site to the instruction of the Director of Works.

407 **Granular Fill**

1. Make up to required levels for floor slabs and at the back of walls as shown in the Contract Drawings or where otherwise shown or directed with selected excavated granular material or hardcore, laid in layers, not exceeding 15cm compacted
thickness. The material shall be well watered before compaction unless otherwise directed. The Contractor shall be responsible to carry out the compaction laboratory tests, samples to be indicated and directed on site to the instruction of the Director of Works.

408 **Hardcore**

1. The material for hardcore shall be chemically inert and possess a physical strength adequate for its purpose. Hardcore shall be well graded in size and shall all pass a 15mm BS sieve.
2. Suitable materials are natural sand, crushed or uncrushed stone or quarry rubble, coarse well burnt clinker, crushed concrete or well burnt brick or a combination of any of these.
3. Hardcore beds shall be finished with a layer of sand.

409 **Disposal of Water**

1. Keep the Site and excavations free from all water by pumping, bailing or other means.
2. The Contractor shall satisfy himself before tendering as to the water table, springs and wells on the Site or adjacent thereto and shall allow in his prices for the removal of all water on the Site during the course of the Works.
3. The Contractor is responsible for any damage to adjoining properties caused, in keeping the excavations free from water. The Contractor must not without written authority use a method of keeping the excavations free from water which involves continuous pumping so as to withdraw water from the foundations of adjoining sites.

410 No filling in shall be executed until the concrete foundations, footings, walls etc., have been inspected and approved by the Director of Works.
Concrete Work

500

Concrete Work
501 General

1. Execute and complete the concrete work shown on the drawings and/or described in the Contract Documents.

2. The contractor shall ensure that each stage of the construction of the reinforced concrete work is supervised and finally inspected by competent and responsible members of his site staff. Proportions of materials for concrete shall be accurately measured in an approved manner and all equipment and measuring devices shall be properly maintained and regularly checked to the satisfaction of the Director of Works.

502 Cement

1. Cement shall be ordinary Portland cement to comply with BS EN 197-1:2011 unless otherwise stated.

2. Cement shall be obtained from an approved manufacturer (except when it is provided by the Agency) and shall be delivered to the Site in the sealed and branded bags or drums of the manufacturer.

3. Cement shall be stored off the ground and under cover. Each consignment shall be kept separate and identified.

4. Cement shall be used in the order of its delivery to the Site; cement from new deliveries shall not be used until all cement from earlier deliveries has been completely used.

5. No cement shall be used which has been manufactured more than max six months prior to its proposed use on site for non-structural purposes only. For all structural jobs should always use fresh cement all to the approval of the Director of Works.

503 Aggregate

1. In general aggregate should be a naturally occurring material complying with the requirements of BS EN 12620:2002+A1:2008.

2. The Director of Works my approve on request the use of other aggregate including types or grading not covered by the BS provided that there is satisfactory data on the properties of concrete made with them.

3. Aggregates shall be stored so that they are self-draining and are not contaminated by other material.
4. Coarse aggregate shall be batched separately from fine aggregate.

5. Samples of the aggregate shall be approved by the Director of Works before the commencement of the Works.

6. The Director of Works may, at his sole discretion, select samples of aggregate from each delivery of aggregate to the site for testing.

7. **Coarse Aggregate**

   (a) Coarse aggregate shall be natural gravel or crushed hard stone, clean and free from dust, loam, clay and organic matter. Crushed stone shall not be of sandy, decayed, or disintegrated rock, or from sulphate, anhydrite or magnesia bearing rock.

   (b) Coarse aggregate shall be graded as follows (% by weight)

   (i) 20mm graded Aggregate for concrete

   100% passing of 37.5mm sieve

   95-100% passing a 20mm sieve,

   30-60% passing a 10mm sieve

   0-10 passing a 5mm sieve,

   (ii) Aggregate for blocks

   100% passing a 20mm sieve,

   85% passing a 15mm sieve,

   30% passing a 10mm sieve,

   0% passing a 5mm sieve.

   c) Careful attention shall be given to the selection and grading of aggregate to ensure that the minimum compressive strengths are attained. A continuous graded aggregate is normally required.

8. **Fine Aggregate (Sand)**

   (a) Fine aggregate shall be natural sand, clean, sharp, coarse grained, and shall mostly pass a 5mm sieve and be free from dust, loam, clay and organic matter.
(b) The grading curve of the fine aggregate for concrete shall fall within one of the following zones

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<tr>
<th>BS Sieve Size</th>
<th>Grading zone 1</th>
<th>Grading 2</th>
<th>Grading 3</th>
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<tr>
<td>10mm</td>
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<td>75-100</td>
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<td>150 micron</td>
<td>0-10</td>
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(c) Fine aggregate for all work, other than concrete, shall pass a 2mm sieve and not less than 95% (by weight) shall be retained on a sieve of 900 mesh/cm².

504 Water

1. Water for use in the Works shall be clean, fresh, potable water free from chemical or organic taint.

2. Water is neutral in PH value, free from suspended solids and liquid contaminants non-miscible with water and that when tested according to the procedures given in BS EN 1008:2002; it had no significant effect on the setting time or strength of concrete.

3. Samples of water shall be approved by the Director of Works before the commencement of the Works.

505 Admixtures

1. In general admixtures may not be used.

2. The Director of Works may approve on request use of an admixture if there is satisfactory data on the properties of concrete made with it. This suitability will generally require verification by trial mixes.

3. Both the amount of admixture and the method of use should be to the approval of the Director of Works, who should be provided with the following data:

   i) Type and/or Proprietary brand
   ii) Typical dosage and the detrimental effects of under dosage/over dosage, if any.
iii) The chemical name of the main ingredient(s) in the admixture.
iv) Whether or not the admixture contains chlorides and if so the chloride iron content expressed as a percentage by weight of the admixture.
v) Whether or not the admixture leads to air entrainment when used at the recommended dosage.

506 Steel Reinforcement

1. Hot rolled mild steel bars and hot rolled high yield steel bars shall comply with the requirements of BS 4449:2005+A2:2009 or approved equivalent.

2. Cold worked steel bars shall comply with the requirements of BS 4449:2005+A2:2009 or approved equivalent.

3. Steel fabric reinforcement shall comply with the requirements of BS 4483:2005 or approved equivalent and shall be delivered to the site in flat mats.

4. Steel reinforcement shall be stored in proper racks clear of the ground.

5. Steel reinforcement shall be free from oil, dirt, scale, loose rust and other deleterious matter before being placed in position.

507 Concrete

1. The concrete mix shall generally comply with the requirement of Table 1.

Table 1 prescribed mixes for ordinary structural concrete

Weighs of damp aggregate based on one/50 kg bag of cement (kg)

<table>
<thead>
<tr>
<th>Cube Strength (kg/cm²)</th>
<th>Maximum Size of Aggregate (mm)</th>
<th>Workability Slump (mm)</th>
<th>Medium 27-75</th>
<th>High 75-125</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Coarse Aggregate</td>
<td>240</td>
<td>210</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sand</td>
<td>155</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>Coarse Aggregate</td>
<td>215</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sand</td>
<td>135</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>Coarse Aggregate</td>
<td>190</td>
<td>155</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sand</td>
<td>115</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>Coarse Aggregate</td>
<td>170</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>Class kg/cm²/mm</td>
<td>Minimum cement content (kg/m³)</td>
<td>Minimum Compressive Strength Preliminary Test</td>
<td>At 28 days (kg/cm²) Works Test</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>-------------------------------</td>
<td>---------------------------------------------</td>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td>200/20</td>
<td>300</td>
<td>300</td>
<td>One cube minimum 180 and the average 220</td>
<td></td>
</tr>
<tr>
<td>250/20</td>
<td>300</td>
<td>350</td>
<td>One cube minimum 225 and the average 275</td>
<td></td>
</tr>
<tr>
<td>300/20</td>
<td>300</td>
<td>400</td>
<td>One cube minimum 270 and the average 330</td>
<td></td>
</tr>
</tbody>
</table>
Notes to table 2:

a) Aggregate shall be weight batched.
b) Cement may either be weight batched or measured by whole bags.
c) Cement content shall not exceed 540 kg/m³.

508 Mixing

1. Cement shall be measured by weight or by the use of a whole number of 50 kg bags. Sand and aggregate generally shall be measured by weight but the Director of Works may approve volume batching of grade 100/150/200 in which case approved gauge boxes must be used.

2. The amount of water added to the dry mix shall be sufficient to give a mix that complies with the requirements of Table 1 or 2 but in no case shall the water/cement ratio exceed 0.60. The amount of water used shall be measured by weight or volume in a manner approved by the Director of Works.

3. The consistency of the mix shall be such that facility for easier placing does not affect the required compressive strength of the concrete. Slump cone, filled in four progressive layers, each well tamped. The cone shall be removed immediately after filling.

4. All mixing shall be carried out in a mechanical batch mixer of minimum capacity of 250 liters unless otherwise approved. Concrete shall be mixed for not less than two minutes after the addition of water and mixing shall continue until there is a uniform distribution of materials and the mass is uniform in color and consistency.

509 Ready Mixed Concrete

1. Ready mixed concrete may, with the approval of the Director of Works, be used on the contract and it shall comply with all the requirements of the Specification.

2. The concrete shall be carried in purpose made agitators operating (Industrial Mixer) continuously or truck mixers.

3. The concrete shall be compacted and in its final position within 2 hours of the introduction of cement to the aggregates, the time of such introduction shall be recorded on the delivery note together with the weight of the constituents of each mix.
4. When truck mixed concrete is used the water shall be added under supervision either at the site or at a central batching plant as agreed by the Director of Works but under no circumstances shall water be added in transit.

5. Mixing shall continue for not less than 100 revolutions at a rate of not less than 7 revolutions per minute.

6. All structural elements shall be ready mix concrete.

510 Placing of Reinforcement

1. Reinforcement shall be placed in accordance with the drawings. Nothing shall be allowed to interfere with the design requirements of the reinforcement. Reinforcement shall be secured to prevent displacement before or during the pouring of concrete. Braces, supports, distance pieces and spacers which are to be left in position shall be of an approved design, if concrete they shall be made with 10mm maximum size aggregate to produce the same strength as the adjacent concrete. The inside radius of stirrups shall be in full contact with the rods around which they fit.

2. Rods shall be bound together with pliable, annealed soft iron wire no. 16 B.W.G (Birmingham Wire Gauge) (1.65mm) unless otherwise specified. The projecting ends of this wire shall be turned into the main body of the concrete and shall not encroach on the cover.

3. Reinforcement shall be cut and bent in accordance with BS 8666:2005 and BS EN ISO 3766: 2003. Cold-worked or hot-rolled high yield bars shall not be straightened or bent again once having been bent. Where it is necessary to bend reinforcement projecting from the concrete the internal radius of the bend shall not be less than twice the diameter of the bar.

4. During the placing of concrete a responsible steel fixer shall be in attendance to perform any adjustments or corrections to the reinforcement necessary to maintain it in the position shown in the Contract.

5. Reinforcement shall be inspected and approved by the Director of Works before the concrete is poured. Such approval shall not relieve the Contractor of his responsibilities in connection with the Work.

6. The horizontal distance between individual reinforcement bars shall normally not, except at splices, be less than the diameter of the largest bar or 5mm more than the nominal maximum size of the coarse aggregate used whichever is greater. The vertical distance between parallel reinforcement shall normally not, except at splices, be less than the nominal maximum size of the coarse aggregate used. Bars may be arranged in pairs touching in which case the gap between pairs of bars shall be as specified above. The gaps between corresponding pairs in each row should be vertically in line.

7. The lengths of splices, dowels and anchors, shall be for mild steel plain bars 46D, high yield steel plain bars 53D, high yield steel deformed bars 41D(D: bar diameter).
8. The concrete cover to all reinforcement including links shall be:
   a) In slabs – 2.5cm
   b) In beams – 2.5cm
   c) In columns – 3.0cm
   d) In footings and all earth and water retaining structure – 5.0cm

9. Reinforcement in structures shall not be welded.

511 Formwork

1. The contractor shall supply formwork, shuttering, props, strutting, hanging bolts, staying, gangways, expansion boards, fillets, moldings and the like and shall ease and remove the same and do all that is necessary to execute and complete the concrete construction.

2. Formwork shall be adapted to the structure and the finish of the concrete and shall be made of metal or timber sufficiently rigid and tight to prevent loss of grout or mortar from the concrete at all stages. It shall be fixed to the correct shape and profile securely supported and braced to withstand vibration or the movement of plant, men or materials without deformation or displacement so that the final concrete structure shall be in the position and of the shape dimensions and surface finish described in the Contractor.

3. The maximum permissible deflection of the formwork under any load shall be 2mm or 1/600th of the unsupported span, whichever is the lesser.

4. Joints in formwork shall be close enough to prevent the loss of liquid from the concrete.

5. Formwork shall be so arranged as to permit easing and removal without jointed the concrete. Wedges, cramps and bolts shall be used wherever possible for securing the true position of the forms.

6. Sawn formwork, namely properly designed formwork of closely jointed swan boards, may be used for surfaces which are to be rendered or plastered.

7. Wrought formwork, namely properly designed formwork or closely jointed planed thicknesses boards, with joints aligned to produced continuous or horizontal lines shall be used for concrete surface which will remain exposed, the resulting surface shall be smooth and free from blemishes.

8. Formwork shall be cleaned out immediately before concrete is placed and necessary temporary openings shall be left to facilitate cleaning.

9. The internal faces of formwork shall be treated with mold oil, care being taken that the mold oil does not contaminate the reinforcement.

10. Formwork shall be inspected and approved by the Director of Works before concrete is poured which approval shall not relive the Contractor of his responsibility for the safety and efficiency of the formwork.
11. Striking Formwork

(a) The Director of Works shall be informed in advance when the Contractor intends to strike any formwork.

(b) The time at which the formwork is struck shall be the Contractor’s responsibility. However, formwork supporting cast in situ concrete may be struck when either:

(i) The concrete has, in the opinion of the Director of Works, attained a compressive strength of 200 kg/cm² or twice the stress to which it will then be subject, provided such earlier striking will not result in unacceptable deflections due to creep etc.

(ii) The following minimum periods shall have elapsed between the completion of placing of concrete in the Works and the removal of the forms. These periods are based on the use of Ordinary Portland Cement and a constant surface temperature of the concrete of 16°C and shall be increased in colder weather or in the case of large spans all to the approval of the Director of Works.

Vertical formwork to columns, beams, walls 24 hours

Soffit formwork to beams and slabs 12 days

12. Care shall be taken that when formwork is reused its surface shall be thoroughly cleaned to the approval of the Director of Works.

512 Placing Concrete

1. Concrete shall not be placed in any part of the structure until the written approval of the Director of Works has been given.

2. Concrete shall be placed as soon as possible after mixing and in all cases within (30) minutes after mixing commences or within 30 minutes after discharge from the agitator for ready mix concrete.

3. Concrete shall be transported by an approval means which shall prevent contaminated or segregation or loss of the ingredients.

4. Concrete which is be lowered to a depth exceeding 120cm shall be conveyed in suitable vessels or by chute to a point as near as possible to the location of pouring. The vessels or chute shall be kept clean and well-watered.

5. All concrete shall be compacted to produce a dense homogeneous mass.
Unless otherwise agreed by the Director of Works it shall be compacted with the assistance of vibrators. Sufficient vibrators in serviceable condition shall be on site so that spare equipment is always available in the event of breakdowns.

6. Vibration shall not be away of the reinforcement. Where vibrators of the immersion type are used, contact with reinforcement and all inserts shall be avoided, so far as is practicable.

7. Concrete shall not be subjected to vibration between 4 and 24 hours after compaction. When in-situ concrete has been in place for 4 hours, or less as directed by the Director of Works no further concrete shall be placed against it for at least 24 hours and until the final Setting Time of Concrete.

8. Concreting of any one unit or section of the work shall be carried out in one continuous operation and no interruption of the work will generally be allowed. Where beams and slabs form an integral part of the structure they shall be poured in one operation. Concrete shall be deposited in horizontal layers to a compacted depth not exceeding 450mm where internal vibrators are used or 300mm in all other cases.

9. Temperature limits During Concreting

(a) Concreting shall be discontinued when the descending air temperature in shade reached 2°C and shall not be resumed until the ascending air temperature in the shade reached 1°C.

(b) When the air temperature in the shade is above 32°C special precautions shall observed during mixing and pouring concrete to the satisfaction of the Director of Works which should include:

   (i) Shading of the aggregate piles

   (ii) Adding the water to the aggregate before the cement

   (iii)Concrete shall be protected from the sun and wind as soon as it is placed.

(c) Concrete when deposited shall have a temperature of not less than 5°C and not more than 32°C. Concreting shall not be permitted when the air temperature in the shade is above 45°C.
513 Finishes

1. **Unformed Surface Finish**
   
   (a) Generally the concrete shall be uniformly leveled to produce a plain surface and after the concrete has hardened sufficiently the surface shall be floated to produce a uniform surface free from screed marks.

2. **Steel Troweled Finish**
   
   (a) The concrete shall be uniformly levelled to produce a plain concrete surface.

   (b) After the concrete has hardened sufficiently the concrete surface shall be floated sufficiently only to produce a uniform surface free from screed marks.

   (c) When the moisture film has disappeared and the concrete has hardened sufficiently to prevent laitance from being worked to the surface, the concrete shall be steel trowel led under firm pressure to produce a dense smooth uniform surface free from trowel marks using required machinery for this job as Helicopter machine.

3. A slab finish which is to receive waterproofing shall be to an accuracy such that when tested with a 3m straight edge the maximum depression shall not exceed 10mm nor shall abrupt irregularities exceed 3mm.

514 Construction Joints

1. Construction joints shall only be formed where shown on the drawings or approved in writing by the Director of Works.

2. Construction joints shall be made at right angles to the axis of the member and formed against firm stop boards. Stop boards shall be so made as to form a grooved or indented profile to the concrete.

3. Where a construction joint contains a formed surface, that surface shall be roughened to expose the aggregate without damaging the aggregate and the arises of the joint. The roughened surface shall then be washed with clean water to remove loose particles.

4. Where sections of the work are carried out in lifts, the reinforcement projecting above the lift being cast shall be adequately supported so as to prevent movement of the bars during the casting and setting of the concrete.
5. Wherever possible laitance and all loose material shall be removed while the concrete is still green and no further roughening shall then be required. Where this is not possible, it shall be removed by mechanical means after the concrete has been in position for more than 24 hours. The roughened surface shall then be washed with clean water.

515 Precast Concrete

1. The contractor shall provide molds and all other items in connection with the precast concrete work and shall cast, cure, hoist, cut and pin or build in, including bedding and pointing, and in cement and sand mortar (1:4) as shown on the drawings. Precast concrete shall comply with all the requirements of the Specification for concrete.

2. Manufacture of Precast Reinforced Members off the Site

   (a) The Director of Works’ approval to the method of manufacture shall be obtained before work is started. When the method has been approved, no changes shall be made without the consent of the Director of Works.

   (b) The Contractor shall inform the Director of Works in advance of the date of commencement of manufacture and casting of each type of member.

   (d) A copy of all 28 day cube test results relating to the work shall be sent to the Director of Works as soon as they become available.

   (e) Where the Director of Works requires tests to be carried out, no members to which the tests relate shall be dispatched to the site until the tests have been satisfactorily completed.

   (f) All members shall be indelibly marked to show the Member Mark as described in the contract, the production line on which they were manufactured the date on which the concrete was cast and, if they are of symmetrical section, the face which will be uppermost when the member is in its correct position.

516 Curing Concrete

1. Immediately after compaction and for 7 days thereafter concrete shall be protected from the harmful effects of the weather including rain, rapid temperature changes and from drying out too quickly by being kept covered with sacking or sand, constantly kept moist by spraying with water of by covering with plastic sheeting or by using some other method which minimizes the loss of water from the concrete, such as hessian, chemical spray, liquid membrane forming curing compounds, polyethylene film/sheet …etc.
2. The method of curing used shall be subject to the approval of the Director of Works.

517 Testing Concrete

1. Prescribed Mixes to Table 1

   (a) The weights of cement and aggregate shall be as specified 5±%.

   (b) The workability of the concrete shall be within the following limits: slump-specified value ±25mm or ±1/3 specified value whichever is the greater.

2. Design Mixes to Table 2

   (a) The contractor shall provide concrete cubes and shall have tests under-taken for compressive strength at least two cubes for every transit mixer, or when directed by the Director of Works. The cubes shall be taken at random from batches of concrete after leaving the mixer and under the supervision of the Director of Works.

   (b) All cubes shall be made and tested in concordance with BS 1881-122:2011 and BS 1881-130: 2013.

   (c) The specified strength requirements shall be assumed satisfied if at 28 days only one cube test result strength is 90% of the specified strength and the average of all cubes test results are 110% of the specified strength.

3. If the results of concrete testing failed after 28 days, the Director of Works shall decide removal and replacing of failure concrete member or accept the different types of further action to be taken such as redesign of the member, Strengthen the member, core test or loading test.

518 Expansion Joints

1. Expansion joints shall be formed in the positions shown on the drawings.

2. Expansion joints shall be filled for the full width or depth of the joint with approved expansion joint filler.

3. The exposed edges of expansion joints shall be pointed to a depth of not less than 2cm with approved expansion joint pointing unless otherwise shown on the drawings.
4. The exposed edges to expansion joint covers described under section 10 hereafter, unless otherwise shown on the drawings.

519 Wall Ties

1. Where stone or block walls abut against concrete they shall be tied thereto by means of approved galvanized steel ties or strips of galvanized expanded metal.

2. Ties shall be fixed to the formwork in an approved manner prior to casting the concrete, care being taken to avoid contact with the reinforcement. When the formwork is struck the ties shall be straightened as necessary and built into the bed joints of the wall.

3. Where walls abut against a concrete column one vertical row of ties shall be used for each junction. The vertical spacing shall be every two courses (42cm).

4. Where walls are built as a facing to concrete, ties shall be staggered vertically and horizontally and be spaced at approximately 100cm horizontally and 42cm vertically.
Blockwork

600

Blockwork
601 General

1. Execute and complete the block work in the positions and to the dimensions and sizes shown on the drawings and/or described in the Contract Documents.

602 Materials

1. Blocks

   (a) Blocks shall be made in vibrated pressure machines and shall be in general manufactured from cement, aggregates and water. The minimum cement content shall be 200kg cement to 0.46m³ fine aggregate and 0.82m³ coarse aggregate. The specifications given for concrete materials under 500 shall apply equally for block work materials.

   (b) The Director of Works may approve on request the use of a different binder to cement, or the use of other aggregate types or grading, provided that there is satisfactory data on the properties of the blocks made from these.

   (c) Blocks shall be hard, sound, square and clean with well-defined arises. Where a special face finish is required this shall be as specified in the Contract Drawings.

   (d) Blocks for walling shall be 40cm (3mm) long and 20cm (3mm) high unless otherwise shown on the drawings. The tolerance in thickness shall be (1mm).

   (e) Blocks for floor/roof slabs shall be of the shape and dimensions shown on the drawings. The tolerance in length or width shall be 5mm and the tolerance in thickness shall be 3mm.

   (f) The design of hollow blocks for walling shall be approved by the Director of works.

   (g) Blocks shall be cured for at least three days after manufacture, being kept wet by sprinkling with water.

   (h) Block Classification and Testing

      (i) Blocks shall be denoted by the block type A, and the minimum average compressive strength.

      (ii) Blocks shall be tested for density and compressive strength whenever required by the Director of Works. For each test 10 blocks shall be selected by the Director of Works. The blocks selected shall be immersed
in water for 24 hours before compressive testing and shall not absorb more than 15% of their own weight of water during this period.

(j) The blocks shall comply with the requirements of Table 3.

(i) Should a test not meet these requirements the batch of blocks from which the samples were taken shall not be used in the Works and shall be removed from the site.

<table>
<thead>
<tr>
<th>Block Type</th>
<th>Density</th>
<th>Minimum Average Compressive Strength kg/cm²</th>
<th>Compressive Strength lowest Individual Block kg/cm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Not less than 1500kg/m³</td>
<td>50</td>
<td>40</td>
</tr>
</tbody>
</table>

Note to Table 3

(i) Block density is the block weight divided by the gross volume (including core space).
(ii) Block compressive strength is the crushing load divided by the gross area (including core space).
(iii) Type A is a concrete block made using natural dense aggregate for use above/below ground.

(k) Cost of the tests shall be borne by the Contractor.

2. **Lime**

(a) Lime shall be quicklime properly slaked with the minimum amount of water by experienced workmen and shall be left undisturbed for not less than 36 hours.

(b) The slaked lime shall be screened before use to remove all lumps, stones and other impurities.
(a) For concrete block Minimum Average Compressive Strength 50kg/cm², minimum average strength the mortar used shall be as noted on the drawings and according to the tender documents. The mortar mix shall consist of cement and fine aggregate in the proportion 1: 4 by volume.

The Minimum strength of the mortar shall be 10kg/cm² (using 75mm test cubes)

(b) For blocks made with a different binder to cement the mortar used shall be as noted on the drawings or as approved by the Director of Works.

(c) Mixing shall be carried out using mechanical mixer on site or ready mix mortar and put on a close boarded platform or other impervious surface.

(d) Mortar mixed on site shall be used within two hours of mixing. While the ready mix mortar shall be used according to the ready mix company instructions and the approval of the Director of Works.

(e) Manual mixing is not allowed for any type of mortar or concrete.

604 Workmanship

1. Blocks shall be soaked in water before laying. The tops of walls, where work has been left off shall be thoroughly wetted before work is recommended.

2. Walls shall be bonded in accordance with best constructional practice or as shown on the drawings. Where required for bond, blocks shall be carefully cut to size.

3. Walls shall be carried up regularly and no portions shall rise more than 1m above adjacent portions. At such changes in levels work shall be raked back.

4. Courses shall be properly leveled. Perpendicular joints, quoins, jambs and angles shall be plumbed as the work proceeds.

5. The gauge for walls shall be ten courses to 210cm unless otherwise shown on the drawings or approved.

6. Blocks shall be spread with mortar before laying and joints shall be solid through the full thickness of the wall. Joints shall be flushed up, or raked out, as the work proceeds.
7. Walls which are to be left unplastered shall be faced with selected blocks, built with a fair face and pointed with a neat flush joint.

8. Walls which are to be plastered shall have the joints raked out to a depth of 15mm.

9. Take out joints for flashing and turn-in of asphalt where required as work proceeds.

605 **Strengthened Quoins and Ends**

1. The vertical row of air cells nearest the quoin, end or opening, shall be packed solid with concrete mix 100/20 as the work proceeds.

2. Secure door frames and the like in block work with stout, galvanized iron ties in accordance with Clauses 903 and 1003 secured to same and built into the block work as the work proceeds. Including 150mmx20mmx2.5mm galvanized steel wall ties or as specified in the contract documents.

606 **Claustra Walling**

1. Blocks for claustra walling shall be of a design approved by the Director of Works and shall be of self-finished concrete.

2. The foregoing clause 603 of this Specification shall, where appropriate, apply to claustra walling.

607 **Sundries**

1. Cut and fit, build in, wedge up, pin or otherwise secure in an approved manner the walls to columns, beams, slabs, steelwork and the like. Clause 519 specifies the method of tying to concrete.

2. Leave or form chases, rebates, openings, holes and the like for all trades and make good.

3. Cut and pin or build in lintels, cramps, plates and the like and make good all to the approval of the Director of Works.

4. Facing work shall be kept clean as the work proceeds.
Stonework

700

Stonework
701 General

1. Execute and complete the stonework in the positions and to the dimensions and sizes shown on the drawings and/or described in the Contract Documents.

702 Materials

1. Stone
   
   (a) Samples of stone before and after dressing shall be submitted to the Director of Works for approval.

   (b) Stones shall be hard limestone of even color and texture free from holes and cracks.

   (c) The exposed surfaces of stones shall be dressed rock faced and all other surfaces shall be rough hammer dressed. Each face shall be true and square.

   (d) Unless otherwise shown on the drawings the length of a stone shall be not less than one and a half times its height.

2. Mortar
   
   (a) Mortar for building stonework shall consist of cement and fine aggregate, mixed in the proportions 1:2 by volume. Mortar for pointing the stone joints shall consist of white cement and sand mixed in the proportions 1:2 by volume including waterproofing material.

   (b) The requirement Clause 603 of this Specification shall, except for mortar mixes, apply to mortar for stonework.

703 Workmanship

1. Stones shall be laid level, plumb, square and true. All arises shall be sharp, true to line and square.

2. Stones shall be soaked in water before laying. The tops of walls, where work has been left off, shall be thoroughly wetted before work is recommended.

3. Stones shall be laid with the natural or quarry bed horizontal.
4. Stones shall be laid in regular horizontal courses. The stones in each course shall be of equal height and shall be not less than 25cm and not more than 35cm high.

5. All vertical and horizontal joints in stonework shall be 5mm thick and shall be solid with mortar for the full thickness of the joints.

6. Face joints shall be raked out to a depth of 25mm as the work proceeds.

7. On completion of the stonework the joints shall be pointed. The pointing shall be not less than 20mm thick carried out in one coat. The pointing shall be finished with a curved edged tool leaving a clean sharp, regular joint or flush finished all according to the drawings and contract documents.

8. Stones which have been holed, broken or damaged in any way and broken stones which have been repaired shall not be used in the work.

704 Concrete Backing

1. Stonework shall be built with a concrete mix 300/20 backing. The stonework and concrete backing shall be of the thicknesses shown on the drawing. The concrete backing shall be carried out simultaneously, course by course, with the stonework. The projection of the fixing required under Clause 519 shall be completely embedded in the mortar of the face work.

705 Rubble Stonework

1. This type of work will be used for construction of dry stone boundary walls not exceeding 150cm in height, the average thickness will be as determined in the drawings or as directed by the Director of Works.

2. The stone used should be natural, hard and of various sized but not less than 200mm in any dimension.

3. Mortar not exceeding 10% of the volume of the wall could be used at the request of the Director of Works.

4. The face of the wall shall be laid level plumb

5. The top face shall be horizontal and capped as shown on the Contract Drawings.
Sundries

1. Cut and fit, build in, wedge up, pin or otherwise secure in an approved manner the stonework to beams, slabs, columns, steel work and like. Clause 519 specifies the method of tying to concrete.

2. Leave or form chases, rebates, openings, holes and the like for all trades and make good.

3. Cut and pin or build in lintels, cramps, plates and the like and make good all to the approval of the Director of works.
801 General

1. Execute all carpentry work shown on the drawings and/or described in the Contract Documents in a proper manner and in accordance with the Specification.

2. Carpentry work shall include all structural timber work, grounds, backings, temporary work and the like.

3. The Contractor is to perform all cutting away and making good in attendance upon all other trades.

4. The Carpenter is to clean out all shavings, cut ends and other timber waste from all parts of the building and remove same from site all to the satisfaction of the Director of Works.

5. All timber shall be hardwood unless otherwise specified.

6. Timber sizes shown on the drawings are finished sizes.

802 Materials

1. Timber for carpentry work shall be of a species and quality suitable for the purpose for which it is to be used. Structural timber shall be group I or II Structural hardwood in accordance BS EN 1995-1-1:2004+A2:2014.

2. Samples of every type of timber which the Contractor proposes to use in the Works shall be sent to the Director of Works for approval. Each sample shall be labelled and the label shall state the species of the timber and the purpose for which it is to be use.

3. Timber shall be sawn square, straight and true and shall be free from the following defects:

   (a) Splits, ring shakes and soft pitch
   (b) Checks exceeding 30cm long
   (c) Checks Exceeding 1 1/2mm wide.
   (d) Checks more than half the thickness of the timber in depth
   (e) Knots exceeding 3cm mean diameter
   (f) Knots exceeding half the width of the surface
   (g) Decayed dead knots unless cut out and plugged
   (h) Loose knots or knot holes unless cut out and plugged
   (i) Pitch pockets
   (j) Decay and insect attach
4. The timber which is not to receive a preservation treatment is to be seasoned to moisture content of 20% unless otherwise specified.

5. Where preservation treatment is specified in the Contract.

(a) The moisture content of the timber immediately prior to treatment shall not exceed 28 percent and the timber shall be free from surface moisture and dirt. Treatment is to take place after all cutting and shaping is complete, and care must be taken not to damage surfaces of treated timber. If surface damage or cutting after treatment is unavoidable a liberal coating of preservative is to be made to such areas.

(b) The preservative treatment shall be either.

(i) Creosote applied by vacuum/pressure to BS 144:1997, or
(ii) Copper/Chrome Arsenic salts applied by vacuum/pressure.

803. Workmanship

1. Timber shall be left “from the saw”, unless otherwise shown on the drawings, and shall be to the full dimensions shown on the drawings.

2. All framing shall be jointed as shown on the drawings or to the approval of the Director of Works.

3. Joints shall be designed and constructed so that they will transmit the loads and resist the stresses to which they will be subject.

4. Unless otherwise stated joints shall be secured with a sufficient number of nails of an approved type.

5. A butt joint shall be secured, wherever possible, with nails driven from the far side of the flanking number.

6. The joining surfaces of all connections exposed to the weather shall be thickly primed except where adhesives are used.

7. Surfaces shall be in contact over the whole area of the joint before fastenings are applied.

8. No nails, screws, or bolts shall be placed in an end split. If splitting is likely to occur, holes for nails are to be pre-bored at diameters not exceeding four fifths of the diameter of the nail. Clenched nails shall be bent at right angles to the grain. Lead holes shall be bored for screws.
9. Members of structural units shall be clamped and spiked together before drilling bolt holes. Holes for bolts shall be bored from both sides. A tolerance of 1mm will be allowed in positioning bolt holes.

10. Timber connectors, where specified, shall be two single-sided toothed plates for demountable joints and one double-sided toothed plate for permanent joint.

11. Timber shown on the drawings to be plugged shall be properly and securely fixed by means of splayed plugs or expansion bolts.

12. Timber shall not be built into walls or floors unless this is so shown on the drawings when it shall be coated with a wood preservative suitable for the position in which the member is to be incorporated.

13. Every post, stud, beam, binder, joist, rafter and purlin shall extend in one piece between its supports for fixings or shall be jointed in an approved manner to ensure the necessary structural stability.

14. All cantilevers shall be effectually counterbalanced by the other portion of the member or by suitable fixing or by dead loading.

15. The position of joints in wall plates shall be agreed with the Director of Works before the plates are fixed. In general, plates shall be in one continuous length between points of change direction. Joints at corners and in running lengths, where unavoidable, shall be halved.

   No plates shall be built into walls of masonry blockwork or concrete. When the plates are supported over, or let into the sides of studs, they shall be fixed to every stud. Where they are laid over bearing walls of masonry blockwork or concrete, they shall be solidly bedded in cement mortar (1:3) to the required level.

16. The anchorage of roof frames, trusses and other structures that need to be secured against displacement, as shown on the Contract Drawings, shall be provided to the approval of the Director of Works by means of extra fittings at all points of support or direct loading.

17. Where joists of support are to be notched over supports, the depth of notches shall not exceed two fifths of the depth of the joists unless otherwise specified. The bearing surface of all notches shall be cut smooth and true in relation to the surface on which it bears.

18. (a) Holes cut in joists or other timber members shall be centered on the neutral axis and shall be limited to one third of the depth of the member. No holes shall be cut without the approval of the Director of Works.

   (b) Pipe and cable runs across joists shall be positioned away from the center of the span.
(c) Nothing top, bottom or faces of timber members is not permitted.

19. (a) Plates, joists, rafters, purlins and other members used for roof construction are to be of the sizes specified or as shown in the Contract Drawings and details. The spacing of rafters shall be the same as that used for joists unless otherwise stated.

(b) Overhangs shall be adequately cantilevered and anchored back to the main roof frame without weakening it in any way.

20. (a) All joints in trusses or framework shall be of the most appropriate type, accurately formed and adequately secured with nails unless otherwise specified. The arrangement of the members and the construction of all joints shall be in accordance with the Contract Drawings and this Specification.

(b) Deflection shall not exceed that specified.
Joinery

900

Joinery
**901 General**

1. Execute and complete all joinery work shown on the drawings and/or described in the Contract Documents in a proper manner and in accordance with this Specification.

2. Joinery work shall include all timber finishing’s, non-structural timber work and all other timber work not included in carpentry work including the supply and fixing of:-
   
   (a) Metal straps lugs and dowels.
   
   (b) Priming, preservatives, polishing or such wood finishes as are specified in the Contract Documents.
   
   (c) All ironmongery specified or shown on the drawings and/or schedules including all screws, nails, plugs, nuts, bolts and other fittings required for the completion of the work.

3. All timber shall be hardwood unless otherwise specified complying with BS EN 942:2007.

4. Timber sizes shown on the drawings are finished sizes unless otherwise stated.

5. The joiner shall clean all joinery work and shall leave the whole of the work in good order and to the complete satisfaction of the Director of Works.

**902 Materials**

1. Timber for joinery work shall be of a species and quality suitable for the purpose for which it is to be used.

2. Samples of every type of timber which the Contractor proposes to use in the Works shall be sent to the Director of Works for approval. Each sample shall be labelled and the label shall state the species of timber and the purpose for which it is to be used.

3. (a) Timber shall be properly seasoned and shall be sawn square, straight and true.

   (b) The moisture content of the timber used for internal joinery shall not exceed 10% and that for external frames and doors shall not exceed 16%
when the timber is delivered to the site and the figures shall be maintained until the building is finished.

4. Timber shall be free from the following defects:
   (a) Splits, ring shakes and pith wood.
   (b) Sapwood
   (c) Decay and insect attack
   (d) Slope of grain exceeding 1 in 10 for softwoods and exceeding 1 in 5 for hardwoods.
   (e) Checks other than hair checks
   (f) Case hardening and honeycombing
   (g) Boxed heart
   (h) Knots exceeding 2cm mean diameter
   (j) Knots exceeding half the width of the surface
   (k) Knots clusters
   (l) Decayed, dead or loose knots
   (m) Knot holes
   (n) Pitch pockets

5. Plywood
   (a) Plywood shall be of best quality suitable for the purpose for which it is to be used.
      (i) Grade 1 where varnished
      (ii) Grade 2 where painted
      (iii) Grade 3 where hidden
   (b) Samples of plywood shall be sent to the Director of Works for his approval.
   (c) Plywood shall be of a single thickness. The Contractor will not be allowed to make up thicknesses by bonding plywood together.

6. Block board
   (a) Block board shall be built-up board with a core of softwood strips 2cm to 3cm wide glued edge to edge and faced with plywood or other facing as shown on the drawings.
   (b) Samples of block board shall be sent to the Director of Works for his approval.
6. **Laminated Plastic Sheeting**

   (a) Laminated plastic sheeting shall be of 3mm minimum thickness and shall have a matt surface finish.

   (b) Laminated plastic sheeting shall be first quality available in the local market to the approval of the Director Of works.

   (c) Samples of laminated plastic facing shall be sent to the Director of Works for approval of quality, pattern and color.

8. **Ironmongery and Hardware**

   (a) Ironmongery and hardware shall be the best quality available. Samples of the ironmongery and hardware items shall be sent to the Director of Works and approval.

   (b) Ironmongery and hardware shall be complete with screws of a type, size material and finish to suit the item of ironmongery or hardware which they are fixing.

903. **Workmanship**

1. All timber shall be sawn, planed, drilled or otherwise machined or worked to the sizes and shapes shown on the drawings.

2. All timber that is to be exposed in the finished surfaces shall be finished smooth unless otherwise shown on the drawings.

3. Where a natural finish, finishing for staining, clear polishing or varnishing is shown on the drawings the timber in adjacent pieces shall be matched, uniform and symmetrical in color and grain.

4. The surface finish to timber shall be as shown on the drawings.

5. The arrangement, jointing and fixing of joinery work shall be such that shrinkage in any art or any direction, shall not impair the strength and appearance of the finished work and shall not cause damage to contiguous materials or structures.

6. The joinery shall be constructed exactly as shown on the drawings. Where joints are not specifically indicated they shall be the recognized forms of joints for each position to the approval of the Director of Works.

7. Loose joints shall be used where provision must be made for shrinkage or other movements acting other than in the direction of the stresses of fixing or loading.
8. The joiner shall take all reasonable measures to check or prevent capillary penetration of water in the joints and open connections of external joinery works and in all other positions where joinery works may be exposed to water.

9. Mortices and holes for ironmongery shall be no larger than is necessary for the easy insertion and withdrawal of the ironmongery fitting.

10. Ironmongery shall be fitted and shall be taken off before any painting work is commenced and shall be refixed after all painting operations are complete.

11. Hinges shall be housed or let into doors, windows, frames and the like.

12. Coat Rails
   (a) Coat rails shall be of softwood of the sizes and profiles shown on the drawings.
   (b) Coat rails shall be screwed and countersunk. The screws shall be taken into approved expansion sleeves let into the blockwork or concrete walls.
   (c) Coat rails shall be complete with coat hooks fixed at 40cm centers.
   (d) Coat hooks shall be of 6mm x 2cm galvanized mild steel 16cm girth bent to shape or approved equivalent.

13. Display Board and Blackboard Frames and Panels
   (a) Display board and blackboard frames and chalk trays shall be of hardwood of the sizes and profiles shown on the drawings or equal approved.
   (b) Display board and blackboard frames shall be screwed and countersunk. The screws shall be taken into approved expansion sleeves let into blockwork or concrete walls.
   (c) Chalk trays shall be supported on galvanized mild steel or aluminum brackets as detailed on the drawings. Each bracket shall be fixed after plastering with two screws taken into approved expansion sleeves let into blockwork or concrete walls. Each bracket shall be twice countersunk, drilled and screwed to the chalk tray.
   (d) Display panels shall be approved 12mm thick standard, self-finished fiber insulation board. Display panels shall be fixed to the wall face by frames.
14. External and Internal Doors

(a) Doors shall be made to the sizes and details on the drawings.

(b) Doors shall be fitted to give a uniform clearance of not more than 3mm all around and shall be hung to the frames or linings.

15. Frames, Architraves etc.

(a) Frames, linings, architraves, beads, glazing beads, cover moldings and the like shall be of the sizes, dimensions and profiles shown on the drawings.

(b) Frames and linings to doors other than cupboard doors shall be securely fixed to block or concrete walls by means of galvanized mild steel door cramps 3mm thick, 5cm wide and 20cm girth. The cramps shall be bent at right angles, one leg twice screwed to the frame or lining, and the other leg provided. Cramps shall be built in as the blockwork proceeds and not cut and pinned at a later stage including galvanized sub-frame for doors 2mm thick in accordance to the contract documents and the approval of the Director of Works.

(c) Frames and linings to doors shall be drilled and bolted to concrete to the approval of the Director of Works.

(d) Glazing beads shall be fixed with brass caps and screws at not more than 22.5cm centers.

(e) Or readymade doors as specified in the contract documents and the approval of the Director of Works.

16. Cupboards shall be made to the sizes and details shown on the drawings.

17. Shelving

(a) All shelving shall, unless otherwise specified, be of 2cm thick block board with hardwood edging glued and pinned to exposed edges. Block board for shelving shall, except where otherwise specified, be covered with plywood on both sides, Laminated Plastic Sheeting 3mm thick or varnish finish paint all in accordance to the drawings and contract documents.
(b) All shelving shall, unless otherwise specified, be supported in an approved manner on all edges abutting a wall with fixings at not more than 20cm centers screwed to approve expansion sleeves let into blockwork or concrete walls.

18. **Worktops**

(a) The worktops to the classroom cupboard units shall, unless otherwise specified, be of 28mm thick block board faced both sides with plywood, **Laminated Plastic Sheeting 3mm thick or varnish finish paint all in according to the drawings and contract documents** and with hardwood edging glued and pinned to exposed edges.

19. Drawer units shall be made to the sizes and details shown on the drawings.

20. **Benches**

(a) The benches in the laboratory shall be of the sizes and dimensions shown on the drawings.

(b) Benches shall be held in place by approved square-section hard neoprene plugs fixed by bolts to approved expansion sleeves let into the concrete floor. One neoprene plug shall be provided for each bench leg all in according to the contract documents.

21. **Windows**

(a) Windows shall be made to the sizes and details shown on the drawings.

(b) Window frames shall be securely fixed in window openings by galvanized mild steel cramps cut and pinned or built in to the surrounding surfaces and fixed by screws to the window frame. The space between the window frame and the surround shall be grouted solid with cement and sand mortar (1:3).

904. **Sundries**

1. On completion of the Works all locks, latches, bolts, catches, hinges and the like shall be cleaned, oiled and tested to the satisfaction of the Director of Works.

2. All keys shall be clearly labelled with plastic tags (5cm x 2cm) securely fixed to the keys, which shall be handed to the Director of Works.

3. Three keys will be required for all locks unless otherwise specified such as master keys.
Metalwork

1000

Metalwork
1001  General

1. Execute and complete all metalwork shown on the drawings and/or described in the Contract Documents in a proper manner and in accordance with the Specification.

1002  Materials

1. Mild Steel

2. Ironmongery and Hardware
   (a) Ironmongery and hardware shall be the best quality available. Samples of the ironmongery and hardware items shall be sent to the Director of Works for approval.
   (b) Ironmongery and hardware shall be complete with screws of a type, size, material and finish to suit the item of ironmongery or hardware which they are fixing.

1003  Workmanship

1. Metalwork shall be fixed complete with all plates, cleats, bolts, anchors, lugs, hardware and ironmongery.

2. Windows shall be manufacture from rolled mild steel sections welded together. Built-up welded sections shall not be used.

3. Finished surfaces of fabricated items shall be ground to a flat, even surface without pitting, holes or other blemishes.

4. Items of steelwork which are to be galvanized shall be galvanized after fabrication by an approved method in accordance with BS729 Part 1.

5. Items of steelwork which are not to be galvanized shall be cleaned of all dust, scale, other impurities and painted as specified under Series 1900 Painting and Decorating in this Specification.
6. The Contractor shall take precaution to minimize exposure of steel awaiting fabrication to chemical pollution.

7. Fabricated steelwork which is stored awaiting erection on site shall be kept clear of the ground and shall be stacked so as to prevent water or dirt accumulating on or against any of the surfaces.

8. Windows

(a) Metal windows shall be of the dimensions, sizes and profiles shown on the drawings

(b) Windows shall be manufactured from rolled mild steel sections welded together. Built-up welded sections shall not be used.

(c) Windows shall be securely fixed in window openings either by lugs welded to the window frames and cut and pinned or built into the surrounding surfaces or by screwing the window frames with rust-proof screws to approved expansion sleeves let into the surrounding surfaces. Lugs or screws shall be of the number and in the positions shown on the drawings. The space between the window frame and surrounding surface shall be grouted solid with cement and sand mortar (1:6).

(d) Glazing beads shall be of mild steel of the sizes and profiles shown on the drawings and shall be fixed to the window with dome headed, rust, proof, self-tapping screws at not more than 22.5cm centres.

9. Doors

(a) Doors and frames shall be of mild steel sheets, sections and profiles welded together to the dimensions and sizes shown on the drawings.

(b) Frames shall be securely fixed to block walls by means of mild steel cramps 3mm thick, 5cm wide and 20cm girth. The cramps shall be bent into a right angle, one leg welded to the frame and the other leg built into the joint of blockwork. Four cramps per jamb shall be provided. Cramps shall be built in as the blockwork proceeds and not cut and pinned at a later stage.

(c) Frames shall be drilled and bolted to concrete to the approval of the Director of Works.
10. **Gates**
   
   (a) Gates shall be of mild steel sections and profiles welded together to the dimensions and sizes shown on the drawings.
   
   (b) Gates shall be securely hung on brackets as detailed on drawings, built into the supports as work proceeds.

11. **Guard Bars and Screens to Windows**
   
   (a) Guard bars and the framework of the screens to windows shall be of mild steel sections and profiles welded together to the dimensions and sizes shown on the drawings.
   
   (b) Guard bars and screens shall be securely fixed to the surrounding surfaces by lugs welded to the frame in the positions shown on the drawings and cut and pinned or built-in, unless otherwise specified.
   
   (c) Guard bars shall be provided to all external windows of laboratories and multipurpose rooms or where shown on the drawings.
   
   (d) Screens shall be provided to all external windows on the ground floor unless otherwise detailed on the drawings.

12. (a) Balustrades shall be constructed and erected to the details and the dimensions shown on the drawings and shall be of mild steel sections welded together, unless otherwise specified.
   
   (b) Vertical supports shall be at maximum 1.5m centres and shall be fixed in an approved manner to the supporting structure.

13. **Curtains**
   
   (a) Curtain tracks shall be of an approved single-track type with top fixing complete with nylon gliders at 10cm centres and end stops.
   
   (b) Curtain tracks shall be fixed in the positions shown on the drawings with wood screws to timber pelmets.

14. **Expansion Joint Covers**
   
   (a) Approved expansion joint covers of the materials and dimensions shown on the drawings shall be provided to expansion joints in floors of corridors
and verandahs with fixings as detailed on the drawings or approved by the Director of Works.

15. (a) Step rungs, edging to steps, foot scrapers and edging to expansion joints shall be of mild steel to the profiles, dimensions and sizes shown on the drawings.

(b) They shall be securely fixed to the surrounding surfaces by lugs, welded-on in the positions shown and cut and pinned or built-in.

1004 Sundries

1. On completion of the works all locks, latches, bolts, catches, hinges and the like shall be cleaned, oiled and tested to the satisfaction of the Director of Works.

2. All keys shall be clearly labelled with plastic tags (5cm x 2cm) securely fixed to the keys, which shall be handed to the Director of Works.

3. Three keys will be required for all locks unless otherwise specified such as master keys.
1101 General

1. Execute and complete all the plasterwork, in the mixes specified, to the surfaces shown on the drawings.

2. Internal plastering shall be carried out in accordance with BS EN 13914-2:2005.

3. External rendering shall be carried out in accordance with BS EN 13914-1:2005.

1102 Materials

1. (a) Cement and water shall be as specified under Series 500 Concrete Work of this specification.

   (b) Fine aggregate shall be natural sand to the approval of the Director of Works.

2. Lime

   (a) Lime shall be quicklime properly slaked with the minimum amount of water by experienced workmen and shall be left undisturbed for not less than 36 hours.

   (b) The slaked lime shall be screened before use to remove all lumps, stones and other impurities.

1. Metal lathing (such as expanded metal 200mm wide to all chases of electro-mechanical works and to the junctions of blockwork and concrete, stop beads, angle beads, movement beads, etc.), where used, shall have a minimum weight of 1.2 kg/m² and shall comply with BS EN 13658-1:2005 and BS EN 13658-2:2005.

4. All branded materials shall be delivered to the site in original packings bearing the trade names of the material concerned.

1103 Workmanship

1. General

   (a) All plastering work shall be even and true, and shall provide a smooth, hygienic crack-free surface suited to the application of the specified decorative finish.

   (b) Materials used for plastering work shall be proportioned by volume with approved gauge boxes. Mixing shall be carried out in a mechanical batch.
mixer unless otherwise approved and shall be continued for at least two minutes after the water has been added.

(c) Plastering mixes containing self-setting materials shall be used with-in the recommended working time for the mix concerned.

(d) Mixes containing cement shall be used up within two hours of initial contact with water. All materials remaining after this time shall be discarded.

(e) Materials which have started to set should not retemper.

(f) When mixing sand, lime and cement, the lime and sand shall be mixed first and the cement added thereto.

(g) The amount of water in the mix shall not exceed that which is necessary to give a good, workable mix.

(h) Surfaces to be plastered/rendered shall be cleaned of dust, loose mortar and traces of salt. They shall then be dashed with a wet cement and fine aggregate mix (1:2) to form a key, which should then be allowed to harden before plastering proper begins the other two coats.

(i) Immediately prior to the application of plaster or rendering, surfaces shall be thoroughly wetted and excess water allowed running off.

(k) Plaster thickness shall be as specified in the Contract Documents for individual surfaces.

(l) Undercoats to be plastered or rendered shall be well scratched or scored to form a key. Undercoats shall be allowed to set hard before the application of subsequent coats.

(m) All angles, arises, corners and internal angles on plaster and rendering shall be straight and level or plumb and shall be rounded to a 5mm radius. This shall be deemed to include for furnishing and installing of reinforcing expanded metal 200mm wide to all chases of electro-mechanical works and to the junctions of blockwork and concrete. It shall also include for all stop beads, angle beads, movement beads…etc. all as indicated on the contract drawings and the contract documents.

(n) Plaster, rendering and paving shall be made good up to frames and skirtings and around fittings and pipes.

(p) Undercoats and finishing coats to plaster and render shall be protected from the weather until they have set and shall not be allowed to “dry out”
or “seat out” to the detriment of the surface. They shall be cured by being covered with plastic sheets or sacking which is kept stantly damp for at least seven days after being applied.

2. Internal Plaster

(a) Internal plaster shall be applied in two coats. The overall thickness of two coat work internally shall not exceed 15mm.

(b) Internal plaster first coat (rough coat) shall consist of cement and fine aggregate mixed in the proportions:

- 1 part cement
- 4 parts fine aggregate

(c) Internal plaster second coat (final or smooth coat) shall consists of cement, lime and sand mixed in the proportions:

- 1 part cement
- 1 part lime
- 1 part sand

3. External Render

(a) General

(i) External render shall be applied in two coats of overall thickness not exceeding 20mm. Including waterproof material as specified in the contract documents and to the approval of the Director of Works

(ii) External render first coat (rough coat) shall consist of cement, lime and sand mixed in the following proportions:-

- 1 part cement
- 1 part lime
- 5 parts sand

(iii) External render second coat (final or smooth coat) shall consist of Cement, lime and sand mixed in the following proportions:-

- 2 part cement
- 1 part lime
- 4 part sand
(b) **Tyrolean Finish**

(i) External render shall be applied in one coat of overall thickness not exceeding 15mm wood floated to receive tyrolean finish.

(ii) External render shall consist of cement, lime and sand mixed in the proportions:
- 1 part cement
- 1 part lime
- 5 parts sand

(iii) Machine applied wet dash (Tyrolean) finish shall be applied after hardening of the rendered surface. The mix shall consist of cement and fine aggregate (1: 2) including waterproof material. The color of the finish shall be as shown on the Contract Drawings or as directed by the Director of Works.

4. **Cement and Sand Skirtings**

(a) Cement and sand skirting’s shall be provided to all vertical concrete and blockwork surfaces at which finished floor slabs abut, except for the outer kerbs to verandahs. All as specified in the contract documents.

(b) Cement and sand skirting’s shall consist of cement and sand mixed in the proportions:
1 part cement to 3 parts sand.

(c) Skirtings shall be 100mm high and shall be 10mm thicker than the plaster or rendered surface.

(d) Raking skirtings shall be 100mm higher than the lien of the staircase measured at right angles to the nosing.

(e) Skirtings shall be finished with a bulldozed top edge and shall be treated with an approved hardener and dust proofer.

1104. **Sundries**

(a) Clean all floors, skirtings and unpainted wall finishing and leave to the satisfaction of the Director of Works on completion.
1200

Tiling
1201. **General**

1. Execute and complete all the tiling, terrazzo, porcelain, ceramic, glazed and marble work shown on the drawings and/or described in the Contract Documents all in the manner specified and to the satisfaction of the Director of Works.

2. Wall tiling shall be executed in accordance with BS5385 -1:2009, BS5385 -2:2015 and BS5385 -3:2014 (Code of Practice for wall and floor tiling).

3. Samples showing qualities and colors of tiles, terrazzo, porcelain, ceramic, glazed and marble proposed are to be submitted to the Director of Works for testing and approval prior to commencement of the Works.

1202. **Materials**

1. **Glazed Wall Tiles**

   (a) Glazed wall tiles shall be 200mm x 300mm or 250mm x 300mm with 7mm thick, unless otherwise specified in the Contract Documents, approved best quality white glazed ceramic wall tiles not less than 7mm thick in accordance with the requirements of BS EN 14411:2012.

   (b) Angles, edges and junctions with horizontal surfaces shall be made with rounded or purpose made tiles in according to the drawings and contract documents.

2. **Precast Terrazzo Tiles**

   (a) Precast terrazzo tiles shall be approved best quality, manufactured locally in accordance with the requirements of BS EN 13748-1:2004 or BS EN 13748-2:2004.

   (b) Terrazzo finish to tiles shall be not less than 8mm thick and shall be cast integrally with a fine concrete backing.

   (c) Terrazzo floor tiles shall be 300mm X 300mm x 27mm thick unless otherwise specified in the Contract Documents.

   (d) Terrazzo tiles skirting’s shall be 300mm X 70mm X 10mm thick unless otherwise specified in the Contract Documents.
3. Marble where required for bench tops or the like shall be 30mm thick approved local material free from cracks, chipping or other blemishes. Or could be granite type or other type as specified in the contract documents.

4. **Resilient floor coverings**

   (a) Resilient floor coverings shall be of the best quality available and shall be manufactured in accordance with BS EN ISO 10581:2013.

   (b) Resilient floor coverings shall be of size and type as specified in the contract documents and shall be stuck to steel troweled concrete floor surfaces by means of an approved bituminous or other type adhesive.

   (c) Resilient floor coverings include many different manufactured types/products including linoleum, sheet vinyl, vinyl composition tile (VCT), cork (sheet or tile) and rubber.

5. Glazed clay floor tiles (Ceramic tiles) shall be of through-body color of the sizes and thickness’ specified and shall conform to the requirements of BS EN 14411:2012.

6. **Slip resistant flooring-anti-slip flooring**


   (b) Slip resistant flooring shall be of size and type as specified in the contract documents.

   (c) Slip resistant flooring include many different manufactured types/products including non slip rough Porcelain tile, ceramic floor tile, terrazzo, mosaic, granite, unglazed tradition tiles, quarry tile, natural stone, matt finish profiled and other stone or mineral surfaces...etc.

7. Sand, cement, fine aggregate and water shall be as specified under Series 500 Concrete work of this Specification.
1.  **Glazed Wall Tiling – Internal**

   (a) Lay glazed tiles on a cement and fine aggregate backing to a true, vertical face with closed, tight, continuous joints. Joints shall be grouted and pointed in neat white cement; surplus grout shall be cleaned off as the work proceeds. Tiles shall be immersed in water until saturated and all surplus water drained off before bedding.

   (b) Backing for tiles shall consist of cement and fine aggregate mixed in the proportions:

   - 1 part cement
   - 3 parts fine aggregate

   (c) The Contractor shall apply the mortar to the back of the tiles and then press them onto the backing. The finished bed shall not exceed 12mm thickness. All as specified in the contract documents and to the instruction of the Director of Works.

   (d) Tiles shall be fixed in a regular pattern. In areas, the dimensions of which are not a multiple of the size of the tiles, they shall be carefully cut and fixed so that a margin of equal width is formed on opposite sides of the area.

2.  **Glazed Clay Floor Tiles (Ceramic tiles) and Precast Terrazzo Work**

   (a) Floor tiles, treads and sills shall be laid to level or prescribed falls onto 20mm mortar beds consisting of 1 part cement and 3 parts fine aggregate. Base concrete should be clean and well wetted before placing the bedding. Before bedding, the back of the tiles shall be coated with neat cement slurry; the bedding shall support them over their whole area. Tiles shall be laid with straight, continuous joints and shall be grouted and pointed after laying, with mortar of the same mix. Terrazzo floor tiling shall be machine polished to a level, true and even surface after the pointing is completed.

   (b) Tile skirtings shall be bedded, jointed and pointed with mortar as for the floor tiles, but the bedding shall not exceed 10mm thickness. Skirting joints shall line up with the joints in the floor tiles and shall be grouted and pointed after laying. Terrazzo tile skirtings shall be hand polished to produce a true and even surface after the pointing is completed. Tile skirting’s shall be provided to all vertical concrete and blockwork surfaces against which the floor tiling abuts.
(c) Precast terrazzo door sills shall be cast to the profiles and dimensions shown on the drawings. The terrazzo finish shall be continued on all exposed surfaces. All exposed arises shall be continued on all exposed surfaces. All exposed arises shall be slightly rounded. Each sill shall be provided with two 10mm diameter copper drain tubes cast into the sill as shown on the drawings. Precast terrazzo door thresholds shall be provided to all external doors of rooms that have terrazzo floor finish unless otherwise noted on the Contract Documents. Alternatively, Polished cut stone can be used all as specified in the contract documents.

(d) (i) Terrazzo stair slabs are to be precast terrazzo slabs 50mm thick including not less than 10mm thick terrazzo finish cast integrally with the concrete backing. Alternatively, Polished cut stone or granite can be used all as specified in the contract document.

(ii) Pre-formed skirting pieces for stairs shall be not less than 15mm thick and shall be provided at each side of stairs.

(iii) Where terrazzo handrails for staircase balustrades are specified they shall be not less than 20mm thick and shall be cast in sections providing neat joints.

(e) Precast terrazzo worktops shall be 40mm thick and shall be cast with openings for sinks and the like. The terrazzo finish shall be continued on all exposed surfaces and around the edges of openings. All exposed arises shall be slightly rounded. The worktops shall be bedded in cement and sand mortar (1:3) on bearer walls. Alternatively, Polished cut stone, marble and granite can be used all as specified in the contract document.

3. **Resilient floor coverings**

   (a) Resilient floor coverings shall be laid by approved specialist contractors, to provide a continuous, uninterrupted floor finish.

   (b) On completion of the work the entire surface is to be cleaned to the satisfaction of the Director of Works.

   (c) Surfaces to receive resilient floor coverings shall be cleaned of dust and loose mortar. Laying of resilient floor coverings will not be permitted on concrete surfaces which are not thoroughly dried out and free of moisture.

4. **Marble Bench Tops**
(a) Marble or granite bench tops, where required, shall be 30mm thick and shall be bedded in cement/sand mortar (1:3) on block wall supports.

(b) Slabs are to be cut true to shape and shall have openings for sinks and the like where shown in the Contract Documents. All exposed arises shall be rounded and the whole surface must be cleaned and polished before handing over to the Agency.

1204 Sundries

1. All finishes shall be cleaned with soap solution free from any acid or alkali before handing over to the Director of Works.
1301. General

1. Execute all paving work shown on the drawings and/or described in the Contract Documents in accordance with this Specification and to the approval of the Director of Works.

2. Paving work shall include:

   (a) The laying of unsuspended reinforced concrete ground floor slabs, including hardcore or base course.

   (b) The finish of such unsuspended ground floor slabs or of suspended reinforced concrete slabs with fine concrete paving screeds where these are specified in the Contract Documents.

   (c) The laying of precast concrete paving flags.

   (d) Treating all concrete floors with hardener etc.

1302 Materials

1. Hardcore shall be as specified under Series 400 Excavation, Earthworks and Site Work of this Specification.

2. Sand, coarse aggregate, cement and water shall be specified under Series 500 Concrete Work of this Specification.

3. Precast concrete flags shall comply with the requirements of BS EN 1339:2003 and, unless otherwise indicated, shall be 500mm x 500mm x60mm overall size.

2. Steel reinforcement shall be as specified under Series 506.

1303 Workmanship

1. Materials shall be proportional by volume with approved gauge boxes. Mixing shall be carried out in a mechanical batch mixer unless otherwise approved. Mixing shall continue for at least 2 minutes after the water has been added.

2. Concrete mix 300/20 shall be used for unsuspended ground slabs unless otherwise stated and shall be as specified under Series 500 Concrete Work of this Specification.
3. **Concrete Slabs**
   (a) Concrete ground slabs shall be laid on polythene sheet (0.3mm thick) over 15cm compacted thickness granular fill in accordance with Clause 407. Slabs shall be laid in bays not greater than 5m x 5m square cast alternately within frames of planned shuttering unless otherwise stated. Slabs shall be cured for not less than 7 days in accordance with Series 500 Concrete Work of this Specification.

   (b) Unless otherwise specified or directed the surface of unsuspended concrete slabs shall be given a steel trowel finish in accordance with Series 500 Concrete Work of this Specification.

   (c) Where terrazzo floor covering or screed is specified, the surface of slab shall be finished in accordance with Clause 513.1.

4. (a) Provide and lay precast concrete flags to the areas shown in the drawing or where directed by the Director of Works on and including a bed of cement and fine aggregate mortar in the proportion 1:3 by volume

   (b) Grout-up with cement/sand mortar tinted as appropriate to match color of slabs and brush well in.

5. **Cement Screed**
   (a) Lay a screed in sand and cement consisting of 1 part cement and 3 parts sand to concrete surface as shown on the Contract Drawings.

   (b) Screed to freshly lay concrete
   Lay a 20mm minimum thickness screed in bays not exceeding 30m2. This screed shall be laid within 3 hours of casting the slab or else screening shall be considered the screening of mature concrete.

   (c) Screening to mature concrete:
   (i) The surface of the slab shall be thoroughly roughened to expose the coarse aggregate cleaned and watered and then treated with cement slurry immediately prior to screeding.

   (ii) Lay a 40mm minimum screed in bays not exceeding 15m2.

   (d) Screeds shall be finished with a steel trowel to produce a smooth firm even surface free from trowel marks.
(e) All paving shall be truly horizontal and the joints between the bays shall be in straight lines cut accurately and neatly at right angles filled with a felt paper of approved pattern and thickness to the full depth of the concrete.

(f) Screeds are to be cured for not less than 7 days after casting in accordance with Series 500 Concrete Works.

(g) No moisture-sensitive floor finish shall be laid unless an approved moisture test shows that the screed is sufficiently dry to receive it.

1304 Sundries

1. (a) All concrete floors finish shall be treated with a liquid hardener and dust Proofer unless otherwise stated.

(b) The hardener and dust proofer shall be as specified in the contract documents.

(c) The hardener and dust proofer shall be applied strictly to the manufactures instructions.

2. Clean all surfaces to the approval of the Director of Works before handing over to the Agency.

**INTERLOCK BLOCK PAVERS**

1305 GENERAL

The work shall consist of the construction of Interlock Block Pavers in accordance with Specifications, Drawings and the Director of Works.

Precast Interlock Block Pavers shall be formed by homogeneous elements 6 cm (6mm top surface layer + 54mm lower base layer) thickness to be used in sidewalk and 8 cm (6mm top surface layer + 74mm lower base layer) thickness to be used in drive way.

The maximum dimension deviations from the stated work sizes for Interlock Block Pavers as follows:

- Length ± 2mm.
- Width ± 2mm.
- Thickness of top surface layer ± 1 mm.
- Thickness of lower base layer ± 2 mm.

The finished product shall be of solid appearance with clean face, be free of segregation, honeycombing and no evidence of internal rendering.
1306 MATERIAL

Materials shall be conforming to the requirements of BS EN1338:2003 and BS 7533-3:2005+A1:2009 unless otherwise specified. The aggregate used shall be of two different types of natural crushed aggregates conforming to the appropriate British Standard.

The interlock block pavers shall consist of two layers. The first is the surface layer which shall be formed as an integral part of block and will be of black basalt aggregates with thickness of (6mm ± 1mm). If the sample fails to meet this thickness (6mm ± 1mm), interlock pavers shall be rejected. The lower layer will be of common type aggregates used for concrete works with suitable size. Retarding, colour and any admixtures shall not have adverse effect on properties of Interlock Block Pavers.

Interlock Block Pavers shall be made using one or more of binders conforming to the appropriate British Standards. The Contractor shall submit samples of various types of Interlock Block Paver for approval of colour and shape by the Director of Works prior to commencing the Work.

1307 Workmanship and Construction

Interlock Block Pavers shall be set on to locations and grades shown on the Drawings and shall be laid directly on a granular material. Granular material shall be placed on the top of a crushed aggregate base course layer to adjust the final level of the Interlock Block Pavers and to fill the joints between the Blocks.

All Interlock Block Pavers shall be thoroughly cleaned of all extraneous material prior to approval. All Interlock Block Pavers shall be laid within a tolerance of plus or minus three (3) millimetres, at each end of an element, to the lines and grades given on the Drawings. All spaces between Interlock Block Pavers shall be filled with clean sand.

All Interlock Block Pavers shall be compacted by a compactor plate to the satisfaction of the Director of Works. No interlock block pavers are to be paved during heavy rains.

1308 Testing and Acceptance

a) Compressive Strength Test

Test shall be carried out on Interlock Block Pavers to ascertain the strength.

Before laying Interlock Block Pavers, 16 samples shall be collected; each 2 sample shall represent 5000 blocks. All samples shall be stored for (24 ± 4) h in water maintained at temperature of (20 ± 5) C°. The average compressive strength of 16 samples shall be not less than 490 kg/cm² and crushing strength of any individual block shall not be less than 400 kg/cm². If the sample fails to meet strength limit, the interlock pavers shall be rejected.
b) **Abrasion Test**

Test shall be carried out to ascertain surface requirement in according to BS EN 1338:2003 using Bohme abrasion machine according to DIN 52108 with natural abrasion material or artificial Corundum.

The average Abrasion of 16 samples shall not exceed 5 mm and not exceed 6mm for each individual sample after 440 revolution of abrasion machine. If the sample fails to meet the abrasion limit, the interlock pavers shall be rejected.
Drainage

1400

Sewerage
1401. **General**

1. All Sewerage work shall conform to the regulation by-laws or other statutory controls of the area in which carried out.

2. All existing pipes, ducts, cables, manholes, gullies, storm water inlets and other services exposed in the execution of the Sewerage work shall be effectively supported, protected, and, where necessary, made good to the satisfaction of the Director of Works/Local Authority.

3. For connection to existing sewer give notice to the local authority. Take up paving and roadway, open in existing manholes, divert existing flow to facilitate connection works, excavate trenches, connect new system with existing, backfill and make good to the satisfaction of the Director of Works/Local Authority.

4. (a) Sewerage pipes will be generally specified in Unplasticised P.V.C. (U.P.V.C.) where this is not available, acceptable alternative materials are concrete pipes.

   (b) Flexible joints shall mean joints made with deformable rings or gaskets held between pipe spigots and sockets, sleeves or collars.

   (c) Flexible joints shall be obtained from the pipe supplier and shall be used according to the manufacturer’s instructions.

5. Samples of the proposed materials shall be a proved by and deposited with the Director of Works.

6. The excavations shall be kept free from water by pumping, bailing or other approved means.

7. The Contractor shall use shuttering, tight sheeting, skeleton sheeting, stay bracing, trench jacks or a trench shield or box to support the trench during pipes laying.

8. The use of explosives is strictly forbidden without the approval of the Director of Works. See also Series 400 Excavation, Earthworks and Site Work of this Specification.

1402 **Materials/Joints**

1. Pipe bends and junctions are to be in U.P.V.C. complying with BS EN 13598-1:2010. These shall be supplied with flexible joints.

2. Concrete drain pipes shall, unless otherwise described, by cylindrical pipes with spigot and socket ends, all complying with the requirements of BS 5911-1:2002+A2: 2010 and BS 5911-3: 2010+A1: 2014 standard class. These pipes
shall be supplied with flexible joints. If the precast reinforced concrete pipes were requested to be internally lined with polyethylene, a High-Density Polyethylene (HDPE) sheet shall be used with at least 3mm thick with projecting studs back that key into internal pipe surface. Sheets of HDPE shall be butt-welded to form a barrel shape to be monolithically cast with concrete. All polyethylene lining sheets shall be sealed at both ends with butt-welding before installation

If it is required to use a piece of a pipe, mechanical sawing machine should be used such that the piece has the same requirements of a whole pipe. No hammering or chiselling is allowed.

3. Yard gullies shall be cast iron 300mm diameter inside, a minimum depth of 600mm, an outlet of 150mm diameter complete with galvanized perforated bucket, and heavy duty cast iron grating and be jointed to drains all set in bed of concrete mix 200/20. Or as specified in the contract documents and the approval of the Director of Works.

4. Cement, sand and steel reinforcement shall be as described under Series 500 Concrete Work of this Specification.

5. Blockwork shall be as described under Series 600 blockwork of this Specification.

1403 Workmanship

1. (a) Excavations for Sewerage trenches, manholes and the like shall be to straight lines and to the correct depths and gradients required for pipes and beds as specified on the Contract Drawings and sufficient width to ensure adequate working space.

(b) Sides and bottoms of trenches shall be trimmed and squared.

(c) Trenches shall be supported, in the manner selected by the Contractor, to ensure safety and the speedy execution of the work.

(d) In the event of excavations being made deeper than specified, they shall be made up to the correct level with lean mix concrete (1:8) at the Contractor’s expense.

(e) Turf and top soil shall be set to one side for re-use at the discretion of the Director of Works.

2. Grade bottom of trench and fill 150mm below invert level for the full width with sand.

3. Lay pipes on prepared solid bedding in straight lengths with joints facing the direction of flow to true gradient and laid so that each pipe is in contact with the
bed for the whole length of its barrel. The bed shall be cut away at each socket to
give a clearance of at least 50mm so that the socket does not bear on the bed.

4. No drain shall be covered up before it has been tested and approved by the
Director of Works. After all tests have been carried out, fill in with sand up to
150mm above the top of the pipe for the full width of the pipe for flexible pipes
(plastic). For rigid pipes (concrete) the sand filling shall extend to 300mm above
the top of the pipe.

5. Fill in to ground level in layers not exceeding 150mm compacted thickness with
base course or imported granular fill in according to the contract documents and
approval of the Director of Works.

6. (a) Solid and waste drains under buildings shall be carried out in UPVC pipe
bedded in 200/20 concrete to a depth of 150mm under the drain invert.

       (d) After testing fill in and tamp round pipe to the full width of the trench with
       200/20 concrete to a level 150mm over the upper level of the pipework.

       (c) Fill in remainder as described in Clause 1403.5.

7. (a) Connect sanitary fittings and gullies to manholes or vent stacks with soil
and waste pipes of the sizes and in the materials specified.

       (b) Solid and waste pipe shall be of the same diameter as the outlet to the
sanitary fittings or gullies.

8. Dispose of surplus excavated material from the site and reinstate surfacing of
pavings and roadway to the approval of the Director of Works.

9. Provide all necessary planking, strutting, watching, lighting, temporary barriers
etc. as shall be deemed necessary by the Local Authority.

10. Vent the head of the drain where indicated on the drawings with 75mm diameter
vent pipe all as described above and in according to the contract documents.

11. Supply and fix all junctions, bends, reducing pieces, rodding eyes and sleeves as
are shown on the drawings or are considered necessary by the Director of Works
for the execution of the Work.

12. Pipe Sleeves

       (a) Wherever pipes pass through blockwork or concrete they shall be provided
with sleeves of the same material as the pipe.
The internal diameter of the sleeve shall be at least 1cm more than the external diameter of the pipe and the length of the sleeve shall be the same as the thickness of the blockwork or concrete plus surface finishes through which the pipe passes.

The space between the pipe and the sleeve shall be packed with rock wool or an approved non-hardening compound.

1404. **Connection to Sewer**

1. Provide and fix saddle piece and lay drain in the diameters and materials specified to the falls indicated on the drawings all on a granular bed as previously described in Clause 1401.3 above.

1405 **Manholes**

1. Excavate, return, fill and ram; dispose of surplus material; prepare bottoms and support sides for construction of manholes all as described in Clause 1403 of this Specification.

2. From the base slab to manhole with concrete mix reinforced concrete 250/20 200mm thick, the slab to finish flush with the external face of the manhole wall.

3. Build the walls of the chamber in reinforce concrete 250/20 200mm thick and 200mm thick reinforced concrete 250/20 manhole cover slab and in according to the contract documents.

Provide and lay in the bottoms of manholes, unless otherwise specified, half-round U.P.V.C. main invert channels of the same diameter as the drains with all necessary curves and tapers.

4. Provide and lay half-round U.P.V.C. branch channel bend curved in the direction of flow and set to discharge over main channel.

5. Bench up the channels with concrete mix 200/20 rising vertically from the edge of the channel to a height not less than the soffit of the out-going drain and sloping upwards to meet the side of the chamber at a gradient of approx. 1 in 6. Float the benching to a smooth, hard surface with a coat of cement mortar 1:1. All cement used for benching shall be Sulphate Resisting Type.

6. Build in the ends of drain pipes.

7. Manhole covers and frames shall be either:
(a) Heavy Duty Cast iron or cast steel in accordance with BS EN 124-1: 2015 and BS and EN 124-2: 2015. The frames shall be set in 1:3 cement, sand mortar, or

(b) Precast reinforced concrete mix 250/20 all in accordance with Series 500 Concrete Work of this Specification, as shown on the Contract Drawings.

8. Manhole sizes shall be in accordance with contract drawings and contract documents.

9. Manholes shall be watertight on completion. Alternatively, readymade circular manhole can be used all as specified in the contract documents.

1406. Drawing(s)

1. (a) Where shop drawings are required, this will be stated in the invitation to tender.

   (b) Shop drawings shall be submitted when required to the Director of Works before the commencement of the Sewerage work.

   (c) On completion of the Works the Contractor shall provide the Director of Works with “as-built” drawings showing the exact location and sizes of all pipes, branches, manholes and the like to the approval of the Director of Works.

1407. Testing

1. The Contractor shall carry out all tests necessary to ensure the satisfactory functioning of the Sewerage system. Any section not passing any of the test shall have the defects made good and shall be retested.

2. All foul sewers, drains and surface water drains shall be tested as directed by the Director of Works, in sections, e.g. between manholes, before the pipes are covered, by means of either the air test described below or by the water test described below. Before testing, the ends of the pipeline to be tested, including those of short branches, shall be plugged and sealed to the satisfaction of the Director of Works. Any section not passing any of the tests shall have the defects made good and shall be retested, using either of the alternative tests given below as directed by the Director of Works.

3. For the air test, air shall be pumped in by suitable means until a pressure of 100mm head of water is indicated in a U-tube connected to the system. The air pressure shall not fall to less than 75mm head of water during a period of 5 minutes without further pumping, after an initial period to allow stabilization.
Drains with traps shall be tested to 50mm head of water and the permissible loss shall then be no more than 13mm head of water in 5 minutes after the initial stabilizing period.

4. For the water test, the pipes shall be filled with water under a head of not less than 1.2m above the crown of the pipe at the high end and not more than 2.4m above the pipe at the low end. Steeply graded pipelines shall be tested in sections so that the above maximum shall not be exceeded. Unless otherwise agreed by the Director of Works, the test shall commence one hour after filling the test section at which time the level to water at the vertical feed pipe shall be made up to produce the required 1.2m minimum test head. The loss of water over a 30 minute period shall be measured by adding water at regular 10 minute intervals to maintain the original water level and recording the amounts so added. The drain will have passed the test if the volume of water added does not exceed 0.12 liters per hour per 100 linear meters of drain per mm of nominal internal diameter.

5. All drains and service ducts less than 350mm diameter shall be checked by drawing through each completed length of pipe a smooth ball 12mm less than the pipe diameter unless an alternative method of checking is agreed by the Director of Works.

6. On completion of the works, or earlier if the Director of Works agrees, all manholes and drains shall be flushed from end to end with water and left clean and free from obstructions.

7. Manholes shall be tested for water tightness on completion by filling them with water and observing any subsidence in water level.

1408 Sundries

1. The Contractor shall take all precautions to prevent the entry into the drains or sewers of builders’ debris, cement slurry and plaster washings.

1409 Certificates

1. Copies of all certificates of acceptance of drains or drain connections issued by the Local Authority shall be given to the Director of Works prior to the handing over of the Works.
1500

Asphalting
1501. **General**

1. Lay asphalt as hereinafter described on prepared surfaces indicated on the drawings, to the prescribed falls.

1502. **Materials**

1. Asphalt for paving or playground asphalt base course (dense bitumen macadam course) and wearing course shall be in one coat work of Fine Hot Asphalt with the aggregate, laid to produce a smooth surface all in accordance with BS EN 13108-1:2006, BS EN 13108-7:2006 and BS EN 12591:2009.

2. Asphalt for roofing purposes shall be bitumen polymer membrane with chipping in accordance with ASTM D6222 and ASTM D6223.


5. Sand, cement and water shall be as described in Series 500 Concrete Work.

1503. **Workmanship**

1. **Paving and playground areas**

    (a) Excavate for, provide and lay on edge 300mm high x 150mm wide precast concrete edging (curbstone), top to be level with finished level of playing area/paved area, on 150mm bed concrete class 200/20 hunched up at outside edge to within 75mm of top. Bed joint and point in cement, sand mortar 1:3 backfill and make good surrounding levels.

    (b) Provide and lay 150mm compacted hardcore, crushed aggregate or base coarse as specified in the Contract Documents, using the required rollers to the approval of the Director of Works, Degree of compaction shall not be less than 96% of the maximum density

    (c) Provide and lay asphalt paving in one coat work (layer) of 70mm compacted overall thickness, using hot asphalt mix 3/8” maximum aggregate and asphalt bitumen (80/100) heated to the temperature specified by the manufacturer, asphalt at rate of 55kg/ton. Include of one prime coat of liquid (MCO) at the rate of 2 kg/m2, ramming, leveling and compacting the hot asphalt mix using the required rollers to the approval
of the Director of Works with a minimum compaction of 98% of the control strip density, laid to falls and cross-falls. All in accordance to the detail drawings, the contract documents and to the Director of Works approval.

2. **Roofing**

   (a) Provide and lay one layer bitumen polymer membrane with chipping (Mineral slate granules layer) 5mm thick Minimum and 5 kg/m² minimum weight per square metre, including priming "GS/474" 500(gr/m²), dressing into rainwater outlets to form waterproof seal as specified in the contract documents and the approval of the Director of Works.

   (b) Rake out joints in vertical walls to receive joint filler components. From chase, 25mm x 25mm with splayed bottom edge, to receive the top edge of the upstand.

   (c) At all junctions of roof coverings with parapet walls stacks etc., provide one layer bitumen polymer membrane with chipping skirting as specified in the contract documents and the approval of the Director of Works.

   (d) Execute all required angles, fair ends etc., and from a proper fillet at all internal angles.

   (e) Finish at open edges of flat roofs with a mastic asphalt apron taken 150mm down the fascia or as specified in the contract documents and the approval of the Director of Works.

   (f) Properly dresses all pipes and outlets on the roof with a special rubber sealant including caps. All shall be in according to the detail drawings, the contract documents and to the Director of Works approval.

1504 **Sundries**

1. Storage of materials on finished asphalt work is strictly forbidden.
Roofing

1600

Roofing
1601. General

1. Cover the whole of the roofs indicated on the drawings with the tiles/sheeting hereinafter described to the prescribed pitches all according to specification and to the satisfaction of the Director of Works.

1602. Materials

1. **Roof tiles**
   
   (a) Where roof tiles are specified they shall be concrete tiles from the best quality in the local market conforming to BS EN 1304:2013, BS EN 490:2011 and BS EN 491:2011.

   (b) Ridge pieces or other special tiles for eaves verges or the like shall be of the same material and quality as above and shall be from the same supplier or as specified in the contract documents.

2. Timber for battens shall be sawn softwood pressure impregnated with creosote in accordance with BS 144:1997 unless otherwise specified or directed.

3. Nails for tiling or securing battens shall be of copper, aluminum alloy, zinc or galvanized wire to BS 5534:2014+A1:2015. Nails subject to corrosion will not be permitted.

4. Sarking felt where specified shall be aluminum foil-faced reinforced copolymer felt complying with the requirements of BS EN13707: 2013 laid parallel to the ridge with 150mm side laps

5. Mortar for bedding plain tiling shall be cement: fine aggregate mix 1: 3 mix of proportions by volume and pointing plain tiling shall be cement: sand 1: 2 mix of proportions by volume.

6. Profiled galvanized steel sheeting shall comply with the requirements of BS 3083:1988.

7. Fixing for profiled sheeting shall be in accordance with BS EN ISO 1479: 2011.
1603 Workmanship

1. Tiling

(a) Supply and fix roofing tiles to the roof surfaces indicated on the drawings. Each tile in every 3rd course and the 2 end tiles in every course adjacent to verges, valleys, abutments and hips shall be twice nailed to softwood battens 50mm x 25mm overall. The dimensions from center to center of battens shall be length of tile – lap. The lap shall be not less than 70mm assuming a pitch of not less than 400 and shall not exceed one-third of the length of the tiles.

(b) Eaves shall have a proper under tile course size 165mm x 165mm minimum overall each tile twice nailed to battens. Both eaves courses are to overhang by 50mm unless otherwise specified.

(c) Verge tiling shall be tilted to prevent dripping. Form under cloak with plain tiles bedded in mortar onto gable wall. Verge tiles to be similarly bedded on under cloak and the whole pointed in cement, lime and sand mortar cut back 6mm. Bedding shall be carried out in “tile-and-a-half” tiles and no cut tiles will be allowed.

(d) The top course of tiles at ridges shall maintain the gauge without cutting. Ridge-tiles shall be carefully bedded on to the top course and fully bedded at joints and pointed in mortar as described above with a neat, flush joint. Open ends at gables to be filled with pieces of cut tile bedded and pointed in mortar as above.

(e) At abutments carry out all necessary cutting and fitting and fix only soakers supplied by others. No tiles shall be cut so that it is reduced in width at any part to less than its full length. “Tile-and-half” tiles shall be used where possible at abutments to retain bonding.

2. Sheeting

(a) Supply and fix corrugated roofing sheets to purlins, all to the pitches shown in the drawings.

(b) Laps shall be in accordance with the suppliers’ recommendations.

(c) Holes for hook bolts at other fixings shall be pre-drilled at the highest point of the corrugations/profiles, at every third corrugation/profile unless otherwise recommended by the manufacturer.
(d) Seam fixings for side laps are required at 400mm centers on galvanized steel sheeting.

(e) All fixings which penetrate the sheeting shall be made watertight by means of washers, all to the manufacturer’s recommendation.

(f) Supply and fix ridge-piece, end-closers, eaves-closers and all accessories necessary for the execution of the Work.

1604 **Sundries**

1. Storage of materials on the finished roofing is strictly forbidden.
1701  General

1. Execute all plumbing work shown on the drawings and/or described in the Contract Documents all in accordance with this Specification and to the satisfaction of the Director of Works.

2. The plumbing work shall include all internal sewerage pipes and fittings, rainwater disposal, water supply distribution system and sanitary appliance with all necessary plumbing fittings.

3. Soil and waste disposal shall be effectual by means of a “one pipe” system unless otherwise specified. Traps shall have a water seal of 50mm for W.C.’s and piping above 50mm diameter and 75mm for pipes below 50mm diameter. All branches shall be ventilated into a ventilating stack.

1702  Materials

1. (a) Rainwater pipes and gutters shall, unless otherwise stated, be in U.P.V.C., complying with BS EN 12200-1:2000, BS EN 607:2004 and BS EN 1462:2004. Downpipes shall have push-fit joints and all branches, offsets, heads, shoes, etc. shall be in the same material and by the same manufacturer.

(b) Balcony and roof outlets shall be of approved type, fitted with circular heavy duty gratings. The diameter of the gratings shall be twice the diameter of the pipe. Each grating shall be secured to the outlet with two countersunk non-corrosive screws.

2. (a) Soil waste and vent pipes including fittings and accessories shall generally be in U.P.V.C. in accordance with BS 4514:2001 and BS EN 1329-1:2014.

(b) Acceptable alternative material for (a) above are:
Galvanized Steel to BS EN 10255:2004 and BS EN 10241:2000

3. (a) Water supply/distribution pipes shall generally be in seamless steel tubing galvanized internally and externally with screwed and socketed joints, all in accordance with BS EN 10241:2000 and BS EN 10255:2004.

5:2011 may be used for cold water services.

(b) Galvanized steel pipes and galvanized malleable iron fittings shall be put together with screwed joints. All threading shall be executed with sharp dies. Pipe ends shall be reamed out to a slightly larger diameter before assembly. Joints shall be put together with and approved jointing compound; oakum, string or other fiber shall not be used in joints. All joints, junctions, bends in the water supply and distribution pipework shall be made up welded assemblies shall not be allowed.

(c) Galvanized steel pipes and fittings shall be fixed at least 20mm clear of the face of walls and soffits by means of approved, two-piece holder bats at not more than 1500mm centers. Saddle-type pipe clips shall not be used.

4. Water storage tanks shall be of glass fiber reinforced polythene or polypropylene of approved manufacture, in accordance with BS 4213:2004 and BS EN 13280:2001. Water storage tanks shall be of 1.00m3, 1.5m3 or 2 m3 capacity and shall be supplied complete with polythene ball valves, overflows, covers, under tray, all inlets and outlets connections, and distribution pipe including all required fittings and accessories to put water storage tanks in service.

Alternative materials acceptable for water storage tanks are: Galvanized Mild Steel to BS 417-2:1987.

5. (a) Sanitary appliances shall be in glazed white fireclay or as specified in the contract documents or other equal approved by the Director of Works.

(b) High level W.C. suite shall be pedestal type wash down pan as specified in the contract documents or other equal approved by the Director of Works. and shall include plastic flushing cistern with brackets, flushing mechanism, and ball valve and pull chain. W.C.suite shall be delivered complete with plastic seat and cover by same specified type.

(c) Squat type W.C. pans shall be as specified in the contract documents or other equal approved by the Director of Works. complete with plastic flushing cistern, wall brackets, flushing mechanism, ball valve and pull chain by same specified typ.

(d) Lavatory Basins shall be white glazed fireclay size not less than 555mm X 410mm overall, complete with waste fitting, siphon, trap, plug and chain, chromium plated gear water mixer, 1/2" pillar tap, all associated water
supply pipework, waste to slab level, and including brackets screwed to concrete or blockwork, sealing joint to worktop or wall with mastic sealant. All in accordance to the contract documents and the Director of Works instructions.

(e) White glazed fireclay sinks shall be not less than 610mm x 405mm x 255mm as specified in the contract documents or other equal approved by the Director Of Works, complete with waste fitting, siphon, trap, plug and chain, chromium plated gear water mixer, 1/2" pillar tap, all associated water supply pipework, waste to slab level, on and including brackets screwed to concrete or blockwork, sealing joint to worktop or wall with mastic sealant.

(f) Polypropylene sinks shall be not less than 540mm x 380mm x 210mm, and shall include brackets, waste fitting, trap and standing waste overflow by the same manufacturer. or as specified in the contract document or other equal approved by the Director of Works.

(g) Wall hung urinal bowls shall be in white glazed fireclay as specified in the contract documents or other equal approved by the Director of Works, complete with grating, waste fitting, trap and automatic flushing valve, all by same specified type.

(h) Automatic flushing tanks shall include flush pipe and automatic syphon set to discharge every 10 minutes or as specified in the contract documents.

(j) (i) Urinal traps and trapped gullies shall be approved U.P.V.C. with back or side inlets as required and 100mm diameter outlet. Where necessary, the gullies shall be provided with approved raising-piece complete with chromium plated brass grating fixed securely with 2 countersunk screws.

(ii) Gullies and raising-pieces shall be bedded on 100/20 concrete 150mm thick.

(k) Bib taps in latrine areas and at water points shall be brass with easy-clean shields or as specified in the contract documents.

(l) Stop valves shall be solid brass with wheel head or as specified in the contract documents.

(m) Mirrors, where specified, shall be approved high quality size 60cm x 60cm chamfered all edges, fixed with 4 number chromium plated dome headed screws and rubber washers to concrete or blockwork.
1703 Workmanship

1. Rainwater pipes and gutters

(a) Supply and fix U.P.V.C. rainwater downpipes shown on the Contract Drawings to concrete columns/blockwork by means of pipe brackets (screwed-to-wall) at not greater than 2.00m centers with rustproof screws with additional brackets at her, connectors, branches and head.

(b) Supply and fix heads, branches connectors and shoes as shown in the Contract Documents.

(c) Connect all roof and balcony outlets to main downpipe.

(d) Supply and fix U.P.V.C. eaves gutters in the positions shown on the drawings. Gutters to be complete with all necessary angles, stop ends, stop end outlets and running outlets as shown on the drawings or as directed by the Director of Works. Gutters to be secured by means of support brackets secured to facial/rafter spaced at not more than 1.00m centers. Additional brackets shall be fixed on each side of running outlets, stop ends and outlets, and at angles. Only rust-proof screws shall be used for fixing gutters.

2. Soil pipes

(a) Supply and fix all internal soil waste and ventilating pipe work as shown on the drawings and connect to manhole, all in U.P.V.C. pipe unless otherwise specified or approved.

(b) Supply and fix all bends, junctions, reducing pieces, inspection eyes, sleeves etc. as are shown on the drawings or as instructed by the Director of Works.

(c) Vertical stacks to be firmly secured to blockwork/concrete by means of pipe brackets at not more than 2.00m centers.

(d) The soil pipe above the highest branch is to be continued upwards to such a height and in such a position as to afford a safe outlet for foul air and shall be covered with wire dome at the outlet.
(e) Traps on branch soil and waste pipes to be ventilated at a point not less than 75mm or not more than 30mm from the highest point and on the nearest side to the soil and waste pipe. The vent pipe may be in U.P.V.C. unless otherwise specified or approved with all needed joints, of diameter not less than 32mm for single lavatory or sink waste and not less than 50mm for W.C. and urinal traps. The size of vent pipe serving a number of fittings shall be 50mm. Connect the branch vent pipes to the main ventilation stacks(s) as shown on the drawings or approved by the Director of Works, finish as for soil pipe.

(f) Connect sanitary appliances to main soil pipe; all appliances/fittings to be trapped, with the exception of waste outlets, discharging into gullies “over air”. Waste pipes shall be of the same diameter as the outlet from appliance/fitting.

3. **Supply pipework**

(a) Excavate for supply pipe not less than 45cm below the surface, back-fill over supply pipe after testing in accordance with Clause 1403, 4 and 5 using 150mm granular fill above the pipe.

(b) Take possession of and install at site boundary, water meter supplied by water authorities in meter chamber constructed to the sizes specified and in the manner described for manholes in Series 1400 Drain layer. Provide and install stop valves at point of entry to the site before the Company meter.

(c) Lay main supply pipe on 150mm bed of sand in the material and of the size shown on the drawings from main company supply to point of entry to the building/to rising mains to storage tank, provide stop valve to rising main to tank.

(d) Provide and fix rising main to storage tanks and connect thereto. Provide and install stop valve adjacent to the connection to the tanks.

(e) From the rising main, run services as specified to drinking water points and cold water storage tanks shown on the drawings and connect to outlets with union fittings. Provide stop valves on each branch immediately adjacent to the mains supply connection and adjacent to the water points and cold water storage tanks.

(f) Provide and fix on approved bearers, water storage tank as previously specified in the position shown on the drawings complete with ball valve, cover, overflow (larger than supply pipe) to be carried through/over wall and to discharge in the open. Bearers shall run the full width of the tank.
(g) Stop valves below ground level shall be placed in approved underground valve boxes with lockable covers.

4. Distribution

(a) Provide and fix distribution pipework from storage tanks to sanitary fittings and draw-off points including installing all necessary bends, tees and other fittings, and the connection to tanks and fittings. Pipework shall follow the line of walls vertically and horizontally and shall be graded as necessary for draining and venting. Provide draw-off valves at low points. Pipework carried through floors, walls, beams or other structural elements shall be sleeved.

(b) Provide a stop valve on each distribution pipe outlet from the cold water storage tanks.

(c) Provide a stop valve on distribution pipes adjacent to each sanitary fitting or bib valve or to each range of sanitary fittings or bib valves as indicated on the drawings.

(d) All internal pipework shall be surface-mounted unless otherwise specified or directed.

5. Fittings

(a) Provide and install sinks, lavatory basins, gullies and all other sanitary fittings in the positions shown on the drawings.

(b) Provide and fix bib or pillar taps to sinks, lavatory basins and drinking points as indicated on the drawings.

6. Testing

(a) The Contractor shall be responsible for testing to insure the efficient functioning of the water supply and distribution system, internal sewerage, and rainwater disposal system to the approval of the Director of Works.

(b) Water supply and distribution pipework shall be watertight under the full operating head, any joints/connections which leak shall be remade to the approval of the Director of Works.

7. Shop Drawings

(a) Before the commencement of any plumbing and sewerage work the Contractor shall submit one soft copy and two hard copies of drawings,
detailing his proposals for the layout of the plumbing and sewerage installations, to the Director of Works for approval.

(b) The drawings shall show the proposed location and diameter of every pipe run and the proposed location of all valves, manholes and the like.

(c) On completion of the Works the Contractor shall provide the Director of Works with a set of “as-built” drawings one soft copy and two hard copies detailing the exact location and size of all pipes, branches, tees, valves, manholes and the like.

8. Samples of all materials, appliances and fittings shall be approved by and deposited with the Director of Works. Such samples will be returned to the Contractor for installing in the Works.
Glazing

1800

Glazing
1801 General

1. Prepare beds and surfaces for glazing and install glass of the type, thickness and quality specified in fixed and opening lights as shown on the drawings all in accordance with this Specification and to the satisfaction of the Director of Works.

1802 Materials

1. All glass shall be in accordance with BS 952-1:1995 and BS 952-2: 1980 and shall be free from all blemishes. Glass shall be delivered in proper containers with maker’s name, guarantee, type of glass and thickness or weight of glass attached to the outside of the containers.

2. Sheet glass shall be 6mm thick ordinary quality glazing, unless stated otherwise.

3. Obscured glass shall be plain rough cast glass with one side textured, 6mm thick.

4. Wired glass shall be rough cast wired glass 6mm thick, polished Georgian wired having both surfaces ground and polished and with square mesh inserted during rolling.

5. Transparent silicone for glazing to timber frames of approved manufacture.

6. Transparent silicone for glazing to steel frames of approved manufacture.

7. Other type of safety glass could be used such as:

   (a) Tempered glass is used to create entrance doors and other components in commercial buildings. It’s also used in vehicles as door, vent and back glass. During the manufacturing process, tempered glass is heated to over 1,100 degrees. It’s then shot with cold air, which forces the glass to cool very rapidly. That process causes the outer surface to become much harder than the inner material. As a result, tempered glass shatters into tiny fragments with rounded edges when it’s broken.

   (b) Laminated glass is used primarily for vehicle windshields. Two sheets of glass are bonded together by a plastic inner layer known as poly vinyl butyral (PVB). The inner layer softens the blow when anything hits the windshield and prevents the glass from separating. That, in turn, reduces the chances that you and your passengers will be seriously cut in the event of an accident.
**Workmanship**

1. Clean timber rebates, prime and paint with one undercoat prior to applying silicone to frames.

2. (a) Out glass to sizes (leaving suitable clearance) set in silicone bed in frames, sprigging for timber frames and wedging for metal frames and neatly silicone. Silicone shall not appear over sight liens.

(b) Alternatively set glass in silicone beds/wash leather and secure with glazing beads (by others) of the sizes and profiles shown on the drawings. Metal beads shall be secured with dome headed rustproof self-tapping screws at not more than 22.5cm centers. Timber beads shall be secured with brass caps and screws at not more than 22.5cm centers.

(c) (i) Glaze all external windows except the W.C. or where otherwise specified with sheet glass as specified above.

(ii) Glaze internal clearstory lights, W.C. windows, fixed light panels and where otherwise specified in the Contract Documents with obscured glass.

**Sundries**

1. Clean the glass inside and outside on completion and replace all cracked and broken glass.

2. Samples of alternative glazing materials shall be submitted to and require the written approval of the Director of Works.
Painting and Decorating

1900

Painting and Decorating
1901 General

1. All metal fittings and fastenings are to be removed before the preparatory finishing processes are commenced, cleaned and refaxed in position on completion.

2. All mild steel fittings, fastenings, screens, grills etc. shall be painted in accordance with Clause 1903.2.

3. Floors, fixtures and surfaces not to be painted shall be adequately protected.

4. (a) A painting schedule will be provided prior to the execution of the work, specifying color and surfaces to be coated. Successive coats of paints shall be different shades to facilitate identification.

   (b) Provision must be made for the execution of patterns or trial areas on the site if requested by the Director of Works.

5. (a) All materials shall be applied strictly in accordance with the manufacturer’s instructions. Any addition of thinner must be made under the supervision of the Director of Works and only as allowed by the manufacturer’s instructions.

   (b) All paints shall be brought to the site in the manufacturer’s sealed containers; each container shall be labelled by the manufacturer with labels stating:

      (i) The manufacturer’s name, date of manufacture
      (ii) The type of paints
      (iii) The color
      (iv) Instructions for thinning and mixing.
      (v) Instructions for applying and warnings.

   (c) Paints shall be stored in sealed containers and shall not be subject to extremes of temperature.

   (d) Paints shall be used within their stated ‘shelf life’ or within 18 months of manufacture whichever period is lesser.

6. Paints shall not be applied in a relative humidity of 80% or over or externally in wet weather or damp conditions.
7. Surfaces for painting must be dry and free from dust, dirt, efflorescence or condensation.

8. Execute and complete all the painting and decorating work shown on the drawings/schedules all in accordance with this Specification and to the satisfaction of the Director of Works.

1902  Materials

1. Knotting shall be a solution of approved shellac or other resins in alcohol.

2. Stoppers shall be emulsion polymer based of approved manufacture.


4. (a) Wood primer shall be a low-lead content primer to BS 7956:2000 of approved manufacture.

   (e) Metal primer, for application to steel surfaces, shall be a zinc chromate red oxide based primer of approved manufacture.

   (f) Primer for application to galvanized surfaces shall be a calcium plumb ate metal primer of approved manufacture to BS 3698:1964-01-15.

   (g) Plaster and concrete primers shall be an alkali resistant primer of approved manufacture.

5. Oil paint shall be alkyd-based paints in gloss matt or eggshell as specified, all of approved manufacture. Undercoats shall be from the same manufacture and shall be compatible with the finishing paint.

6. Emulsion paint shall be synthetic polymer dispersions in water of approved manufacture.

7. Lime wash shall be composed of slaked lime and alum with coloring pigments added as required all of best quality and to the satisfaction of the Director of Works.

8. Vanish shall be best quality synthetic resin based varnish of approved manufacture.

9. Bituminous paint shall be from natural asphalt dissolved in white sprit. It shall be of approved manufacture. Tar paint shall be hot applied tar complying with.
1903  **Workmanship**

1. **General**

   (a) Primed or undercoated timber or metal shall not be left in an exposed or unsuitable situation for an undue period before completing the painting.

   (b) Brushes, pails, kettles and the like used in carrying out the work shall be kept clean and free from foreign matter. They shall be cleaned before being used for different types or classes of materials.

   (c) Priming and undercoats shall be lightly rubbed down with fine sand-paper before subsequent coats are applied.

2. **Paint on Metalwork**

   (a) All steel surfaces to be painted shall be cleaned from rust, scale, loose paint, oil, dirt and all deleterious matter before priming. The cleaning shall be carried out to the approval of the Director of Works using power driven tools followed by steel wire brushing and dusting, wherever possible.

   (b) Prepared steel surfaces shall be primed with an approved primer. Priming of steelwork shall take place as soon as possible after preparation of surface. Provide a second coat of primer if undercoating cannot be carried out immediately afterwards.

   (c) Galvanized surfaces shall be treated with mordant washes prior to priming with approved primer.

   (d) Apply one undercoat oil paint, as specified, to the primed steelwork. Putty shall be painted at the same time wherever possible. All edges, angles, projections to have a stripe undercoat applied as soon as the first coat is dry.

   (e) Apply two finishing coats of oil paint as specified to the under coated steelwork.

   (f) The minimum dry film thickness of the paint coating shall be 200 microns.

3. **Paint on Woodwork**
(a) All cracks, defects and holes in the woodwork shall be scraped out, primed, made good with hard stopping, leveled and rubbed down to an even surface.

(b) Larger knots in woodwork shall be removed and replaced with sound wood and/or made good with approved filler. Small knots shall be treated with two coats knotting as specified above.

(c) All woodwork shall receive one coat of approved primer prior to incorporation in the works.

(d) All exposed woodwork shall be painted with 1 undercoat and 2 finishing coats oil paint, as specified.

4. **Paint on Plasterwork or Concrete Surfaces**

   (a) Prepare surfaces to be painted; large cracks shall be cut out with undercut edges and made good with cement mortar or equal and approved. Small cracks shall be made good with hard stopping and rubbed down level with the main face. Concrete surfaces to be painted shall be prepared with approved filler and rubbed down to a smooth, even surface.

   (b) Prime plaster surface with approved primer.

   (c) Apply two coats lime wash, as specified, to ceilings internally unless otherwise stated on the Contract Drawings.

   (d) Apply two coats emulsion paint, as specified, to walls and soffits internally, where indicated on the Contract Drawings.

   (e) Apply one undercoat and two finishing coats of oil paint, as specified, to plastered wall surfaces including surface preparation and putty as indicated in the Contract Drawings.

5. **Painting with Tar or Bitumen**

   (a) Apply two coats tar or bituminous paint to plastered/concrete surfaces below ground/fill level as indicated on the drawings. Or One layer membrane without chipping (Mineral slate granules layer) 5mm thick, including priming ""GS/474" 500 (gr/m2) all in according to the contract documents.
(b) Prior to the application of the tar or bituminous paint the surfaces to which it is to be applied shall be clean and dry. The first coat shall be allowed to dry before the second coat is applied.

1904 Sundries

1. Samples of all materials used for painting and decorating work shall be approved by and deposited with the Director of Works.

2. On completion of the works all painted surfaces shall be kept clean and free from dirt and dust.
2000

Electrical
Installation
2001 General

1. The work shall be carried out to the satisfaction of and in accordance with the rules, regulations and requirements of the supply authority.

2. Execute and complete the electrical installation shown on the drawings and/or described in the Contract Documents.

3. Shop Drawings
   (a) Before the commencement of the Works the Contractor shall submit one soft copy and two hard copies of drawings, detailing his proposals for the electrical installation, to the Director of Works.

   (b) The drawings shall show the proposed location and sizes of all conduit runs, junction boxes, outlet boxes, connections, switches, sockets, cables, electrical boards, fittings, accessories and the like together with wiring diagrams.

2002 Materials

1. Cables and Cabling

   (a) Power cabling from the source of supply to the distribution board and from the main distribution board to secondary distribution boards shall be of the underground type; such cables shall be of an approved four core P.V.C. (Polyvinyl Chloride) insulated and sheeted steel wire armored and PVC sheathed, and shall be in accordance with IEC 60502-1:2004+A1:2009 CSV Consolidated version standards-rated for not less than 1000 volts to ensure that voltage drop from the main to the distribution board does not exceed a 0.55 of the full rated load. The conductors shall be high-conductivity standard annealed copper or aluminum. These cables shall be used to connect between the source of supply and the various buildings and between one building and another. Routes as shown on the layout drawings shall be used.

   (b) Where cables cross roads subject to heavy traffic, they shall be run in steel pipe. Where cables cross in, or under, concrete slabs, they shall be pulled in a 100mm diameter rigid PVC pipe embedded in concrete.

   (c) Cables shall be laid in general at a depth of not less than 50cm below the ground surface on 150mm of clean dry sand. After laying the cable, 10mm of clean sand shall be poured over the cable as cover. Concrete tiles shall then be laid over the sand cover including warning strip before backfilling the trench.
(d) Where two or more cables are laid in the same trench, a minimum of 150mm shall be left between them and they shall be laid in the same horizontal plane. Where crossing is necessary cables shall be clear of each other by at least 150mm.

2. **Grounding**

(a) A grounding bus shall be established at the source of supply in accordance to the local electrical authority’s requirements and regulations and the armor of each cable shall be grounded at both ends. Additional grounding rods shall be used as instructed by the Director of Works. Grounding rods shall be consists of three driven copper rods, 250cm long and 12mm diameter, the distance between each rod and the other have to be at least 7 meters with a checking man hall at least 60cm depth, and the ground resistance shall not exceed 5 Ohms.

(b) Unless otherwise specified, all grounding wires shall be stranded cooper bare conductors without joints between the terminals. They shall be adequately protected from mechanical injury and shall be well secured at both ends with proper and approved ground clamps.

(c) Facility shall be provided for the adequate earthling of each fitting.

(d) All non-live metal parts shall be grounded. All equipment and system grounding shall be accomplished with separate conductors to the grounds bus.

(e) The grounding connections of the distribution boards shall be carried out with AWG no.2 (American Wire Gauge) (35mm²) wires. Special care shall be taken to ensure ground continuity through the conduit system.

(f) All grounded three-pin outlets shall have the ground terminal connected to the metal straps which are in contract with the box.
3. **Conduit and Fittings**

(a) All cables and wires shall be carried in approved continuous, rigid PVC conduit conforming to BS 4607-1:1984+A2:2010 and BS 4607-5: 1982+ A3: 2010, medium impact, unless otherwise stated. The installation shall be a screwed or adhesive fixed assembly embedded in the concrete slabs, beams or columns or run in chases out into the wall surfaces and covered with plaster unless surface fixing is specified. Adequate provision shall be made for expansion. Proper earthing continuity shall be provided in the drawn-through cabling. The inside surface of the erected conduit and fixings shall be hard, smooth and free from burrs.

(b) All wires and cables passing under floor tiles shall be carried in galvanized continuous steel conduit to with fitting to BS 4607-1:1984+A2:2010 and BS 4607-5: 1982+ A3: 2010, and painted with black bituminous paint after erection, or rigid PVC conduit.

(c) No conduit smaller than 16mm outside diameter shall be used. The conduit shall be of such diameter that the total cross-sectional area of the cables and wires inside does not exceed 50% of that of the conduit.

(d) Approved junction or outlet boxes shall be used at all branching’s of conduit or outlets. A maximum run of 10m with 2 no. 90 degrees bends shall not be exceeded between one box and another on a single run of conduit.

(e) Junction boxes for concealed conduit runs shall be with knockouts. Reducing washers shall be used at boxes which do not have the required size of knockouts. Boxes shall have knockouts of conduit fitted to them. All boxes shall be supplied complete with covers, locknuts, bushings and the like.

(f) Bends in conduits shall be made such that the inside radius of the bend is not less than two and a half times the outside diameter of the conduit. Bent angles shall not exceed 90 degrees.

(g) Conduit work in floor slabs, or underground, shall be rendered water-tight by adhesive jointing with a waterproof adhesive approved by the Director of Works or by wrapping with a coating approved by the Director of Works.

(h) Conduits passing through floor slabs, walls or partitions shall be protected by sleeves.
(j) Conduits emerging from slabs for surface runs shall have all points of connection (i.e. bends) properly aligned so that the surface runs fit exactly in place.

(k) Where conduit terminates in a box, a smoothly rounded bushing with a separate locknut, to the approval of the Director of Works, shall be used to provide protection against wire abrasion.

(l) Surface mounted conduits to external or internal surfaces, where specified, shall be fixed by galvanized pressed steel or approved PVC straps at not more than 1.5m spacing for sizes up to 25mm diameter and not more.

(m) All conduit ends left open during the course of the Works shall be plugged to avoid filling with plaster, and the like.

4. Wire

(a) PVC insulated PVC sheathed copper conductors to BS 6004:2012 shall be exclusively used for wiring inside conduits and an earth wire shall be approved by the Director of Works. Wires shall be standard 600 volt grade for both light and power circuits.

(b) Pulling of wires inside conduit may be carried out before the finishing works have been completed, unless otherwise instructed by the Director of Works. However, connections to all devices and installation of fixtures shall be carried out after the finishing works have been completed.

(c) No lubricant, other than soapstone, shall be used to facilitate pulling of wires.

(d) All taps and joints in conductors shall only be made in outlets, junction boxes, and fuse boards, no joints shall be made in joint boxes. Connectors and clamps shall be of approved design shrouded with plastic insulation. At each fixture a loop or end of wire not less than 20cm long shall be left for connection to devices or fixtures. Soldered connections shall be used where conductors are under a strain. Non-acid base flux shall be used for soldering.

(e) Insulation at joints connections shall be equal to the relative conductor insulation and shall be made with PVC insulating tape.

(f) Wiring inside distribution boards shall be neat and well-arranged using appropriate lugs for termination and connection of conductors.

(g) Switches shall be wired in the phase lines only. The neutral conductors shall not be broken. All outlets shall be wired in the same manner with the
phase always connected to the name pole (right pole when viewed from
the rear or the top pole).

(h) In three phase circuits, phase identification shall be applied by adopting
red, yellow and blue for the three phases. The same color shall be used
consistently for the same phase. No phase shall be allowed to terminate
within 2.5m of any different phase. Neutral conductors shall have white
insulation, grounding conductors, when required for grounding fixtures,
shall have green insulation, or shall be bare copper wire.

5. **Switches**

(a) Switches shall be of an approved silent tumbler type.

(b) Outlet boxes for switches shall be fixed 1400mm above finished floor
level, unless otherwise directed and 120mm horizontally from the outside
edge of the nearest door architrave.

(c) Outlet box shall be of standard grade two-piece, molded housing, totally
enclosed, top-wired type, 220 volt, single pole, with bar-type plaster ears
and mounting screws.

6. **Socket Outlets**

(a) Boxes for socket outlets shall be installed 600mm above finished floor
level unless otherwise directed.

(b) Socket outlets to BS 546:1950 shall be approved 5 Amp. Or 15 Amp.
Outlets, to take two-pin plugs and shall be complete with plug.

(c) Outlets shall be suitable for 220 volts single phase and shall have molded
casing, plaster ears and mounting screws.

7. **Plates**

(a) Plates for switches and socket outlets shall be approved heavy-duty white
plastic, fitting flush against the plaster, attached to the outlet box by two
screws.

8. **Tungsten Fittings**

(a) All ceiling lighting points for interior tungsten filament lamps are to be
supplied to approved design and complete with ceiling rose, twin-twisted
1.00mm2 heat resisting PVC covered flex, lamp holder and pearl coiled-
coil gas-filled filament lamp (blub) of wattage shown on drawings, and if indicated in the Bill of Quantities, also with the light fitting there stipulated (ceiling or wall type).

9. **Fluorescent Lighting Fittings**
   
   (a) All ceiling lighting points for fluorescent tubes with reflector are to be supplied to approved design complete with ceiling rose, twin-twisted 1.00mm² heat resisting PVC covered flex, suspension hooks and rod or chains of enough length and double tube fluorescent light fittings of the best quality in the market or in according to the specified type in the tender documents or equal approved by the Director Of Works complete with starter, tube holder, transformers, and two 36 watt daylight type fluorescent tubes all fitted in white enameled, steel, open-ended trough reflector (local made).

10. **Distribution Boards**
   
   (a) Distribution Boards shall be to BS EN 61439-2:2011 and BS EN 61439-3:2012 and shall be of the dust resistant 3–phase 4-wire (solid neutral) 380/220 volt type with a main circuit breaker controlling a 3-phase distribution chamber with fuses for separate circuits mounted in a box of galvanized steel 2mm thick with a single door and wiring gutters and knockouts on all four sides. Alternatively, Miniature Circuit Breakers to BS EN 61439-3:2012 may be provided in place of fuses. The box shall be finished in medium light grey enamel over a rust inhibitor and the door shall have semi-concealed heavy duty galvanized hinges, combination catch and lock, and circuit directory card and card holder on the back. Distribution boards shall be wall-mounted with 12mm bolts.

   (b) 25% spare ways shall be allowed.

   (c) Circuit breakers shall be of the bolted-in type with interrupting rating of 7500 Amps. RMS a.c. and shall be of either three pole or single pole 380/220 volt as appropriate. They shall be of the quick made, quick break, trip free, trip indicating with thermal magnetic tripping mechanism (enabling non-automatic tripping) of the dust light and watertight type.
2003  Workmanship

1. The system of distribution shall be of the radial type, for both light and power circuits.

2.  
   (a) Connect the electrical installation to the electricity supply company’s main supply and make all arrangements therefore and pay all charges in connection therewith.

   (b) Provide all circuit breakers, meters and the like, required by the electricity supply company.

3.  Lighting Wiring  
   
   (a) From distribution board run 1.5mm² twin-with-earth sheeted-wiring cables to the lighting points shown on the drawings terminate at each point with fitting as shown on the drawings. All earth wires shall have green sleevings. No more than 12 lighting points shall be connected to 1 fuse way or Miniature Circuit Breakers (MCB). All in according to the drawings and the contract documents.

4.  Socket Wiring  
   
   (a) From the distribution board run 2.5mm² twin-with-earth sheeted-wire cables to the socket outlets shown on the drawings. 15Amp sockets shall be connected to individual fuses or MCBs. 5 Amp sockets shall be connected in group of not more than 3 to individual fuses or MCBs. All in according to the drawings and the contract documents.

5.  All motors over 1/8 HP shall be connected to individual fuse ways or MCBs. All motors other than fan motors less than 1/16 HP shall be provided with contactor starters fitted with overload tips and ‘no-volt’ release. All motors and other fixed appliances shall be provided with efficient means of isolation mounted immediately adjacent to the appliance. Final connection to motors and other appliances shall be made by means of PVC insulated cables enclosed in PVC covered flexible metal conduit of approved manufacture. A separate earth-wire shall in all cases be run through this conduit and exposed at either end. All in according to the drawings and the contract documents.
6. **Testing**

(a) The complete system shall be thoroughly tested before operation. Tests shall be carried out by the Contractor, under the supervision of the Director of Works, or a person nominated by him. Any modifications or repairs necessary on the completion of the tests shall be made good at the Contractor’s expense. The contractor shall provide all testing equipment and materials.

(b) Tests at site shall include:

(i) Continuity test of the whole system, including the grounding system, shall be carried out by means of a bell and battery supply;

(ii) Megger tests shall be carried out on conductor installations and between insulated conductors and ground, using a 500 volt megger. Readings shall not be less than the value specified in the National Electric Code;

(iii) Operating tests shall be carried out on all circuits and equipment to the satisfaction of the Director of Works and the local electricity authority.

7. **Labeling**

(a) All sockets, switches, cables, circuits, junction boxes, low voltage outlets shall be labeled using special labeling system to the approval of the Director of Works.

2004. **Sundries**

1. The Contractor shall leave the electrical installations in proper working order on completion of the works.

2. If indicated in the Bill of Quantities that wiring and outlets are required for a telephone system, such wiring and fitments will be according to instructions, and will be embedded in the walls with in-lets and outlets as shown on the drawings. Handsets and exchange will be provided by the Telephone Office or by the Agency, and the Authority in charge will also make connections to the exchange. Materials and labor should be approved standards.
2101 General

1. The work shall be carried out to the satisfaction of the Director of Works and in accordance with the rules, regulations and requirements of the supply authority.

2. Execute and complete the gas installation shown on the drawings and/or described in the Contract Documents.

3. Pipework shall be laid in UPVC pipe/sleeve underground and in galvanized pipe externally and to be painted in accordance with Series 1900 Painting and Decorating, unless otherwise specified.

2102 Materials

1. Pipework shall generally be copper to BS EN 12449:2012.

2. Gas outlets/collectors
   
   (a) Gas outlets shall be solid brass, chromium plated, and duplex gas outlets as specified in the contract documents or equal approved.

   (b) Each gas outlet shall be provided with a 12mm diameter threaded, chromium plated pipe with two chromium plated back nuts and two hard neoprene washers; one end of the pipe shall be fitted with a 10mm diameter brass hose connector.

   (c) Outlets, elbows, pipes and hose connectors shall be jointed with an approved jointing compound suitable for use with gas installations specified. Joints shall not be made with red lead.

   (d) The gas outlets/collectors shall be put within a steel/galvanized distribution box size 60cm wide x 75cm height and 15cm deep recessed inside wall, including handles, key and painting all in according to the contract documents.

   (e) Gas Regulator of the best quality in the local market shall be installed at the gas store, including the required distributor outlets, regulator, pressure reducer, gauges, and required connections all in according to the contract documents and the instruction of the Director of works.
Workmanship

1. (a) Drill holes through tops to benches for pipes. Outlets shall be secured to bench tops by means of washers and back nuts on each side of the bench top.

(b) Copper pipes may generally be soldered but shall be brazed when near and appliance or subject to heating.

(c) Sharp bends and angles producing loss in pressure should be reduced to a minimum.

(d) Each run of pipe should be provided with a means of disconnection for easy cleaning or replacement.

(e) Pipes should be easily accessible without damaging the structure.

(f) Pipes should be properly supported with an incombustible material.

(g) As for a service pipe, where an installation pipe passes through a floor or wall, a sleeve should be provided, the space between sleeve and pipe being afterwards filled in.

(h) Where pipes are run on the surface of the structure, the support should be such that the pipe is held clear of the surface.

(j) Where vertical runs occur, means should be provided for removing obstructions by fitting a screwed plug at the bottom of the vertical run.

(k) Where non-ferrous pipes are used under floors, care should be taken to ensure that they will not be damaged by puncturing.

(l) Gas pipes should not touch other service pipes and should be laid as far as possible from electric cables.

(m) Pipes should not be laid near any source of heat.

(n) Where pipes are laid to points for future use only, the ends should be securely capped or plugged and be left under the floor surface preferably with access through a screwed-down trap.

(p) Joints in pipes should be of an approved type and jointing compounds, when used, should be non-corrosive and allow easy disconnection.
Testing

1. 
   (a) Before connection to any meter and before the exposed pipes are painted, the system shall be checked by or under the supervision of the Supply Authority.
   (b) Taps shall be specially designed for the type of installation specified (bottled or mains) and shall be tested to 5 lb/Inch\(^2\) pressure.
   c) Joints shall be tested to 3 lb/Inch\(^2\) pressure after completion and before painting.
Aluminum work

2200

Aluminum work
2201  **General**

1. Execute and complete all aluminum work shown on the drawings and/or described in the Contract Documents according to the specified sizes, profiles, types and dimensional requirements in a proper manner and in accordance with the Specification, contract documents and the approval of the Director of Works.

2. The aluminum works shall include all required ironmongery an hardware of the best quality available including all accessories and fittings such as wheels, rails, hinges, handles, locks, brushes, rubbers, supporting arms, door jacks, silicone sealant, stainless steel, screws and angles...etc. in according to the contract documents and the approval of the Director of Works.

3. The contractor shall submit shop drawings to the Director of Works prior to the commencement of works as well sample of manufacturing for approval. Approval by the Director of Works of the shop drawings or samples shall not relieve the Contractor of his responsibilities under the Contract.

2202  **Materials**

1. Extruded aluminium sections should be used as approved by the Director of Works. Shape shall be as shown on the drawings and as required fulfilling performance requirements, but not less than 3 mm thick.

2. This specification covers extruded bars, rods, wires, profiles, and tubes made from aluminium and aluminium alloys and shall comply with ASTM B221-14. All the products should be produced by hot extrusion or similar methods. The chemical composition of each material is determined in accordance with the specified suitable chemical and spectra chemical test methods. Samples for chemical analysis should be taken when the ingots are poured or from the finished or semi-finished products by drilling, sawing, milling, turning, or clipping. Tensile properties, elongation, and yield strengths of each product should conform to the requirements listed herein. Elongation requirements are not applicable for materials with sizes smaller than the specified limits.

3. All visible surfaces of the sections shall be brilliantly polished prior to anodising. The colour of anodising shall be as described in the Drawings and the contract documents.

4. The sections shall be anodised to a minimum thickness of 25 microns and shall comply with ASTM B137 - 95(2004) And ASTM B680 - 80(2014). The supplier must submit necessary evidence to the satisfaction of the Director of Works that the thickness of anodization is not less than 25 microns. In case of doubt the Director of Works reserves the right to send sample pieces to independent testing laboratories.
5. All required ironmongery and hardware shall be complete according to the contract documents and to the satisfaction of the Director of Works.

2203. Workmanship

1. The contractor shall verify all the dimensions of openings by field measurements so that all required aluminum works types as specified in the drawings and the contract documents including windows, doors, gates and fly screen…etc. will be accurately designed, fabricated and fitted to the structure. All frames shall be made to fit the actual openings with a maximum variation of erection tolerances 3mm clearance all round. Discrepancies in overall width or height exceeding 3mm will not be allowed and the frames will be rejected in such cases.

2. The manufacturing and erection of all aluminium works shall be in accordance with the manufacturer's written instructions and recommendations.

3. All windows, doors and gates shall be weather stripped with heat resistant PVC sections. The weather fighting action shall be achieved by a positive compressive action against the PVC section and shall not depend on an external contact with the PVC section. At every contact between two profiles two weathers tipping sections shall be provided for complete weather protection.

4. Hinges shall be in anodised aluminium with stainless steel pins and nylon washers. A mortice cylinder rim automatic deadlock of high quality with double pin tumbler shall be used when required.

5. The handle-latch set shall have all visible surfaces of anodised aluminium or similar non-rusting material to the approval of the Director of Works. The handle shall have a proper grip. The latching mechanism shall not be surface mounted but shall be concealed within the sections.

6. Glazing sections shall be in special heat-resisting PVC and of channel type. Separate glazing sections on each side of the glass will not be permitted. The thickness of the glass shall be as specified in the drawings and the contract documents but not less than 4mm thick. In case of the double sheets glass the minimum thickness shall be 6mm out, 4mm void and 4mm in.

7. If aluminium shutter or louvre specified in the drawings and the contract documents the contractor shall follow the details accordingly to the approval of the Director of Works. The shutter sections for windows and doors shall be of tubular type and shall be including flanges. The shutters of the windows and doors shall be assembled with concealed corners of high rigidity. Hinges shall be concealed within the sections. The rollers for sliding shutters for windows and doors shall be of an adjustable type. The adjusting screws shall be accessible in the assembled state of the shutters.
2204. **Sundries**

1. On completion of the works all frames, sections, latches, hinges, locks, angles, brushes, rubber, screws, glass and the like shall be cleaned, to be free from dirt, tested and functioning properly to the satisfaction of the Director of Works.

2. All keys shall be clearly labelled with plastic tags (5cm x 2cm) securely fixed to the keys, which shall be handed to the Director of Works.
Appendix

APPENDIX

The following is a list of British Standards to which reference is made in this Specification

<table>
<thead>
<tr>
<th>1. British Standards or Others</th>
<th>(Published by British Standards Institution or Others)</th>
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</thead>
<tbody>
<tr>
<td>BS EN 197-1:2011</td>
<td>Cement. Composition, specifications and conformity criteria for common cements.</td>
</tr>
<tr>
<td>BS EN 1008:2002</td>
<td>BS EN 1008:2002 - Mixing water for concrete. Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete</td>
</tr>
<tr>
<td>BS EN ISO 3766: 2003</td>
<td>BS EN ISO 3766: 2003 - Construction Drawings. Simplified representation of concrete reinforcement...</td>
</tr>
<tr>
<td>Standard Code</td>
<td>Description</td>
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<tr>
<td>BS 144:1997</td>
<td>Specification for coal tar creosote for wood preservation.</td>
</tr>
<tr>
<td>BS EN 942:2007</td>
<td>Timber in joinery. General requirements.</td>
</tr>
<tr>
<td>BS EN 10029:2010</td>
<td>Hot-rolled steel plates 3 mm thick or above. Tolerances on dimensions and shape.</td>
</tr>
<tr>
<td>BS EN 10210-1:2006</td>
<td>Hot finished structural hollow sections of non-alloy and fine grain steels. Technical delivery requirements.</td>
</tr>
<tr>
<td>BS EN 10025-1:2004</td>
<td>Hot rolled products of structural steels. General technical delivery conditions.</td>
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<tr>
<td>BS EN 10025-4:2004</td>
<td>Hot rolled products of structural steels. Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels.</td>
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<tr>
<td>BS EN 13658-1:2005</td>
<td>Metal lath and beads. Definitions, requirements and test methods. Internal plastering.</td>
</tr>
<tr>
<td>BS 5385-1:2009</td>
<td>Wall and floor tiling. Design and installation of ceramic, natural stone and mosaic wall</td>
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<td>Standard</td>
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<tr>
<td><strong>BS EN 14411:2012</strong></td>
<td>Ceramic tiles. Definitions, classification, characteristics, evaluation of conformity and marking.</td>
</tr>
<tr>
<td><strong>BS EN 13748-1:2004</strong></td>
<td>Terrazzo tiles. Terrazzo tiles for internal use.</td>
</tr>
<tr>
<td><strong>BS EN 1339:2003</strong></td>
<td>Concrete paving flags. Requirements and test methods.</td>
</tr>
<tr>
<td><strong>BS EN 1338:2003</strong></td>
<td>Concrete paving blocks. Requirements and test methods.</td>
</tr>
</tbody>
</table>
| **BS EN 13598-1:2010** | Plastics piping systems for non-pressure underground drainage and sewerage. Unplasticized poly (vinyl
chloride) (PVC-U), polypropylene (PP) and polyethylene (PE). Specifications for ancillary fittings including shallow inspection chambers.


| BS EN 124-1: 2015 | BS EN 124-1: 2015- Gully tops and manhole tops for vehicular and pedestrian areas. Definitions, classification, general principles of design, performance requirements and test methods.


<table>
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<tr>
<td>BS EN 1340:2003</td>
<td>Concrete kerb units. Requirements and test methods.</td>
</tr>
<tr>
<td>BS EN 491: 2011</td>
<td>BS ENG 491: 2011- Concrete roofing tiles and fittings for roof covering and wall cladding. Test methods.</td>
</tr>
<tr>
<td>BS EN ISO 1479:2011</td>
<td>Hexagon head tapping screws.</td>
</tr>
<tr>
<td>BS 4514:2001</td>
<td>BS 4514:2001- Unplasticized PVC soil and ventilating pipes of 82.4 mm minimum mean outside diameter, and fittings and accessories of 82.4 mm and of other sizes. Specification.</td>
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<tr>
<td>BS EN 1254-1:1998</td>
<td>BS EN 1254-1:1998 - Copper and copper alloys. Plumbing fittings. Fittings with ends for capillary soldering or capillary brazing to copper tubes.</td>
</tr>
<tr>
<td>BS EN 12201-5:2011</td>
<td>BS EN 12201-5:2011 - Plastics piping systems for water supply, and for drainage and sewerage under pressure. Polyethylene (PE). Fitness for purpose of the system.</td>
</tr>
<tr>
<td>Standard</td>
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<tr>
<td>BS 4213:2004</td>
<td>Cisterns for domestic use. Cold water storage and combined feed and expansion (thermoplastic) cisterns up to 500 l. Specification.</td>
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<tr>
<td>BS EN 13280:2001</td>
<td>Specification for glass fiber reinforced cisterns of one-piece and sectional construction, for the storage, above ground, of cold water.</td>
</tr>
<tr>
<td>BS 952-1:1995</td>
<td>Glass for glazing. Classification.</td>
</tr>
<tr>
<td>BS EN ISO 1461:2009</td>
<td>Hot dip galvanized coatings on fabricated iron and steel articles. Specifications and test methods.</td>
</tr>
<tr>
<td>IEC60502-1:2004+A1:2009 CSV Consolidated version</td>
<td>Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) - Part 1: Cables for rated voltages of 1 kV (Um = 1,2 kV) and 3 kV (Um = 3,6 kV).</td>
</tr>
<tr>
<td>BS 6004:2012</td>
<td>Electric cables. PVC insulated and PVC sheathed cables for voltages up to and including 300/500 V, for electric power and lighting.</td>
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<tr>
<td>BS EN 61439-3:2012</td>
<td>BS EN 61439-3:2012- Low-voltage switchgear and control gear assemblies. Distribution boards intended to be operated by ordinary persons (DBO).</td>
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