

# INVITATION TO BID

## **Procurement of Civil Works of an Elevated Water Tower and Mechanical Rom in Ansarieh, Lebanon**

Project Title: Enhancing the Role of Unions of Municipalities to Respond to Refugees' and Host  
Communities' Needs  
Lebanon



**United Nations Development Programme**

April, 2014

## Section 1. Letter of Invitation

Beirut, Lebanon

April 3, 2014

**Procurement of Civil Works of an Elevated Water Tower and Mechanical Room in Ansarieh, Lebanon**  
**Reference: LEB/CO ITB/22/14**

Dear Mr. /Ms.:

The United Nations Development Programme (UNDP) hereby invites you to submit a Bid to this Invitation to Bid (ITB) for the above-referenced subject.

This ITB includes the following documents:

- Section 1 – This Letter of Invitation
- Section 2 – Instructions to Bidders (including Data Sheet)
- Section 3 – Scope of Works, BOQ, Specifications and Drawing
- Section 4 – Bid Submission Form
- Section 5 – Documents Establishing the Eligibility and Qualifications of the Bidder
- Section 6 – Technical Bid Form
- Section 7 – Price Schedule Form
- Section 8 – Form for Bid Security
- Section 9 – Form for Performance Security
- Section 10 – Contract to be Signed, including General Terms and Conditions

Your offer, comprising of a Technical Bid and Price Schedule, together in a sealed envelope, should be submitted in accordance with Section 2.

You are kindly requested to submit an acknowledgment letter to UNDP to the following address:

United Nations Development Programme  
**Arab African International Bank Building, Riad El Solh Street**  
**Nejmeh, Beirut 2011 5211, Lebanon**  
**Email Address: [procurement.lb@undp.org](mailto:procurement.lb@undp.org)**  
Attention: Procurement Unit, UNDP Lebanon

The letter should be received by UNDP no later than **11 April 2014**. The same letter should advise whether your company intends to submit a Bid. If that is not the case, UNDP would appreciate your indicating the reason, for our records.

If you have received this ITB through a direct invitation by UNDP, transferring this invitation to another firm requires notifying UNDP accordingly.



Should you require any clarification, kindly communicate with the contact person identified in the attached Data Sheet as the focal point for queries on this ITB.

UNDP looks forward to receiving your Bid and thanks you in advance for your interest in UNDP procurement opportunities.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'Luca Renda', written over the printed name.

Luca Renda, UNDP Country Director

## Section 2: Instruction to Bidders<sup>1</sup>

### Definitions

- a) *“Bid”* refers to the Bidder’s response to the Invitation to Bid, including the Bid Submission Form, Technical Bid and Price Schedule and all other documentation attached thereto as required by the ITB.
- b) *“Bidder”* refers to any legal entity that may submit, or has submitted, a Bid for the supply of goods and provision of related services requested by UNDP.
- c) *“Contract”* refers to the legal instrument that will be signed by and between the UNDP and the successful Bidder, all the attached documents thereto, including the General Terms and Conditions (GTC) and the Appendices.
- d) *“Country”* refers to the country indicated in the Data Sheet.
- e) *“Data Sheet”* refers to such part of the Instructions to Bidders used to reflect conditions of the tendering process that are specific for the requirements of the ITB.
- f) *“Day”* refers to calendar day.
- g) *“Goods”* refer to any tangible product, commodity, article, material, wares, equipment, assets or merchandise that UNDP requires under this ITB.
- h) *“Government”* refers to the Government of the country where the goods and related services provided/rendered specified under the Contract will be delivered or undertaken.
- i) *“Instructions to Bidders”* refers to the complete set of documents which provides Bidders with all information needed and procedures to be followed in the course of preparing their Bid
- j) *“ITB”* refers to the Invitation to Bid consisting of instructions and references prepared by UNDP for purposes of selecting the best supplier or service provider to fulfil the requirement indicated in the Schedule of Requirements and Technical Specifications.
- k) *“LOI”* (Section 1 of the ITB) refers to the Letter of Invitation sent by UNDP to Bidders.
- l) *“Material Deviation”* refers to any contents or characteristics of the bid that is significantly different from an essential aspect or requirement of the ITB, and (i) substantially alters the scope and quality of the requirements; (ii) limits the rights of UNDP and/or the obligations of the offeror; and (iii) adversely impacts the fairness and principles of the procurement process, such

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<sup>1</sup> Note: this Section 2 - Instructions to Bidders shall not be modified in any way. Any necessary changes to address specific country and project information shall be introduced only through the Data Sheet.

as those that compromise the competitive position of other offerors.

- m) "*Schedule of Requirements and Technical Specifications*" refers to the document included in this ITB as Section 3 which lists the goods required by UNDP, their specifications, the related services, activities, tasks to be performed, and other information pertinent to UNDP's receipt and acceptance of the goods.
- n) "*Services*" refers to the entire scope of tasks related or ancillary to the completion or delivery of the goods required by UNDP under the ITB.
- o) "*Supplemental Information to the ITB*" refers to a written communication issued by UNDP to prospective Bidders containing clarifications, responses to queries received from prospective Bidders, or changes to be made in the ITB, at any time after the release of the ITB but before the deadline for the submission of Bid.

## A. GENERAL

1. UNDP hereby solicits Bids as a response to this Invitation to Bid (ITB). Bidders must strictly adhere to all the requirements of this ITB. No changes, substitutions or other alterations to the rules and provisions stipulated in this ITB may be made or assumed unless it is instructed or approved in writing by UNDP in the form of Supplemental Information to the ITB.
2. Submission of a Bid shall be deemed as an acknowledgement by the Bidder that all obligations stipulated by this ITB will be met and, unless specified otherwise, the Bidder has read, understood and agreed to all the instructions in this ITB.
3. Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of any Bid by UNDP. UNDP is under no obligation to award a contract to any Bidder as a result of this ITB.
4. UNDP implements a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical practices, and obstruction. UNDP is committed to preventing, identifying and addressing all acts of fraud and corrupt practices against UNDP as well as third parties involved in UNDP activities. (See [http://www.undp.org/about/transparencypdocs/UNDP Anti Fraud Policy English FINAL june 2011.pdf](http://www.undp.org/about/transparencypdocs/UNDP_Anti_Fraud_Policy_English_FINAL_june_2011.pdf) and [http://www.undp.org/content/undp/en/home/operations/procurement/procurement\\_protest/](http://www.undp.org/content/undp/en/home/operations/procurement/procurement_protest/) for full description of the policies)
5. In responding to this ITB, UNDP requires all Bidders to conduct themselves in a professional, objective and impartial manner, and they must at all times hold UNDP's interests paramount. Bidders must strictly avoid conflicts with other assignments or their own interests, and act without consideration for future work. All Bidders found to have a conflict of interest shall be disqualified. Without limitation on the generality of the above, Bidders, and any of their affiliates, shall be considered to have a conflict of interest with one or more parties in this solicitation process, if they:

- 5.1 Are, or have been associated in the past, with a firm or any of its affiliates which have been engaged UNDP to provide services for the preparation of the design, Schedule of Requirements and Technical Specifications, cost analysis/estimation, and other documents to be used for the procurement of the goods and related services in this selection process;
- 5.2 Were involved in the preparation and/or design of the programme/project related to the goods and related services requested under this ITB; or
- 5.3 Are found to be in conflict for any other reason, as may be established by, or at the discretion of, UNDP.

In the event of any uncertainty in the interpretation of what is potentially a conflict of interest, Bidders must disclose the condition to UNDP and seek UNDP's confirmation on whether or not such conflict exists.

6. Similarly, the following must be disclosed in the Bid:

- 6.1 Bidders who are owners, part-owners, officers, directors, controlling shareholders, or key personnel who are family of UNDP staff involved in the procurement functions and/or the Government of the country or any Implementing Partner receiving the goods and related services under this ITB; and
- 6.4 Others that could potentially lead to actual or perceived conflict of interest, collusion or unfair competition practices.

**Failure of such disclosure may result in the rejection of the Bid.**

- 7. The eligibility of Bidders that are wholly or partly owned by the Government shall be subject to UNDP's further evaluation and review of various factors such as being registered as an independent entity, the extent of Government ownership/share, receipt of subsidies, mandate, access to information in relation to this ITB, and others that may lead to undue advantage against other Bidders, and the eventual rejection of the Bid.
- 8. All Bidders must adhere to the UNDP Supplier Code of Conduct, which may be found at this link: <http://web.ng.undp.org/procurement/undp-supplier-code-of-conduct.pdf>

## **B. CONTENTS OF BID**

### **9. Sections of Bid**

Bidders are required to complete, sign and submit the following documents:

- 9.1 Bid Submission Cover Letter Form (see ITB Section 4);
- 9.2 Documents Establishing the Eligibility and Qualifications of the Bidder (see ITB Section 5);
- 9.3 Technical Bid (see prescribed form in ITB Section 6);
- 9.4 Price Schedule (see prescribed form in ITB Section 7);

9.5 Bid Security, if applicable (if required and as stated in the DS nos. 9-11, see prescribed Form in ITB Section 8);

9.6 Any attachments and/or appendices to the Bid (including all those specified under the **Data Sheet**)

#### **10. Clarification of Bid**

10.1 Bidders may request clarification of any of the ITB documents no later than the number of days indicated in the **Data Sheet** (DS no. 16) prior to the Bid submission date. Any request for clarification must be sent in writing via courier or through electronic means to the UNDP address indicated in the **Data Sheet** (DS no. 17). UNDP will respond in writing, transmitted by electronic means and will transmit copies of the response (including an explanation of the query but without identifying the source of inquiry) to all Bidders who have provided confirmation of their intention to submit a Bid.

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

#### **11. Amendment of Bid**

11.1 At any time prior to the deadline for submission of Bid, UNDP may for any reason, such as in response to a clarification requested by a Bidder, modify the ITB in the form of a Supplemental Information to the ITB. All prospective Bidders will be notified in writing of all changes/amendments and additional instructions through Supplemental Information to the ITB and through the method specified in the **Data Sheet** (DS No. 18).

11.2 In order to afford prospective Bidders reasonable time to consider the amendments in preparing their Bid, UNDP may, at its discretion, extend the deadline for submission of Bid, if the nature of the amendment to the ITB justifies such an extension.

### **C. PREPARATION OF BID**

#### **12. Cost**

The Bidder shall bear any and all costs related to the preparation and/or submission of the Bid, regardless of whether its Bid was selected or not. UNDP shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the procurement process.

#### **13. Language**

The Bid, as well as any and all related correspondence exchanged by the Bidder and UNDP, shall be written in the language (s) specified in the **Data Sheet** (DS No. 4). Any printed literature furnished by the Bidder written in a language other than the language indicated in the **Data Sheet**, must be accompanied by a translation in the preferred language indicated in the **Data Sheet**. For purposes of interpretation of the Bid, and in the event of discrepancy or

inconsistency in meaning, the version translated into the preferred language shall govern. Upon conclusion of a contract, the language of the contract shall govern the relationship between the contractor and UNDP.

#### 14. Bid Submission Form

The Bidder shall submit the Bid Submission Form using the form provided in Section 4 of this ITB.

#### 15. Technical Bid Format and Content

Unless otherwise stated in the **Data Sheet** (DS no. 28), the Bidder shall structure the Technical Bid as follows:

- 15.1 Expertise of Firm/Organization – this section should provide details regarding management structure of the organization, organizational capability/resources, and experience of organization/firm, the list of projects/contracts (both completed and on-going, both domestic and international) which are related or similar in nature to the requirements of the ITB, manufacturing capacity of plant if Bidder is a manufacturer, authorization from the manufacturer of the goods if Bidder is not a manufacturer, and proof of financial stability and adequacy of resources to complete the delivery of goods and provision of related services required by the ITB (see ITB Clause 18 and DS No. 26 for further details). The same shall apply to any other entity participating in the ITB as a Joint Venture or Consortium.
- 15.2 Technical Specifications and Implementation Plan – this section should demonstrate the Bidder's response to the Schedule of Requirements and Technical Specifications by identifying the specific components proposed; how each of the requirements shall be met point by point; providing a detailed specification and description of the goods required, plans and drawings where needed; the essential performance characteristics, identifying the works/portions of the work that will be subcontracted; a list of the major subcontractors, and demonstrating how the bid meets or exceeds the requirements, while ensuring appropriateness of the bid to the local conditions and the rest of the project operating environment during the entire life of the goods provided. Details of technical bid must be laid out and supported by an Implementation Timetable, including Transportation and Delivery Schedule where needed, that is within the duration of the contract as specified in the **Data Sheet** (DS noS. 29 and 30).

Bidders must be fully aware that the goods and related services that UNDP require may be transferred, immediately or eventually, by UNDP to the Government partners, or to an entity nominated by the latter, in accordance with UNDP's policies and procedures. All bidders are therefore required to submit the following in their bids :

- a) A statement of whether any import or export licences are required in respect of the goods to be purchased or services to be rendered, including any restrictions in the country of origin, use or dual use nature of the goods or services, including any disposition to end users;
- b) Confirmation that the Bidder has obtained license of this nature in the past, and



- have an expectation of obtaining all the necessary licenses, should their bid be rendered the most responsive; and
- c) Complete documentation, information and declaration of any goods classified or may be classified as "Dangerous Goods".

15.3 Management Structure and Key Personnel – This section should include the comprehensive curriculum vitae (CVs) of key personnel that will be assigned to support the implementation of the technical bid, clearly defining their roles and responsibilities. CVs should establish competence and demonstrate qualifications in areas relevant to the requirements of this ITB.

In complying with this section, the Bidder assures and confirms to UNDP that the personnel being nominated are available to fulfil the demands of the Contract during its stated full term. If any of the key personnel later becomes unavailable, except for unavoidable reasons such as death or medical incapacity, among other possibilities, UNDP reserves the right to render the Bid non-responsive. Any deliberate substitution of personnel arising from unavoidable reasons, including delay in the implementation of the project of programme through no fault of the Bidder, shall be made only with UNDP's acceptance of the justification for substitution, and UNDP's approval of the qualification of the replacement who shall be either of equal or superior credentials as the one being replaced.

15.4 Where the **Data Sheet** requires the submission of the Bid Security, the Bid Security shall be included along with the Technical Bid. The Bid Security may be forfeited by UNDP, and reject the Bid, in the event of any or any combination of the following conditions:

- a) If the Bidder withdraws its offer during the period of the Bid Validity specified in the **Data Sheet** (DS no. 11), or;
- b) If the Bid Security amount is found to be less than what is required by UNDP as indicated in the **Data Sheet** (DS no. 9), or;
- c) In the case the successful Bidder fails:
  - i. to sign the Contract after UNDP has awarded it;
  - ii. to comply with UNDP's variation of requirement, as per ITB Clause 35; or
  - iii. to furnish Performance Security, insurances, or other documents that UNDP may require as a condition to rendering effective the contract that may be awarded to the Bidder.

## 16. Price Schedule

The Price Schedule shall be prepared using the attached standard form (Section 7). It shall list all major cost components associated with the goods and related services, and the detailed breakdown of such costs. All goods and services described in the Technical Bid must be priced separately on a one-to-one correspondence. Any output and activities described in the Technical Bid but not priced in the Price Schedule, shall be assumed to be included in the prices of the items or activities, as well as in the final total price of the bid.

## 17. Currencies

All prices shall be quoted in the currency indicated in the **Data Sheet** (DS no. 15). However, where Bids are quoted in different currencies, for the purposes of comparison of all Bid:

- 17.1 UNDP will convert the currency quoted in the Bid into the UNDP preferred currency, in accordance with the prevailing UN operational rate of exchange on the last day of submission of Bid; and
- 17.2 In the event that the Bid found to be the most responsive to the ITB requirement is quoted in another currency different from the preferred currency as per **Data Sheet** (DS no. 15), then UNDP shall reserve the right to award the contract in the currency of UNDP's preference, using the conversion method specified above.

## 18. Documents Establishing the Eligibility and Qualifications of the Bidder

18.1 The Bidder shall furnish documentary evidence of its status as an eligible and qualified vendor, using the forms provided under Section 5, Bidder Information Forms. In order to award a contract to a Bidder, its qualifications must be documented to UNDP's satisfactions. These include, but are not limited to the following:

- a) That, in the case of a Bidder offering to supply goods under the Contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods' manufacturer or producer to supply the goods in the country of final destination;
- b) That the Bidder has the financial, technical, and production capability necessary to perform the Contract; and
- c) That, to the best of the Bidder's knowledge, it is not included in the UN 1267 List or the UN Ineligibility List, nor in any and all of UNDP's list of suspended and removed vendors.

18.2 Bids submitted by two (2) or more Bidders shall all be rejected by UNDP if they are found to have any of the following:

- a) they have at least one controlling partner, director or shareholder in common; or
- b) any one of them receive or have received any direct or indirect subsidy from the other/s; or
- c) they have the same legal representative for purposes of this ITB; or
- d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about, or influence on the Bid of, another Bidder regarding this ITB process;
- e) 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
- f) an expert proposed to be in the bid of one Bidder participates in more than one Bid received for this ITB process. This condition does not apply to subcontractors being included in more than one Bid.

## 19. Joint Venture, Consortium or Association

If the Bidder is a group of legal entities that will form or have formed a joint venture, consortium or association at the time of the submission of the Bid, they shall confirm in their Bid that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the joint venture jointly and severally, and this shall be duly evidenced by a duly notarized Agreement among the legal entities, which shall be submitted along with the Bid; and (ii) if they are awarded the contract, the contract shall be entered into, by and between UNDP and the designated lead entity, who shall be acting for and on behalf of all entities that comprise the joint venture.

After the bid has been submitted to UNDP, the lead entity identified to represent the joint venture shall not be altered without the prior written consent of UNDP. Furthermore, neither the lead entity nor the member entities of the joint venture can:

- a) Submit another Bid, either in its own capacity; nor
- b) As a lead entity or a member entity for another joint venture submitting another Bid.

The description of the organization of the joint venture/consortium/association must clearly define the expected role of each of the entity in the joint venture in delivering the requirements of the ITB, both in the bid and in the Joint Venture Agreement. All entities that comprise the joint venture shall be subject to the eligibility and qualification assessment by UNDP.

Where a joint venture is presenting its track record and experience in a similar undertaking as those required in the ITB, it should present such information in the following manner:

- a) Those that were undertaken together by the joint venture; and
- b) Those that were undertaken by the individual entities of the joint venture expected to be involved in the performance of the services defined in the ITB.

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 joint venture or those of its members, but should only be claimed by the individual experts themselves in their presentation of their individual credentials.

If the Bid of a joint venture is determined by UNDP as the most responsive Bid that offers the best value for money, UNDP shall award the contract to the joint venture, in the name of its designated lead entity, who shall sign the contract for and on behalf of all the member entities.

## 20. Alternative Bid

Unless otherwise specified in the **Data Sheet** (DS nos. 5 and 6), alternative bid shall not be considered. Where the conditions for its acceptance are met, or justifications are clearly established, UNDP reserves the right to award a contract based on an alternative bid.

## 21. Validity Period

- 21.1 Bid shall remain valid for the period specified in the **Data Sheet** (DS no. 8), commencing on the submission deadline date also indicated in the **Data Sheet** (DS no. 21). A Bid valid for a shorter period shall be immediately rejected by UNDP and rendered non-responsive.
- 21.2 In exceptional circumstances, prior to the expiration of the Bid validity period, UNDP may request Bidders to extend the period of validity of their Bid. The request and the responses shall be made in writing, and shall be considered integral to the Bid.

## 22. Bidder's Conference

When appropriate, a Bidder's conference will be conducted at the date, time and location specified in the **Data Sheet** (DS no. 7). All Bidders are encouraged to attend. Non-attendance, however, shall not result in disqualification of an interested Bidder. Minutes of the Bidder's conference will be either posted on the UNDP website, or disseminated to the individual firms who have registered or expressed interest with the contract, whether or not they attended the conference. No verbal statement made during the conference shall modify the terms and conditions of the ITB unless such statement is specifically written in the Minutes of the Conference, or issued/posted as an amendment in the form of a Supplemental Information to the ITB.

## D. SUBMISSION AND OPENING OF BID

### 23. Submission

- 23.1 The Technical Bid and the Price Schedule must be submitted together and sealed together in one and the same envelope, delivered either personally, by courier, or by electronic method of transmission. If submission will not be done by electronic means, the Technical Bid and Price Schedule must be sealed together in an envelope whose external side must :
- a) Bear the name of the Bidder;
  - b) Be addressed to UNDP as specified in the **Data Sheet** (DS no.20); and
  - c) Bear a warning not to open before the time and date for Bid opening as specified in the **Data Sheet** (DS no. 24).

If the envelope is not sealed nor labeled as required, the Bidder shall assume the responsibility for the misplacement or premature opening of Bid due to improper sealing and labeling by the Bidder.

- 23.2 Bidders must submit their Bid in the manner specified in the **Data Sheet** (DS nos. 22 and 23). When the Bid is expected to be in transit for more than 24 hours, the Bidder must ensure that sufficient lead time has been provided in order to comply with UNDP's deadline for submission. UNDP shall indicate for its record that the official date and time of receiving the Bid is the actual date and time when the said Bid has physically arrived at the UNDP premises indicated in the **Data Sheet** (DS no. 20).

23.3 Bidders submitting Bid by mail or by hand shall enclose the original and each copy of the Bid, in separate sealed envelopes, duly marking each of the envelopes as "Original Bid" and the others as "Copy of Bid". The two envelopes, consisting of original and copies, shall then be sealed in an outer envelope. The number of copies required shall be as specified in the **Data Sheet** (DS no. 19). In the event of any discrepancy between the contents of the "Original Bid" and the "Copy of Bid", the contents of the original shall govern. The original version of the Bid shall be signed or initialed by the Bidder or person(s) duly authorized to commit the Bidder on every page. The authorization shall be communicated through a document evidencing such authorization issued by the highest official of the firm, or a Power of Attorney, accompanying the Bid.

23.4 Bidders must be aware that the mere act of submission of a Bid, in and of itself, implies that the Bidder accepts the General Contract Terms and Conditions of UNDP as attached hereto as Section 11.

#### **24. Deadline for Submission of Bid and Late Bids**

Bid must be received by UNDP at the address and no later than the date and time specified in the **Data Sheet** (DS no. 20 and 21).

UNDP shall not consider any Bid that arrives after the deadline for submission of Bid. Any Bid received by UNDP after the deadline for submission of Bid shall be declared late, rejected, and returned unopened to the Bidder.

#### **25. Withdrawal, Substitution, and Modification of Bid**

25.1 Bidders are expected to have sole responsibility for taking steps to carefully examine in detail the full consistency of its Bid to the requirements of the ITB, keeping in mind that material deficiencies in providing information requested by UNDP, or lack clarity in the description of goods and related services to be provided, may result in the rejection of the Bid. The Bidder shall assume any responsibility regarding erroneous interpretations or conclusions made by the Bidder in the course of understanding the ITB out of the set of information furnished by UNDP.

25.2 A Bidder may withdraw, substitute or modify its Bid after it has been submitted by sending a written notice in accordance with ITB Clause 23, duly signed by an authorized representative, and shall include a copy of the authorization (or a Power of Attorney). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be received by UNDP prior to the deadline for submission and submitted in accordance with ITB Clause 23 (except that withdrawal notices do not require copies). The respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," or "MODIFICATION".

25.3 Bid requested to be withdrawn shall be returned unopened to the Bidders.

25.4 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bid and the expiration of the period of Bid validity specified by the

Bidder on the Bid Submission Form or any extension thereof.

## **26. Bid Opening**

UNDP will open the Bid in the presence of an ad-hoc committee formed by UNDP of at least two (2) members. If electronic submission is permitted, any specific electronic Bid opening procedures shall be as specified in the **Data Sheet** (DS no. 23).

The Bidders' names, modifications, withdrawals, the condition of the envelope labels/seals, the number of folders/files and all other such other details as UNDP may consider appropriate, will be announced at the opening. No Bid shall be rejected at the opening stage, except for late submission, for which the Bid shall be returned unopened to the Bidder.

## **27. Confidentiality**

Information relating to the examination, evaluation, and comparison of Bid, 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 to influence UNDP in the examination, evaluation and comparison of the Bid or contract award decisions may, at UNDP's decision, result in the rejection of its Bid.

In the event that a Bidder is unsuccessful, the Bidder may seek a meeting with UNDP for a debriefing. The purpose of the debriefing is discussing the strengths and weaknesses of the Bidder's submission, in order to assist the Bidder in improving the bid presented to UNDP. The content of other bid and how they compare to the Bidder's submission shall not be discussed.

# **E. EVALUATION OF BID**

## **28. Preliminary Examination of Bid**

UNDP shall examine the Bid to determine whether they are complete with respect to minimum documentary requirements, whether the documents have been properly signed, whether or not the Bidder is in the UN Security Council 1267/1989 Committee's list of terrorists and terrorist financiers, and in UNDP's list of suspended and removed vendors, and whether the Bid are generally in order, among other indicators that may be used at this stage. UNDP may reject any Bid at this stage.

## **29. Evaluation of Bid**

29.1 UNDP shall examine the Bid to confirm that all terms and conditions under the UNDP General Terms and Conditions and Special Conditions have been accepted by the Bidder without any deviation or reservation.

29.2 The evaluation team shall review and evaluate the Bids on the basis of their responsiveness to the Schedule of Requirements and Technical Specifications and other documentation

provided, applying the procedure indicated in the **Data Sheet** (DS No. 25). Absolutely no changes may be made by UNDP in the criteria after all Bids have been received.

29.1 UNDP reserves the right to undertake a post-qualification exercise, aimed at determining, to its satisfaction the validity of the information provided by the Bidder. Such post-qualification shall be fully documented and, among those that may be listed in the **Data Sheet** (DS No.33), may include, but need not be limited to, all or any combination of the following :

- a) Verification of accuracy, correctness and authenticity of the information provided by the bidder on the legal, technical and financial documents submitted;
- 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 any other entity that may have done business with the bidder;
- d) Inquiry and reference checking with other previous clients on the quality of performance on on-going or previous contracts completed;
- e) Physical inspection of the bidder's plant, factory, branches or other places where business transpires, with or without notice to the bidder;
- f) Testing and sampling of completed goods similar to the requirements of UNDP, where available; and
- g) Other means that UNDP may deem appropriate, at any stage within the selection process, prior to awarding the contract.

### **30. Clarification of Bid**

To assist in the examination, evaluation and comparison of bids, UNDP may, at its discretion, ask any Bidder to clarify its Bid.

UNDP's request for clarification and the Bidder's response shall be in writing. Notwithstanding the written communication, no change in the prices or substance of the Bid shall be sought, offered, or permitted, except to provide clarification, and confirm the correction of any arithmetic errors discovered by UNDP in the evaluation of the Bid, in accordance with ITB Clause 35.

Any unsolicited clarification submitted by a Bidder in respect to its Bid, which is not a response to a request by UNDP, shall not be considered during the review and evaluation of the Bid.

### **31. Responsiveness of Bid**

UNDP's determination of a Bid's responsiveness will 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 ITB without material deviation, reservation, or omission.

If a Bid is not substantially responsive, it shall be rejected by UNDP and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.

## **32. Nonconformities, Reparable Errors and Omissions**

32.3 Provided that a Bid is substantially responsive, UNDP may waive any non-conformities or omissions in the Bid that, in the opinion of UNDP, do not constitute a material deviation.

32.4 Provided that a Bid is substantially responsive, UNDP may request the Bidder to submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the 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.

32.5 Provided that the Bid is substantially responsive, UNDP shall 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 UNDP 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 subject to the above.

32.6 If the Bidder does not accept the correction of errors made by UNDP, its Bid shall be rejected.

## **F. AWARD OF CONTRACT**

### **33. Right to Accept, Reject, or Render Non-Responsive Any or All Bid**

33.1 UNDP reserves the right to accept or reject any Bid, to render any or all of the Bids as non-responsive, and to reject all Bids at any time prior to award of contract, without incurring any liability, or obligation to inform the affected Bidder(s) of the grounds for UNDP's action. Furthermore, UNDP is not obligated to award the contract to the lowest price offer.

33.2 UNDP shall also verify, and immediately reject their respective Bid, if the Bidders are found to appear in the UN's Consolidated List of Individuals and Entities with Association to Terrorist Organizations, in the List of Vendors Suspended or Removed from the UN Secretariat Procurement Division Vendor Roster, the UN Ineligibility List, and other such lists that as may be established or recognized by UNDP policy on Vendor Sanctions. (See [http://www.undp.org/content/undp/en/home/operations/procurement/procurement\\_protest/](http://www.undp.org/content/undp/en/home/operations/procurement/procurement_protest/))



#### **34. Award Criteria**

Prior to expiration of the period of Bid validity, UNDP shall award the contract to the qualified and eligible Bidder that is found to be responsive to the requirements of the Schedule of Requirements and Technical Specification, and has offered the lowest price (See DS No. 32).

#### **35. Right to Vary Requirements at the Time of Award**

At the time of award of Contract, UNDP reserves the right to vary the quantity of the goods and/or related services, by up to a maximum twenty five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions.

#### **36. Contract Signature**

Within fifteen (15) days from the date of receipt of the Contract, the successful Bidder shall sign and date the Contract and return it to UNDP.

Failure of the successful Bidder to comply with the requirement of ITB Section F.3 and this provision shall constitute sufficient grounds for the annulment of the award, and forfeiture of the Bid Security if any, and on which event, UNDP may award the Contract to the Bidder with the second highest rated Bid, or call for new Bid.

#### **37. Performance Security**

A performance security, if required, shall be provided in the amount and form provided in Section 9 and by the deadline indicated in the **Data Sheet** (DS no. 14), as applicable. Where a Performance Security will be required, the submission of the said document, and the confirmation of its acceptance by UNDP, shall be a condition for the effectivity of the Contract that will be signed by and between the successful Bidder and UNDP.

#### **38. Bank Guarantee for Advanced Payment**

Except when the interests of UNDP so require, it is the UNDP's preference to make no advanced payment(s) on contracts (i.e., payments without having received any outputs). In the event that the Bidder requires an advanced payment upon contract signature, and if such request is duly accepted by UNDP, and the said advanced payment exceeds 20% of the total Bid price, or exceed the amount of USD 30,000, UNDP shall require the Bidder to submit a Bank Guarantee in the same amount as the advanced payment. A bank guarantee for advanced payment shall be furnished in the form provided in Section 10.

#### **39. Vendor Protest**

UNDP's vendor protest procedure provides an opportunity for appeal to those persons or firms not awarded a purchase order or contract through a competitive procurement process. In the event that a Bidder believes that it was not treated fairly, the following link provides further details regarding UNDP vendor protest procedures:  
<http://www.undp.org/procurement/protest.shtml>

## Instructions to Bidders

### DATA SHEET

The following data for the supply of goods and related services shall complement / supplement the provisions in the Instruction to Bidders. In the case of a conflict between the Instruction to Bidders and the Data Sheet, the provisions in the Data Sheet shall prevail.

DS No.	Cross Ref. to Instructions	Data	Specific Instructions / Requirements
1		Project Title:	Enhancing the Role of Unions of Municipalities to Respond to Refugees' and Host Communities' Needs
2		Title of Goods/Services/Work Required:	Procurement of Civil Works of an Elevated Water Tower and Mechanical Room in Ansarieh
3		Country:	Lebanon
4	C.13	Language of the Bid:	<input checked="" type="checkbox"/> English
5	C.20	Conditions for Submitting Bid for Parts or sub-parts of the Total Requirements	<input checked="" type="checkbox"/> Not allowed
6	C.20	Conditions for Submitting Alternative Bid	<input checked="" type="checkbox"/> Shall not be considered
7	C.22	A pre-Bid conference will be held on:	Not Applicable
8	C.21.1	Period of Bid Validity commencing on the submission date	<input checked="" type="checkbox"/> 120 days
9	B.9.5 C.15.4 b)	Bid Security	<input checked="" type="checkbox"/> Required Amount: <b>5% of Bid Value</b> Form: <b>See Enclosed Section 8 – Form for Bid Security</b>
10	B.9.5	Acceptable forms of Bid Security	<input checked="" type="checkbox"/> Bank Guarantee (See Section 8 for template)
11	B.9.5	Validity of Bid Security	<b>150 days</b> from the last day of Bid submission.

	C.15.4 a)		Bid Security of unsuccessful Bidders shall be returned.
12		Advanced Payment upon signing of contract	<input checked="" type="checkbox"/> Not allowed
13		Liquidated Damages	<input checked="" type="checkbox"/> Will be imposed under the following conditions: Percentage of contract price per day of delay: <b>0.5%</b> Max. no. of days of delay : <b>Ten (10) days</b> Next course of action : <b>Termination of Contract</b>
14	F.37	Performance Security	<input checked="" type="checkbox"/> Required Amount : <b>10% of Contract Value</b> Form: <b>See Enclosed Section 9 – Form for Performance Security</b>
15	C.17 C.17.2	Preferred Currency of Bid and Method for Currency conversion	<input checked="" type="checkbox"/> United States Dollars (US\$)  <i>Reference date for determining UN Operational Exchange Rate : <b>24 April 2014</b></i>
16	B.10.1	Deadline for submitting requests for clarifications/ questions	<b>Five (5) working</b> days before the submission date.
17	B.10.1	Contact Details for submitting clarifications/questions <sup>2</sup>	Focal Person in UNDP: <b>Procurement Unit</b> Address: <b>Room # 310, 3rd Floor</b> <b>Arab African International Bank Building</b> <b>Riad El Solh Street</b> <b>Nejmeh, Beirut 2011 5211, Lebanon</b>  Fax No. : <b>+961 1 962 491</b> E-mail address dedicated for this purpose: <b>procurement.lb@undp.org</b>
18	B.11.1	Manner of Disseminating Supplemental Information to the ITB and responses/clarifications to queries	<input checked="" type="checkbox"/> Direct communication to prospective Bidders by email and posting on the websites: <b>www.lb.undp.org and www.undp.org</b>
19	D.23.3	No. of copies of Bid that must be submitted	Original: <b>One</b> Copies : <b>Two</b>
20	D.23.1 b)	Bid submission address	<b>Procurement Unit, UNDP Lebanon</b>

<sup>2</sup> This contact person and address is officially designated by UNDP. If inquiries are sent to other person/s or address/es, even if they are UNDP staff, UNDP shall have no obligation to respond nor can UNDP confirm that the query was officially received.

	D.23.2 D.24		<b>Room # 310, 3<sup>rd</sup> Floor</b> Arab African International Bank Building Riad El Solh Street Nejmeh, Beirut 2011 5211, Lebanon
21	C.21.1 D.24	Deadline of Bid Submission	Date and Time : <b>April 24, 2014 2:00 PM</b> <b>Beirut Local Time</b>
22	D.23.2	Manner of Submitting Bid	<input checked="" type="checkbox"/> Courier/Hand Delivery
23	D.23.2 D.26	Conditions and Procedures for electronic submission and opening, if allowed	Not Allowed
24	D.23.1 c)	Date, time and venue for public opening of Bid	Date and Time: <b>April 24, 2014 2:15 PM</b> Venue : <b>UNDP Lebanon Country Office</b>
25		Evaluation method to be used in selecting the most responsive Bid	<input checked="" type="checkbox"/> Non-Discretionary "Pass/Fail" Criteria on the Scope of Works, BOQ, Technical Specifications and Drawing; and <input checked="" type="checkbox"/> Lowest price offer of technically qualified/responsive Bid
26	C.15.1	Required Documents that must be Submitted to Establish Qualification of Bidders (In "Certified True Copy" form only)	<input checked="" type="checkbox"/> Company Profile, which should <u>not</u> exceed fifteen (15) pages, including printed brochures and product catalogues relevant to the goods/services being procured <input checked="" type="checkbox"/> Certificate of Registration of the business, including Articles of Incorporation, or equivalent document if Bidder is not a corporation <input checked="" type="checkbox"/> List of similar completed contracts during the past seven years <input checked="" type="checkbox"/> Provision of safety equipment to all site basis personnel
27		Other documents that may be Submitted to Establish Eligibility	- VAT Registration Certificate (if applicable). - Proposed work plan including activities and time lines. - Team Composition and Task Assignments.
28	C.15	Structure of the Technical Bid and List of Documents to be Submitted	See Section 2 - Instructions to Bidders, Clause 15
29	C.15.2	Latest Expected date for commencement of Contract	Upon Contract Signature

30	C.15.2	Maximum Expected duration of contract	The overall term of execution of this contract is effective from contract signature date until sixty (60) working days.
31		UNDP will award the contract to:	<input checked="" type="checkbox"/> One Bidder only
32	F.34	Criteria for the Award and Evaluation of Bid	<p><b>Award Criteria</b></p> <p><input checked="" type="checkbox"/> Non-discretionary "Pass" or "Fail" rating on the detailed contents of the Scope of Works, BOQ, Technical Specifications and Drawing</p> <p><input checked="" type="checkbox"/> Compliance on the following qualification requirements :</p> <p><b>Bid Evaluation Criteria</b></p> <p><input checked="" type="checkbox"/> Minimum 5 years in implementing reinforced concrete constructions and projects, with size above 100,000 \$;</p> <p><input checked="" type="checkbox"/> Relevant experience in executing reinforced concrete water towers (at least has constructed one tower in the past 7 years;</p> <p><input checked="" type="checkbox"/> Full compliance of Bid to the Scope of Works, BOQ, Technical Specifications and Drawing;</p> <p><input checked="" type="checkbox"/> Appropriateness of the Implementation Timetable to Project Schedule;</p> <p><input checked="" type="checkbox"/> Qualification of the Site Engineer to directly coordinate with UNDP and follow up on all constructions works;</p> <p><input checked="" type="checkbox"/> Qualification of all other personnel to be assigned to the contract;</p> <p><input checked="" type="checkbox"/> Availability of Machineries.</p>
33	E.29	Post qualification Actions	<p><input checked="" type="checkbox"/> Verification of accuracy, correctness and authenticity of the information provided by the bidder on the legal, technical and financial documents submitted;</p> <p><input checked="" type="checkbox"/> Validation of extent of compliance to the ITB requirements and evaluation criteria based on what has so far been found by the evaluation team;</p> <p><input checked="" type="checkbox"/> Inquiry and reference checking with other previous clients on the quality of performance on on-going or previous contracts completed.</p>
34		Conditions for Determining Contract Effectivity	<input checked="" type="checkbox"/> Signature of Contract by UNDP and the selected contractor
35		Other Information Related to the ITB	None

## Section 3a: Scope of Works, BOQ, Specifications and Drawing

### Ansarieh Elevated Water Tower and Mechanical Room

#### 1. BACKGROUND

Aiming at addressing the current needs caused by the Syrian refugee influx and based on previous experience, UN-Habitat is currently implementing *“Enhancing the Role of Unions of Municipalities to Respond to Refugees’ and Host Communities’ Needs”* Project, funded by UNICEF. The goal of the project is to improve the living conditions of host population and refugees through the enhancement of access to basic services.

In line with the project goal, the Project aims to achieve two main objectives:

- Empower key local stakeholders (Unions, municipalities, and water authorities etc.), enabling them collectively identify, analyze, and solve key problems and issues related to water and sanitation (WASH).
- Increase the provision of basic services, mainly WASH projects, through the active involvement of local authorities and unions of municipalities in identifying, assessing and implementing sustainable and sound infrastructure projects, including water network improvements, increasing water supplies, grey and black water treatment, as well as reducing contamination of water sources.

With the increase in the number of refugees in different areas of Lebanon, the demand on basic services has significantly increased. Local authorities, with limited financial and technical resources, have been encountering great challenges in providing sufficient basic services to citizens, both refugees and host population.

The Municipality of Ansarieh, one of the municipalities affiliated to the union of municipalities of Sahel Zarani, has been suffering from continuous water shortages especially with the insignificant amount of rainfall reported for this year. To overcome some of challenges, a water tower is planned to be constructed in Ansarieh. This water reservoir will provide the villages of Ansarieh and Loubieh with additional quantities of water.

#### 2. OBJECTIVES

This Scope of Works were developed to commission a qualified contracting company to undertake in Ansarieh, the construction of an elevated water tower (18 m height), in addition to the construction of a small room that will be used for mechanical purposes.

### **3. SCOPE OF WORKS**

Build an Elevated Water Reservoir- Capacity 300m<sup>3</sup>.

#### **Activities:**

- Excavation and backfilling works;
- Casting reinforced concrete for foundations, tie beams and all the neck columns/walls;
- Apply isolation membranes for the Roof and all different parts of the reservoir;
- Apply plaster at both exterior and interior faces of the reservoir;
- Install all mechanical fittings and piping for the reservoir, ladders and steel doors;
- Paint the Tower.

### **4. DURATION OF WORKS**

The contracting company is expected to commence the works immediately after Contract signature. The overall execution timeframe for the whole project is sixty (60) working days, effective from contract signature date. Extensions, if deemed necessary, can only be granted through mutual agreement between UN-Habitat and the contracting company. Urgent cases that could justify delays of works are mainly due to security reasons, in case of any conflicts in Ansarieh, or for extreme bad weather conditions.

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

### **5. STANDARD OF PERFORMANCE**

The Contractor shall perform the required services and carry out his obligations under this Contract with all due diligence, efficiency and economy, in accordance with generally accepted techniques and practices used in performing such type of activities and with professional engineering and contracting standards recognised. He shall observe sound management, and technical engineering practices, and employ appropriate advanced technologies and safe and effective equipment, machinery, materials and methods. The Contractor shall operate and maintain the equipment and machinery involved in the implementation activities in accordance with the relevant laws, standards, regulations and legislation, as well as the requirements under the Contract, and the manuals and guidelines as provided by the manufacturers and suppliers of the equipment and machinery.

#### **Site Safety:**

The Contractor shall be responsible for implementing strict safety measures on site in view of

the type of works being implemented; the Contractor shall provide and erect protection items required by site conditions or as requested by the Engineer to protect persons, onsite and offsite property, as required and as supplementary to such items that have been left in place; ascertain legal and other requirements.

The Contractor shall maintain protection in place until work is complete and danger of damage has ceased; at such time as approved by the Engineer, remove protections.

#### **Contractor's Resources:**

The Contractor shall utilise all necessary resources, manpower, machinery and equipment etc. in order to perform the required works in a proper, safe and timely manner. The Contractor should employ, to the maximum extent possible, the necessary labourer (skilled and/or unskilled) from within the project area.

### **6. MANAGEMNT MODALITIES**

An engineer will be assigned by UN-Habitat to directly supervise the works of the Contractor. The engineer will be directly reporting to and seeking approval/acceptance of output from the project Manager. The engineer will be reporting on progress of works on a weekly basis.

### **7. QUALIFICATION OF CONTRACTING COMPANY**

#### Experience:

- Minimum 5 years in implementing reinforced concrete constructions and projects, with size above 100,000 \$.
- Relevant experience in executing reinforced concrete water towers (at least has constructed one tower in the past 7 years).

#### Resources:

- Availability of a site engineer to follow up on all construction works. A copy of his/her CV is required to be submitted with the offer.
- Availability of machineries (scaffolding, Formworks, Construction Tools, etc...) and workers to carry out the required works.
- Ability to store all equipment and material in a safe yard.
- Ability to operate on final full shop drawings for the water tower.
- Ability to employ workers from the area.

#### Timelines and Safety:

In addition to presenting an offer that shows the previously mentioned qualifications:




- The Contractor shall present a work plan including activities and timelines.
- The contractor shall provide safety equipment to all site basis personnel:
  - Safety Helmets, Shoes, Jackets.
  - Construction Site should be closed and surrounded by a fence.
  - Workers should be provided harnesses while working on scaffoldings.

#### **8. ANNEXES**

- Bill of Quantities
- Technical Specifications
- Drawing

Project	ANSARIEH WATER TOWER		UN- Habitat	
Scope:	Bill of Quantities for the water tower and the mechanical room	Date: April 2014	File: WASH- ST-ZA-AN.WT- BOQ	
Job:	WASH- ST-ZA- AN.WT	Rev: 01	Sheet: BL01	
Plot:	1268	Phase: Tender	Capacity: 300 m3 as per drawings	
SITE CONSTRUCTION				
Div.	Item No.	Description of Material	Unit	Qty.
	A	<u>Excavation and Earthworks</u>		
	1	Excavate, remove debris, transport and prepare for Water Tower and mechanical room's foundation to a depth of -2.65m under Water Tower and -0.7m under mechanical room.	m <sup>2</sup>	160
	B	<u>Cast in Place Concrete</u>		
	1	Blinding 150mm thick	m <sup>2</sup>	160
		Reinforced concrete in ordinary Portland cement 30MPa (reinforcement measured separately) .		
	2	Columns, Walls, Slabs, Foundations, Tie Beams	m <sup>3</sup>	332
	C	<u>Concrete Reinforcement</u>		
		High yield reinforcement bars (fy=500Mpa)		
	1	Steel Reinforcement	Ton	35
	D	<u>Contractors / Workmanship</u>		
		Install and cast all RC structures around 332m <sup>3</sup> of RC.		
	1	Tie Beams at Foundation	m	42
	2	Tie Beams Upper Levels	m	55
	3	Trapezoidal Columns	m	60
	4	Rectangular Columns	m	60
	5	Slabs, Walls and Footings	m <sup>3</sup>	245
	6	Upstands and Parapets	m	45
	7	Shop Drawings- Detailed structural and Architectural drawings	LS	1
	E	<u>Concrete Masonry Unit Walls</u>		
		Supply and install non load bearing, precast <b>HOLLOW</b> concrete masonry walling; with bedding mortar including pointing and cleaning, reinforced concrete bond beams & columns for high walls, doors sills and jambs, and all necessary material and accessories; as per the specifications and drawings.		
	1	Concrete Hollow masonry unit wall (Unit: 400 x 200; 200 mm thick) for mechanical room walls.	m <sup>2</sup>	20

Project	ANSARIEH WATER TOWER		UN- Habitat	
Scope:	Bill of Quantities for the water tower and the mechanical room	Date: April 2014	File: WASH- ST-ZA-AN.WT- BOQ	
Job:	WASH- ST-ZA- AN.WT	Rev: 01	Sheet: BL01	
Plot:	1268	Phase: Tender	Capacity: 300 m3 as per drawings	
SITE CONSTRUCTION				
Div.	Item No.	Description of Material	Unit	Qty.
	F	<b><u>Cementitious waterproofing</u></b>  Isolation work for reservoir using cementiceous materials and PU paint. Work includes removing the 6mm steel bars with grinder and making small hole then filling the hole with cementiceous material. Filling the reservoir with water should be done before isolation work.		
	1	Isolation Works	LS	1
	2	Water Stop and Tie Rods and all fittings	m	42
	G	<b><u>Portland Cement Plaster</u></b>  Prepare surfaces, spatterdash, supply and apply ordinary portland cement and sand plaster coat to a minimum thickness of 15 to 20 mm, include metal lath 1 mm thick having approximately 50 nets per m <sup>2</sup> where required, and all expanded metal angle and stop beads at corners and abutments		
	1	Plasters	m <sup>2</sup>	930
	H	<b><u>Paints</u></b>  1 Prepare surfaces, supply and apply 2 coats of RedSeal Exterior Latex Flat paint (red brick color) for both Water Reservoir and Mechanical room external faces.	m <sup>2</sup>	400
	2	Prepare surfaces, supply and apply 2 coats of RedSeal Exterior Latex Flat paint (medium grey color) for Water Tower vertical elements.	m <sup>2</sup>	150
	3	Prepare surfaces, supply and apply 2 coats of Accolade Interior Enamel Flat paint (light grey color) for Water tower internal Tank.	m <sup>2</sup>	350
	4	Prepare surfaces, supply and apply 2 coats of Emulsion Interior paint (white color) inside mechanical room.	m <sup>2</sup>	30
	I	<b><u>Piping</u></b>  Supply and installation of pipes, insulation where indicated, anti-corrosion protection, fitting, bands, hangers, junctions, tees, supports, sleeves, flexibles wherever there is expansion joint as indicated on drawings and all necessary accessories, labor, tools, transport, testing, one year guarantee, all overhead expenses and profit.		
	1	Installing 5" Galvanized pipes (3 pipes,one for inlet, one for outlet, and one for overflow )	m	50

Project	ANSARIEH WATER TOWER		UN- Habitat	
Scope:	<b>Bill of Quantities</b> for the water tower and the mechanical room <b>WASH- ST-ZA- AN.WT</b> <b>1268</b>	Date: April 2014	File: WASH- ST-ZA-AN.WT- BOQ	
Job:		Rev: 01	Sheet: BL01	
Plot:		Phase: Tender	Capacity: 300 m3 as per drawings	
 <b>SITE CONSTRUCTION</b>				
Div.	Item No.	Description of Material	Unit	Qty.
	J	<b><u>Valves &amp; Pumps</u></b> Supply and installation of valves including: union, fixing, insulation where needed, all necessary accessories, labor, tools, transport, testing, one year guarantee, all overhead expenses and profit.		
	1	Installation of 5 gate valves, and 1 pressure relief valve, 1 centrifugal pump 1HP	LS	1
	K	<b><u>Metal Works</u></b> Supply and install painted galvanized steel ladder using epoxy water resistant paint comprising 50 x 10 mm steel flat bars bolted to R.C slabs and walls as main support, 20 mm diameter galvanized steel pipes welded to flat bars as stair steps, flanges, expansion bolts, anchors and all necessary material and accessories; as per the		
	1	Galvanized steel ladder, refer to drawings	m	20
	2	Roof Access Cover with all fittings and accessories (handles- expansion bolts- support arm- etc..), as per drawings	LS	2
	3	Internal Steel Ladder, see drawings	m	4
	4	Steel Door for Technical Room	LS	1

**UN HABITAT**

**WASH Department**

**General Technical Specifications  
For the Construction of an  
Elevated Concrete Water Reservoir**

**March 2014**

## **DIVISION 1: GENERAL PRELIMINARIES**

### **1.1 General**

The Conditions for Tender, the Conditions of Contract, the Drawings, and the Bill of Quantities shall be read in conjunction with the Technical Specifications and matters referred to, shown or described in any one are not necessarily repeated in the other(s). The Contractor shall comply with all the provisions contained within these Documents.

Notwithstanding the subdivision of the Specification into various headings, every part of it is to be deemed complementary to every other part and is to be read with it, so far as it may be practicable to do so, or when the context so implies.

All materials submitted by the Contractor for UN Habitat Engineer's approval should be certified from an approved laboratory accredited by Lebanese Authorities subjected to UN Habitat Engineers approval.

### **1.2 Inconsistency in Contract Documents**

The Contractor shall execute the works according to the provisions of the Contract Documents. In the event of any unforeseen or unintended conflict between the Particular Conditions and Specifications and this Specifications, the former shall prevail.

If the Contractor should discover that any work has been omitted and / or not indicated entirely or partially from all the documents, but that such work is essential to the safety or proper functioning of the works, he shall report the facts immediately to UN-Habitat. If the work is something which in the opinion of UN- Habitat could not have been foreseen by an experienced Contractor, UN-Habitat shall issue to the Contractor a variation order stipulating the details of the work to be done. Save as aforesaid in the above paragraph, no additional payment shall be made in respect of work carried out in connection with discrepancies between the various Contract Documents.

### **1.3 Safety and Accommodation for Contractor's Staff**

The Contractor shall ensure that all safety and welfare measures required under or by virtue of the provisions of any enactment or regulation are strictly complied with.

The Contractor shall provide and maintain suitable and sufficient shelters and mess rooms for his workmen and supervisory staff as are customary and necessary.

The Contractor shall provide at all construction sites sufficient closets or latrines to comply with local regulations. They shall be properly screened and maintained in a clean and sanitary state at all times. Camps for workmen, if provided, shall comply with all relevant government regulations and shall be laid out in an approved and orderly manner. Proper provision shall be made for the disposal of all waste and refuse, and there shall be an adequate supply of water for washing, cooking and drinking purposes. Sleeping quarters shall be properly ventilated and lighted, and the whole camp shall be maintained and cleaned at all time to comply with local regulations.

## **1.4 First Aid Outfits**

The Contractor shall provide and maintain for the duration of the Contract adequate first aid outfits at each construction site. The Contractor shall provide for the transport of serious cases to nearest hospital.

## **1.5 Precautions against Contamination of the Works**

The Contractor shall satisfy UN Habitat that all his personnel working on the site are medically fit to be in contact with a public water supply and his personnel shall undergo any necessary medical test to show that they are free from any infectious diseases and are not carriers of any such diseases.

The Contractor shall at all times take every possible precaution against contamination of the works. The Contractor shall give strict instructions to all persons employed by him to use the sanitary accommodation provided.

Throughout the Contract; the site and all permanent and temporary works shall be kept in a clean, tidy and sanitary condition.

The Contractor shall at all-time take measures to avoid contamination of existing watercourses and drains by petrol products or other harmful materials.

The Contractor shall be responsible for making all arrangements for the disposal of wastewater including the disposal of water from the water testing of mains on his own expense. He shall be responsible for obtaining permits from local authorities prior to such disposals.

## **1.6 Contractor's Yards and Stores**

The Contractor shall make his own arrangements for all yards, weather proof shed stores, workshops, offices, etc., and for all services in connection therewith. The location of all yards, stores, workshop, offices, etc., shall be agreed beforehand with the Municipality's Representative and shall be such as to avoid obstruction and nuisance to the public.

## **1.7 Site Cleanliness**

The Contractor shall make every effort to keep his site in a clean and orderly manner. He shall not deposit his builders' refuse indiscriminately but shall arrange for all waste to be transported to an authorized pit. He shall not deposit his refuse into trenches in backfilling.

Public highways services, streets, paved paths, passages, pavements, etc., must be kept clean and free of spoil and rubbish and must be brushed and washed as required by UN Habitat.

If the Contractor fails to keep his site clean after receiving UN Habitat engineer or RTO engineer's written warning notice, then UN Habitat will instruct a third party to carry out the work and the costs shall be recovered from the Contractor through the Contract.

## **1.8 Operation of Existing Utilities**

The existing utilities must be kept in continuous operation throughout the construction period. No interruption will be permitted which adversely affects the level of service provided.

Provided permission is obtained from Municipality and Water Establishment in advance, portions of the existing utilities may be taken out of service for short periods corresponding with periods of minimum service demands. Such permission will not relieve the Contractor of any of his responsibilities under the Contract.

## **1.9 Location of Existing Subsurface Structures and Utilities**

Before beginning excavation operations, the Contractor shall contact the specified departments and authorities and notify them of his intention to begin excavation operations.

The Drawings do not show all existing subsurface structures or utilities.

It shall be the responsibility of the Contractor to determine the exact location of such pipeline, subsurface structures and / or utilities ahead of his work by exploratory, excavation or other means and to take suitable precautions to prevent damage to them and to prevent interruption of the services which such facilities provide. If they are unintended broken or damaged, they shall be restored by the Contractor or the appropriate utility at the Contractor's expense.

The Contractor will be paid for all works necessary to complete exploration and relocation of subsurface and/or utilities by each linear meter of the measured pipeline. Where necessary, the Contractor shall use hand tools to excavate **test pits** prior to excavation to determine the exact locations of existing utilities. It shall be the responsibility of the Contractor to make such explorations sufficiently in advance of construction to enable UN Habitat or RTO to approve modifications, if any, to be made to the pipeline, structure or conflicting utility. The Contractor shall obtain the permission of UN Habitat before commencing any test pits and shall fence, mark and protect them, as required by UN Habitat. Test pits shall be refilled by hand as soon as practicable after the necessary information has been obtained.

As the excavation approaches sewers conduits, cables or other underground facilities, and with care the excavation shall be continued by means of hand tools. Where necessary, the Contractor shall provide temporary support for the existing utilities to prevent damage during his operations. Notwithstanding these provisions, if damage to existing utilities results from the Contractor's operations, such damage shall be repaired without delay by the Contractor or such repairs shall be borne by the Contractor.

If damage to existing utilities causes disruption to Contractor's schedule of work by delaying work in the area of such damage, the contractor shall readjust his schedule, methods of working and resources so that critical dates in the schedule for the completion of the Contract are not affected.

In case of pipelines, subsurface structures and /or utilities encountered in the work coincide with the pipe line route, UN Habitat Engineer shall have the authority to change the plans and order a deviation from the line and grade, or arrange with the Water Establishment or Municipality of the existing structures for removal, relocation or reconstruction of the obstruction following the procedures of the Water Establishment or Municipality at the Contractor's expense.

## **1.10 Signboards**

The Contractor shall provide, erect and maintain signboards having messages written in both Arabic and English languages, as prescribed by the authority and installed at each site of work and at the office, or at such other places as directed by the Engineer, and remove the same on completion. The sign boards shall generally show the following:

- . Name of Authority



- . Name of Contractor
- . Name of Work
- . Date of Commencement
- . Date of Completion

The minimum size of signboards shall be 1.0 X 1.5 meters, or as specified.

### **1.11 Protection of Works**

The Contractor shall take every care to prevent damages to the works from whatever cause and shall ensure that adequate protection is given to all works from activities of following trades and nominated Sub-Contractors. Vulnerable parts of the work particularly liable to damage, shall be protected as may be reasonable required by the RTO's Representative.

The Contractor shall keep all persons (including those employed by Sub-Contractors) under control and within the boundaries of the site. He will be held responsible for the care of the existing premises and of the works generally until their completion, including all work executed and materials, goods and plant (including those of sub-Contractors and suppliers) deposited on the Site; together with all risks arising from the weather, carelessness or of work people, damage or lost by theft or any other cause; and he shall make good at his own expense, all such damage and loss.

The Contractor shall keep the works well drained until UN Habitat Engineer certifies that the whole of the works is substantially complete and shall ensure that so far is practical, all work is carried out in the dry weather. Excavated areas shall be kept well drained and free from standing water.

The Contractor shall construct, operate and maintain all temporary dams, watercourses and other works of all kinds including pumping and well point de-watering plant that may be necessary to exclude water from the works while construction is in progress. Such temporary works and plant shall not be removed without the approval of Municipality's Representative. Notwithstanding of any approval by UN Habitat Engineer of the Contractor's arrangements for the exclusion of water, the Contractor shall be responsible for the sufficiency thereof and for keeping the work safe at all times particularly during any floods and/or making good at his own expense any damage to the works including any that may be attributable to flood. Any loss of production of additional costs of any kind that may result from floods shall be at the Contractor's own risk.

### **1.12 Material Found on the Site**

Sand, gravel, earth filling rock found on the site may be used free of charge in the works, subject to its meeting the Specifications being tested by the Contractor at his own expenses being approved by UN Habitat Engineer, and providing that it is obtained from excavation necessary for the works. The Contractor will not be allowed to excavate elsewhere on site for the purpose of procuring materials.

### **1.13 Materials, Goods and Workmanship**

- (i) **General:** Materials, goods and workmanship shall be of the best quality of their respective kind. The Contractor shall carry out everything necessary for the proper execution of the works, whether or not shown on the Drawings or described in Specifications. Work for which provisional quantities are specified will be measured and dealt with in the manner stated in the conditions of Contract for provisional sums.
- All equipment or materials shall be assembled, mixed, fixed, applied, installed or otherwise

incorporated in the works in accordance with the printed instructions of the manufacturer of the equipment or materials and/or the relevant standards as specified. The installation, calibration, operation, and testing of all mechanical and electrical equipment shall be carried out under the supervision of one of the manufacturer's specialists in the field and approved in advance by the UN Habitat Engineer based on certification issued from approved laboratory accredited by Water Establishment. The cost of the above test and calibration will be borne by the contractor.

The Contractor shall provide the Engineer with one soft and triplicate hard copies of all manufacturer's instructions relevant to the operation and maintenance of the equipment incorporated in the works as well as of all guarantees issued by the manufacturer(s) and relevant thereto.

**(ii) Customs and Local Dues:** All state dues, tolls rates, fees and charges in connection with the works shall be deemed to be included by the Contractor in his Contract Unit Rates.

**(iii) Specified Manufacturer's Products:** Manufacturer's name or catalogue number, if shown in the Specification or indicated on the Drawings, are given only for indicative purposes and for general reference only. It shall be understood that the actual material supplied shall meet the requirements of the Specifications. If necessary, the material specified under such manufacturer's name or catalogue indicated for reference, shall be modified under the direction of the Engineer.

Provided always the modified material shall meet the requirements of the specified material together with the requirements of other materials specified for other trades in these Specifications.

Any modification under such conditions shall not give the right to the Contractor to claim against any loss or extra cost incurred.

**(iv) Alternative Materials:** Should the Contractor wish to offer alternative items or materials to those specified, he shall supply details of such alternatives together with details of any reduction in the Contract price should the alternative be allowed to be substitute for the specified items of materials. All offered alternatives shall comply fully in all respects with the Specifications of the particular items or materials. Acceptance or refusal of such alternatives will be entirely at the discretion of UN Habitat Engineer.

If during the course of the Contract certain materials or items required for use in the works should be unobtainable, despite the best effort of the Contractor, he may offer for the approval of UN Habitat Engineer alternative materials or items, provided that they possess the minimum equivalent requirements of the originally specified material.

In the event of acceptance of any alternative materials or items, a suitable price reduction shall be made in respect of any decrease in value but no price addition shall be made in respect of increase in value. In the event of refusal of any alternative materials or items the Contractor shall not be relieved of any of his obligations under the Contract and shall be solely liable for any delay or loss occasioned by his failure to provide the material or items as specified.

**(v) Imported Materials:** The Contractor is required to produce documentary evidence that all imported materials or items have been ordered shortly after the site is handed over for the commencement of the works. This means materials or items which have to be ordered from abroad. As soon as orders have been placed, copies of such orders shall be submitted to UN Habitat Engineer.

Consequently, no claim will be considered for extension of the Contract Period due to non-availability of materials unless for force measures as decided by UN Habitat Engineer.

## **1.14 Rejected Materials**

Should any materials, equipment or manufactured articles prove to be, in the judgment of RTO Engineers or as a result of testing in accordance with related standards, unsound or of inferior quality or in any way unsuitable for the works in which it is proposed to employ them, such materials, equipment or manufactured articles shall not be used in the works but shall be branded, if in the opinion of RTO Engineers this is necessary, and shall forthwith be removed from the site and replaced within 24 hours at the Contractor's expense and in each case as RTO Engineers shall direct.

## **1.15 Responsibility of the Contractor**

Where the approval of UN Habitat Engineer is required under the Specifications such approval shall not relieve the Contractor of his duties or responsibilities under the Contract.

## **1.16 Orders to Assistants or Foremen**

Whenever the Contractor's Project Manager or his Site Engineer (if so appointed) is not present on any part of the work when the Engineer or his representative may desire to give orders or directions, they shall be received by his assistant, foreman or person who may be in charge of the work. Such orders shall be fully complied with and shall be deemed to be given to the Contractor.

## **1.17 Site Survey and Setting-Out of Works**

Before commencing excavations the Contractor shall carry out a topographical and ground level survey (slopes, grade levels, borders, bench mark, elevations, ...etc.) for the location of the water tank and alignment of all pipelines and other structures and shall set out the pipelines and structures according to data and/or the co-ordinates of the relevant points as provided by the UN Habitat Engineer.

Existing triangulation points and bench marks will be indicated to the Contractor and shall be used as datum for the works.

The survey made by the Contractor shall be produced in the form of drawings showing the alignment and profiles of all pipelines. These drawings shall be compared with the Tender Drawings and differences shall be brought to the attention of UN Habitat Engineer. The Engineer shall then satisfy himself as to the differences and shall approve and sign the drawings with the profiles as approved by him. The approved profiles shall become, for the purpose of this Contract, the recorded survey which shall be used as the basis for measurement of the excavations and the preparation of shop Drawings.

The Contractor shall be responsible for preserving all base lines, P.I's, Theodolite stations and bench marks for the whole duration of the Contract.

Notwithstanding Un Habitat Engineer's checking and approval of the site survey the Contractor remains solely responsible for the accuracy of his data.

The Contractor shall set out the works and secure UN Habitat Engineer's approval before proceeding with the work. If in the opinion of the Engineer modification of the line or grade is advisable before or after stake-out the Engineer through the RTO will issue detailed instructions in writing to the Contractor for such modification and the Contractor shall revise the stake-out for further approval.

## **1.18 Program and Methods of Working**

**(i) General:** The Contractor shall submit to UN Habitat Engineer full details of his proposed construction Programme within the period stipulated in the Contract. He shall also submit details both of the construction plant and labor force which he proposes to employ and shall broadly describe his proposed construction methods. The details of the construction plant force shall include the make, type, capacity or rating and the number of units. Details of the labor force shall include senior staff, trade of specialist categories indicating the proportion of local labor which the Contractor expects to employ and shall show the variation in staff and labor levels and their distribution throughout the duration of the Contract consistent with the Programme.

**(ii) Details of Work Programme:** The Contractor shall furnish the following agreed details of his work programme to UN Habitat Engineer and to local Authorities responsible for traffic and traffic control at the times and in the manner detailed below.

a. Within two weeks of the Order to Commence, the Contractor shall submit to UN Habitat Engineer an overall programme of work indicating the period of executing each section of work in or alongside highways including details of anticipated road diversions. At the same time he shall provide a more detailed programme describing his proposal for the first month of work.

b. Every month, the Contractor shall submit to the RTO Engineers and the concerned Authorities a detailed programme describing the areas in which he proposes to operate including descriptions of proposed road diversions.

c. The Contractor shall submit to UN Habitat Engineer and concerned authorities a detailed programme describing the phases of the water tanks construction including excavation, formworks, reinforcement, concrete placement, curing, testing, and other related works for different parts of the water tanks.

**(iii) Sequence of Construction:** When preparing the programme of works as specified, the Contractor shall take account of the priority order described for various activities of the work.

## **1.19 Continuous Working**

If in the opinion of UN Habitat Engineer, it is necessary for the safety of the works or for any other reason, the Contractor shall carry out any part of the works continuously by day and by night when so instructed in writing by the Engineer.

## **1.20 Limits and Restrictions to Working Site**

Generally, working sites shall be confined by physical restrictions and the maintenance of accesses and traffic flow. The Contractor shall agree on the extent of his working areas with the concerned authorities and the RTO Engineers.

## **1.21 Site Progress Meetings**

During the course of the work, site progress meetings shall be held at regular intervals at least once every week in the presence of UN habitat Engineer or RTO Engineers for the purpose of co-coordinating the Contractor's works and to ensure that full compliance with the various site meetings will be recorded, copies will be distributed to all persons concerned and full effect shall be given to all instructions contained herein.

## **1.22 Cancellation Due to Slow Progress**

If the Engineer shall be of the opinion that having regard to the state of the works at any time, the

Contractor will be unable to complete any section of the works by the time specified or by such extension thereof as he may be entitled to, under the Contract and the Contractor has failed to carry out steps and to expedite the work in accordance with the Conditions of Contract or, if the Engineer is of the opinion that such steps are inadequate, the Engineer may after written warning notice, by written order, omit the whole or any part of the uncompleted work included in that section. The Employer shall be then, at liberty to execute such omitted work by his own workmen or by other Contractors. If the cost of such omitted or incomplete work shall exceed the sum which would have been payable to the Contractor on due completion of the said work, then the Contractor shall, upon demand, pay the Employer the amount of such excess and it shall be deemed debt due by the Contractor to the Employer and shall be recoverable accordingly.

### **1.23 Shop Drawings**

The Engineer shall have authority to order at any time and the Contractor agrees to provide at his own expense any number of shop drawings which, in the opinion of the Engineer, are necessary for the proper execution of a specified work. The Contractor shall not proceed with the above mentioned work unless these shop drawings are approved by the Engineer.

### **1.24 As-Built Drawings**

All prints of the “Shop Drawings” , where required, shall be corrected by the Contractor and submitted to the Engineer for approval as the works proceed. Upon the completion of the works, the Contractor shall prepare a complete set of “As Built” Drawings for the project as executed, including tie-ins, presented on a computerized electronic form, and submit them to the Engineer for approval. When approved by the Engineer, the Contractor shall submit a digital copy on the specified format for each project and six copies of all Drawings duly marked “As-Built”. The final payment shall not be made except for the actual works that have been completed in accordance with the Specifications and have been duly presented on the “As-Built” Drawings.

### **1.25 Bill of Quantities and Bid Prices**

The Contractor shall before pricing the work check all Drawings, Specifications and Bill of Quantities and satisfy himself by measurement, enquiry or otherwise as to their accuracy.

It shall be the responsibility of the Contractor to satisfy himself as to the correctness of the quantities of materials to be supplied and amount of works to be carried out before submitting his bid price.

The Contractor shall notify the Employer of any omissions, errors or discrepancies found in the Specifications, Drawings, or Bill of Quantities prior to submitting his tender and shall include in his Bid Price for the particular section of the works described in the Bill of Quantities and the cost of any materials and works missing or which have been over-looked in the preparation of the Tender Documents and which are necessary for the proper completion of work.

Omissions from the Drawings or Specifications or the incorrect description of details of work which are evidently necessary to carry out the intent of the Drawings and Specifications, or which are customarily performed, shall not relieve the Contractor from rectifying such omissions and details of work, but they shall be performed as if fully and correctly set forth and described in the Drawings and Specifications.

The Contractor shall, after a thorough and careful study of all the required works comprised in the



various sections of the several Documents of the Contract, make an assessment of the amount of all the works comprised and shall quote in the Bill of Quantities a Bid Price for each of the various items of works described, which price shall be binding subject to the relative Clauses of the Contract.

The Bid Prices inserted in the Bill of Quantities are the full inclusive of the value of the works described under the several items and shall cover, by way of illustration but not limitation, the cost of all labour, subsistence, travelling, materials, fittings, temporary works, constructional plant, watching and lighting, overhead charges and any other expenses whatsoever together with all risks, liabilities and obligations set forth or implied in the Contract Documents. The Bid Prices shall also include for all ancillary and other work facilities and services relating to the construction of the water supply system, valves, valve boxes and chambers, cleaning and tidying of the Site on completion and all that is required to hand over the works and surrounds complete in every respect and ready for immediate use in accordance with the Drawings, Specifications, Bill of Quantities and other Tender Documents to the full satisfaction of the Engineer.

## **1.26 Visitors on Site**

The Contractor shall at all times give free and undisputed access and all facilities to any representative of the Employer or to any person authorized by the Employer or the Engineer wishing to view or inspect any part of the works or the materials to be incorporated therein. No unauthorized persons are to be allowed into any part of the site and the Contractor shall take steps to prevent this and instruct his watchmen and foremen accordingly.

## **DIVISION 2: EARTHWORK**

### **2.1 Scope**

The work covered by this Division comprises: site preparation, surveying, excavation, filling compacting and grading, stone and disposal of excess materials.

### **2.2 Site Preparation**

Prior to commencing any excavation work, the contractor shall establish a horizontal and vertical survey, record existing ground elevations and stake the location of foundations, valve chamber, fences to be excavated.

#### **2.2.1 Clearing, Grubbing and Grading**

The Contractor shall perform the clearing and grubbing (if any), of top soil consisting mainly of loose soil, vegetable and organic matters, drift sand, unsuitable soil and rubbish. All materials resulting from the above operations shall be removed from the site, loaded and transported and off loaded, spread and leveled to approve dumps as directed by Ansarieh Municipality.

The ground surface under all embankments, as shown on the Drawings or where directed by UN habitat Engineer, and the surface of all excavation that is to be used for embankments shall be cleared of all concrete foundations, stumps, roots and vegetable matter of every kind. The stumps shall be pulled or otherwise removed and the roots grubbed and both shall be removed to an approved dump site.

The Contractor shall include for grading the route to provide access for his equipment and personnel, executing all cuttings to remove the high point of rises in terrain and in all respects prepare the route for pipe laying operations, all in accordance with the requirements of good pipeline construction practice.

### **2.3 Setting-Out**

The Contractor shall stake-out the work as shown on the Drawings and secure the RTO's approval of his stake-out before proceeding with construction. If, in the opinion of UN habitat Engineer, modification of the line routing, elevations, bench marks, or grade is advisable before or after stake-out, UN habitat Engineer will issue detailed instructions in writing to the Contractor for such modification and the Contractor shall revise the stake-out for further approval.

If at any time during the progress of the works any error shall appear or arise in the position, levels, dimensions, elevations, bench marks, or alignment of any part of the works the Contractor, on being required in writing to do so by UN habitat Engineer or the RTO's, shall at his own expense rectify such error to the satisfaction of UN habitat Engineer or the RTO's. The checking of any setting-out or of any line, levels, elevations, bench marks ...etc. by the RTO's engineers shall not in any way relieve the Contractor of his responsibility for the correctness thereof and it shall not relieve him of the responsibility for the expenses for rectification or removal of faulty works.

## **2.4 Excavation**

### **2.4.1 General**

The Contractor shall perform all excavation true to lines, widths and depths shown on the Drawings or to such further lines, depths or dimensions as may be directed by UN Habitat Engineer.

Excavation work will be classified according to the quality of the material to be excavated. In three classes as follows

1. Excavation in rock
2. Excavation in sand
3. Excavation in mixed soil

### **2.4.2 Keeping Excavation Free from Water**

The Contractor shall provide all necessary temporary drainage, pumping, power pumping, pipe work and any other measures required to keep the excavations free from water arising from rain, springs, irrigation or any other cause and shall maintain such drainage during the course of the work, shift and adapt as may be required and clear away and make good all disturbed surfaces at completion, all at the Contractor expenses.

## **2.5 Excavation for Structures**

Excavation for foundation of structures shall be to elevations shown on the Drawings, and to such width as will give suitable room for construction of the structures, for bracing and supporting, pumping and draining. The bottom of the excavation shall be rendered firm and dry and in all respects acceptable to the RTO Engineers. Where compacted fill and/or blinding concrete under foundation are required, the depth of excavation shall be extended accordingly.

In common excavation the bottoms shall be leveled and trimmed to full width and neatly finished so as not to exceed by more than  $\pm 1\text{cm}$  the theoretical lines and levels and where under foundations and floors, shall be well watered and rammed before placing of concrete.

In common excavation the last 15cm at the bottom shall be taken out not earlier than 48 hours before casting of concrete.

Where concrete is to be placed directly upon or against rock, the excavation shall be sufficient to provide for a minimum thickness of concrete at all points.

Over excavation shall be filled with concrete B100 to the required level at the Contractor own expenses.

During final excavation to subgrade level, take whatever precautions are required to prevent disturbance and remolding. Material which has become softened and mixed with water shall be removed. The UN habitat Engineer will be the sole judge as to whether the work has been accomplished satisfactorily.



## 2.6 Excavation for Concrete Valve Chambers

Excavation for the concrete valve chambers shall be carried out to the dimensions, lines and grades shown on the Drawings or required by UN habitat Engineer.

Wherever the depth of the excavation or the nature of the soil makes it necessary to avoid caving in, the Contractor shall excavate the walls to a slope or brace and support the excavation. Should nevertheless earth slides occur, the Contractor shall remove the material resulting therefrom, clean the excavation of all stones, clods and other loose material and shall provide a clean excavation surface in which concrete can be cast according to the required dimensions and grades.

Should it appear that the bottom of the excavation does not provide a solid base for the casting of the concrete floor, the Contractor will be required to consolidate the bottom using hand tampers and increasing the moisture content, if required, until the required density is obtained, and/or placing concrete class (B100) as blinding, all as directed by UN habitat Engineer.

Any over-excavation at the bottom of the structure shall be restored to the proper grade by filling the over-excavation class (B100) concrete or shall be filled with the concrete of which the structure is cast. In the case of over-excavation in the walls, whether caused by careless work or by the necessity to prevent slides by excavating to a slope or for any other reason, the Contractor shall remove all loose material from the excavation, cast the walls of the structure to the dimensions shown on the Drawings and fill the spaces between the structures and the sides of the excavation with compacted backfill in layers of 100mm thickness. The material of the backfill shall be moistened if necessary and compacted to the level of the adjacent natural soil.

## 2.7 Material Used in Backfill

**(i) General:** Backfill and fill material shall be suitable excavated material, natural or processed mineral soils obtained from off-site sources, or graded crushed stones or gravel.

Backfill and fill material shall be free from all organic material, trash, snow, ice, frozen soil, or other objectionable material which can't be properly compacted. Soft, wet, plastic soils which may be expensive, clay soils having a natural in-place water content in excess of 30 percent, soil containing more than 5 percent (by weight) fibrous organic material, and soil having a plasticity index greater than 30 shall be considered unsuitable for use as backfill and fill material.

Backfill and fill material shall have a maximum of one percent expansion when testing is performed on a sample remolded to 95 percent of maximum dry density (as per ASTM D698) at a two percent below optimum moisture content under a 490kg/m<sup>2</sup> surcharge. Backfill material shall be placed as specified in clause 2.8.1.

**(ii) Common Backfill Material:** Common Backfill or fill material shall not contain granite blocks, broken concrete, masonry rubble, asphalt pavement, or any material larger than 150mm in any dimension provided that this material is not more than 25 percent of the backfill or fill material.

**(ii) Selected Backfill Material:** Selected backfill and fill material shall conform to the requirements of common backfill except that the material shall not contain any materials larger than 50mm in its largest dimension provided that this material is not more than 20 percent of the Backfill or fill material.

- (iii) **Crushed Stones:** Crushed stones shall be sound, durable stone, angular in shape, and free of foreign material, structural defects and chemical decay. Crushed stones shall be of a maximum dimension of 50mm and in a minimum of 12mm measured in any direction.

## **DIVISION 3: CONCRETE AND REINFORCED CONCRETE**

### **3.1 General**

This section consists of furnishing all plant, equipment, appliances and materials and in performing all operations necessary casting of concrete and reinforced concrete in accordance with the Specifications, Drawings and UN habitat Engineer's instructions and subject to the terms of the Conditions of Contract.

Unless approved by UN habitat Engineer to mix the concrete on site for small quantities, all types of concrete will abide with the requirements of ACI-318 Standards and will be furnished to the site as ready mixed concrete supplied from a certified ready mixed plant by the Lebanese Syndicate of Engineers. Contractor must obtain UN habitat Engineer's approval of the concrete plant prior to the delivery of concrete from same. All concrete casting will fully abide with "good" control conditions requirements and approved by UN habitat Engineer.

### **3.2 Materials**

#### **3.2.1 Cement**

The cement shall be ordinary Portland cement complying with the requirements of *ACI standard*, unless sulfate-resisting cement (sea water cement) shall meet requirements similar to those of ASTM Specifications C150, latest edition, for type V is specified. Cement shall be fresh and suitable for use as approved by the Engineer.

The suppliers shall furnish a certificate with every consignment of cement, giving the results off all tests called for by the appropriate Standard. The RTO Engineer may, however, require further tests to be made after the cement is delivered to the site and Contractor shall provide the cement for such tests, and bear the costs of tests.

#### **3.2.2 Aggregates**

**A. Fine Aggregate and Sand:** Sand for concrete, mortar and grout shall be furnished by the Contractor from any approved source and shall be natural sand or a mixture of natural sand and fine crushed stone. The sand shall meet the requirements of ACI Standards, with the additional requirement that the specific gravity of the sand shall not be less than 2.50.

Unless otherwise specified the sand shall be graded as shown in Table 3.1 below:

**Table 3.1 Fine Aggregate and Sand Grading**

Sieve Size mm	Percentage Passing by Weight
4.75	100
2.36	80-100
1.18	30-75
0.60	25-60
0.30	10-30
0.15	0-10

**B. Coarse Aggregate:** Coarse Aggregate for concrete shall be furnished by the Contractor from an approved source and shall consist of hard dense durable uncoated rock fragments and shall meet the requirements of ACI Standards, with the following limitations.

The Los Angeles Abrasion test should not exceed 32% for grade B and 28% for grade A. Water absorption should not be more than 2.5 % more than the absorption of Basalt aggregate retained a 9.5mm sieve i.e. the total absorption should not exceed 3.5 % and the specific gravity shall not be less than 2.50. The grading of coarse aggregate shall be as shown in Table 3.2 below:

**Table 3.2 Coarse Aggregate Grading**

Nominal Sizes 19.0mm	
Sieve Size mm	Percentage Passing by Weight
25.0	100
19.0	85-100
14.0	0-20
9.5	0-5
Nominal Size 25.0mm	
Sieve Size mm	Percentage Passing by Weight
37.5	100
25.0	85-100
19.0	0-20
14.0	0-5

The size of coarse aggregate used in any part of work shall be such that it does not contain any particles larger than  $\frac{1}{3}$  of the thickness of the thinnest concrete member or  $\frac{3}{4}$  of the smallest distance between reinforcement bars whichever is smaller

**C. Combined Aggregate:** The grading of combined aggregate shall be approximately as shown in Table 3.3 below:

**Table 3.3 Combined Aggregate Grading**

Sieve Size mm	Percentage Passing by Weight		
	Grading No. 1	Grading No. 2	Grading No. 3
63	95-100	-	-
50	80-100	100	-
37.5	65-85	90-100	100
25	50-75	50-85	90-100
19	45-65	45-75	70-100
9.5	38-55	38-55	50-75
4.75	30-45	30-45	35-60
2.36	23-35	23-35	27-15
1.18	17-27	17-27	20-35
0.3	4-9	4-9	5-15
0.15	1-7	1-7	1-5
0.075	0-5	0-5	0-5

The Contractor shall carry out the sampling and testing of aggregates at frequent intervals as required by UN habitat Engineer.

- Sieve analysis.
- Clay, silt and fine dust.
- Specific gravity.
- Water absorption.
- Bulk density, voids and bulking.
- Moisture content.
- Organic impurities.
- Aggregate impact value.
- Aggregate crushing value.
- Ten percent fines value.
- Crushing strength.
- Aggregate abrasion value.
- Chemical properties (soluble salt content).

The Contractor shall provide the necessary apparatus required for carrying out the tests together with all necessary labor and materials used in conducting the tests.

The Contractor shall be deemed to have included in his rates for carrying out these test.

All aggregates supplied shall be subject to the approval of UN habitat Engineer, but certificates as to compliance with the relevant Lebanese Standard shall be provided by the Contractor before deliveries to site. Sample loads of each grade of aggregate shall be delivered to the Site in sufficient time in advance of the commencement of concreting to allow for examination and testing and the preparation and testing of the concrete trial mixes.

Sample quantities of each grade of aggregate thus provided will be retained for comparison with subsequent deliveries. Any rejected sample or subsequent delivery of non-standard material shall be removed from the site forthwith at the expense of the Contractor.

Aggregates delivered to the site during the course of the construction shall conform to the sample loads.

### **3.2.3 Water**

Water used in concrete either for mixing or curing shall be fresh potable water derived from an approved source of supply and shall be free from silt, oil, organic matter, acid, alkali-slare and other deterious substances. The temperature of the water shall not be less than 10° C.

If at any time during construction, water from an approved source becomes unsatisfactory, the Contractor shall provide satisfactory water from other sources.

Mortar prepared with water submitted by the Contractor for approval, shall show no marked change in time of set, no indication on unsoundness and a reduction of not more than ten percent in mortar strength when compared with mortar made with distilled water.

### **3.2.4 Reinforcement**

The steel bars to be used are of plain and deformed ribbed steel bars complying with *BS standard*. . Before bending the steel is to be straightened to UN habitat Engineer's satisfaction and cleaned of all rust loose mill scale, oil or any other dirt.

Spacers shall be made of plastic material or concrete cubes or hollow block pieces which shall match the concrete into which they are cast in every way (strength proportion, color).

Jointing of reinforcement bars shall be done with overlap not less than 50 times the larger diameter of the bar and shall be staggered.

All deliveries of steel reinforcement shall be accompanied by the manufacturer's certificate giving the results of tests carried out in accordance with the requirements of the relevant Standard and the Contractor shall submit samples of steel from each delivery to an approved authority for testing, the cost of these being deemed to be included in the rates.

### **3.2.5 Epoxy Coated Reinforcing Steel**

Plastic coated or epoxy coated bar supports and tie wires shall be employed to protect the coating from physical damage during placement and to prevent electrical coupling between mats.

Bars shall be carefully handled and installed so that patching at the job site will be kept to a minimum.

Where repair is required, the damage areas shall be cleaned, repaired and adequate cure time allowed before placing concrete. The installation shall be considered approved when patching has been done as outlined above.

Payment shall be included in Contract Tender Documents.

### **3.2.7 Additives**

Where required or approved by UN habitat Engineer, the Contractor shall use additives such as plasticizers or retarders in the concrete. Proportioning and mixing of additives thereof to be used in the concrete shall be in accordance with manufacturer's recommendations and subject to UN habitat Engineer's approval. Additives shall be added to the batch in solution in a proportion of the mixing water according to the manufacturer instructions. This solution shall be batched in such a manner as will ensure

uniform distribution of the additive throughout the batch during the specified mixing period.

Additives shall be suitable for use in contact with potable water after 30 days of concrete curing.

The additives used shall be furnished by the Contractor, and the cost of the materials and all costs incidental to their use shall be included in the unit prices bid in the Bill of Quantities for concrete in which the materials are used.

If approved, to be used strictly in accordance with the manufacturer's instructions.

- A. Water Reducing Admixtures:** To be used in the production of all reinforced concrete unless otherwise specified.
- B. Retarding/Water Reducing Admixtures:** May be used in large volumes of concrete subject to approval or at the request of UN habitat Engineer.
- C. Retarding Admixtures:** May be used in large volumes of concrete subject to approval or at the request of UN habitat Engineer, solution based on organic hydroxyl or phosphate salts.

### 3.2.10 Storage of Materials

#### (i) Cement:

Bags of cement shall not be laid directly on a floor but on wooden slats or duckboards to allow the efficient circulation of air around the bags.

Each cement store shall be arranged to allow the cement to be used in the order in which the various consignments are delivered.

Cement shall not be kept in a temporary store except where it is necessary for efficient organization of the mixing plant and only when the prior approval of UN habitat Engineer has been obtained.

The different types of cements shall be stored in separate compartments. If intermixing occurs all cement concerned will be condemned by UN habitat Engineer and shall be removed immediately from the site.

No cement, which in the opinion of UN habitat Engineer, has deteriorated or hardened, shall be used on the works and such cement shall be immediately removed from the site.

Cement manufactured more than 12 months prior to its proposed use on the site shall not be used.

Any cement which is stored on the site for a period in excess of 28 days shall be tested in accordance with the relevant Standard prior to use.

- (ii) Aggregates and Sand:** Adequate stocks of tested and approved aggregates shall be maintained on site and the capacity of the bins for each type and grading of aggregate shall be sufficient to hold the respective quantities required for the maximum amount of concrete which the Contractor is obliged or intends to pour in any continuous operation in one day. Stockpiles shall be built in layers of 1.50 meters maximum height and segregation of the aggregates prevented.

Concrete block walls shall separate different grades of aggregates.

Dense concrete or bituminous slabs shall be laid with sufficient falls to cover all aggregate stockpile areas or bins and shall extend to cover all surrounding areas where aggregates are likely to be discharged or handled. These areas shall be swept and kept clean at all times to ensure that the aggregates are not contaminated by the adjacent ground through trafficking or otherwise, and are to be constructed with adequate drainage for surplus water.



- (iii) **Admixtures:** Admixtures shall be stored in such a manner as to avoid contamination, evaporation, or damage. For those used in the form of suspensions or non-stable solutions, agitating equipment shall be provided to ensure thorough distribution of the ingredients. Liquid admixtures shall be protected from freezing and from temperature changes which would adversely affect their characteristics.
- (iv) **Reinforcement:** All bar or rod reinforcement shall be stored on suitable racks, each diameter and quality being kept separate. Fabric shall be stored on a level floor to prevent contamination by dirt or oil weatherproof and from undue exposure to the weather. High tensile rods or wire are to be stored in a damp resistant building to prevent rusting.

### 3.3 Workmanship

#### 3.3.1 Washing and Processing of Aggregates

The Contractor may be required to carry out on site supplementary processing and/or effective washing of coarse and fine aggregates where the aggregate production methods, in the opinion of UN habitat Engineer may not result in end products to the specification, or where aggregates suffer unacceptable changes during loading at source subsequent to the site, or otherwise. Aggregates which have been rejected may be re-processed by the Contractor on site, and then resubmitted for approval.

#### 3.3.2 Types and Strength of Concrete

The water content of all concrete shall be rigidly controlled and kept to the minimum required to obtain a workable concrete suitable for the nature of the work to be executed.

The Contractor shall carry out preliminary tests before the commencement of the main concreting operations in order to determine the minimum water cement and the actual proportions of the fine and coarse aggregates required, the necessary allowance being made for the moisture content of the aggregates.

After the value of the water cement ratio and the mix proportions has been approved by UN habitat Engineer several sample batches of workable concrete shall be mixed and test cylinder obtained therefrom.

The water cement ratio and mix proportions which have been determined as a result of the preliminary tests shall be used throughout the course of the works and no variation shall be made without the approval of UN habitat Engineer. Notwithstanding any such variation the Contractor shall ensure that the minimum cylinder crushing strengths specified in Table 3.4 are attained. The Contractor shall also determine the crushing strength at 7 days and from these results shall determine the relation between the 7 days and 28 days crushing strength for each class of concrete. The crushing strength at 7 days shall be 67% of the expecting strength at 28 days.

Further tests shall be carried out if materials or mixes are changed during the course of the work.

Weatherproof from undue exposure to the weather. High tensile rods or wire are to be stored in a damp resistant building to prevent rusting.

The quantities of all materials for concrete shall be accurately determined by weight in a weigh batching



machine approved by UN habitat Engineer. In order to ensure the accuracy of weigh batching the machine shall be tested and adjusted if required before the commencement of the works and at frequent intervals thereafter and shall also be kept clean.

Where concrete is to be placed in or under water the actual mix proportions and selection of aggregates be such as to ensure a resulting concrete with good flow and cohesion characteristics. The cement content shall be 25 percent greater than for a comparable mix for use in dry conditions. The minimum concrete cylinder strength for all concrete shall be as given in Table 3.4 for the comparable mixes for use in dry conditions. The slump of the concrete when tested in the dry shall not be less than 100mm.

The addition of proprietary admixtures intended to change the flow characteristics, cohesion or the rate of setting or hardening of the concrete shall not be made without the written approval of UN habitat Engineer.

### 3.3.3 Sampling and Testing of Concrete

All testing shall be done in the presence of the RTO Engineer's either on Site or in an approved testing laboratory as directed. The frequency of testing shall be noted in the Clauses of this Division and whenever required by UN habitat Engineer.

**Table 3.4 Suggested Designed Concrete Mixes**

Concrete Class	Cube Strength at 28 Days (kg/cm <sup>2</sup> )	Minimum Cement Content (kg/m <sup>3</sup> )	Maximum Water/Cement Ratio (%)	Purpose
B100	100	200	82	Plain Concrete, Cyclopean Concrete, Blinding Concrete
B150	150	220	80	Plain Concrete, Sloping Screeds, Fill

B180	180	260	76	Foundation built from Plain Concrete
B200	200	300	70	Concrete reinforced with medium steel strength such as manhole chambers, Thrust blocks, encasement around pipes and others
B250	250	360	62	Concrete reinforced with high steel strength such as base and walls of the water tanks
B300	300	400	55	Reinforced Concrete
B350	350	400	48	Pre-stressed, Post Tensiled concrete
B400	400	400	43	Pre-stressed, Pre-tensiled Concrete

The work test cylinder shall be made as follows depending on whichever is more frequent:

- (a) At least three times weekly per mixing plant.
- (b) At least once for each individual part of the structure as defined by UN habitat Engineer.
- (c) At least once per 50 cubic meters of concrete.

For concrete blinding the rate shall be once per each 100 cubic meters or fraction thereof.

**Notes:**

Development of mix designs and testing shall be conducted by an independent testing laboratory accredited by Engineering Syndicate and acceptable to UN habitat Engineer according to properties of concrete materials components, such designs and tests shall be born by the Contractor at his own expense.

### 3.3.4 Concrete Carpet

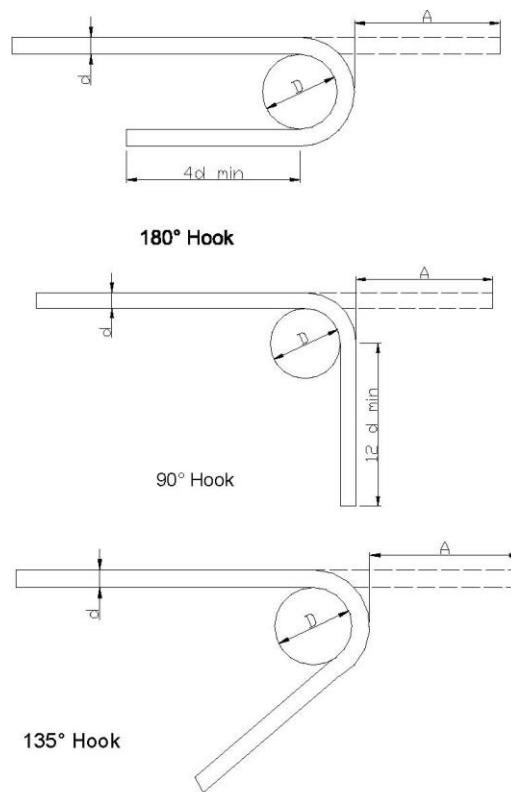
Immediately upon completion of the excavation and where shown on the Drawings or ordered by the RTO, a blinding layer of concrete Class B100 not less than 100mm thick or to the depth shown or ordered shall be placed to prevent deterioration of the formation and to form a clean working surface for the structure.

### 3.3.5 Reinforcement

Reinforcement shall be stored clear of the ground and adequately supported to prevent distortion.

Bar steel reinforcement shall be bent cold to forms and dimensions shown on the Drawings. No heating will be allowed to facilitate bending. Tack welding is not allowed to position bars crossing at right angles or for any other reason. Reinforcing steel showing transverse cracks shall not be used.

**Standard Bends:**



**Table 3.5**  
**Standard Bends**

Bar Dia (mm)	180 Bend		90 Bend		135 Bend	
(d)	D mm	A mm	D mm	A mm	D mm	A mm
10	60	130	60	130	40	105
12	75	155	75	180	50	115
16	95	180	95	215	65	140
18	115	205	115	255		
22	135	255	135	305		
25	150	280	150	345		
30	240	380	240	395		
32	275	430	275	455		
	180 Bend		90 Bend		135 Bend	

Tolerances: for diameter of bends, “D”, the tolerance ranges around plus or minus the diameter of the bar. Standard fabricating tolerances shall be in accordance with the Manual of Standard Practice of the Concrete Reinforcing Steel Institute. No weight allowance will be made for tolerances.

Reinforcement shall be clean and free from loose mill scale, loose rust, oil, grease, tar, paint or other deleterious matter and shall be maintained free from concrete droppings up to the time of concreting.

Reinforcement shall be placed in accordance with the Drawings and shall be supported and maintained in position by the provision of wire ties or clips at bar intersections and by spacers to maintain the reinforcement in its correct position. The spacers must be securely fixed to the reinforcement at the time of placing.

Cover spacers shall be of concrete made with 10mm aggregate and shall match appearance on surrounding concrete in exposed work. Proprietary plastic spacers may be used subject to the approval of UN habitat Engineer .The Contractor shall obtain approval of type, size and position of cover spacers.

The Contractor shall adopt effective measures to ensure that reinforcement remains accurately in position during the placing, consolidation, and setting of the concrete.

In slabs provided with two or more layers of reinforcement the parallel layers of steel shall be supported in position by the use of steel chairs. Spacers shall be placed at each chair to support layers of reinforcement from the concrete carpet or formwork. The rates for reinforcement shall include for the provision and fixing of stools.

Reinforcement projecting from work already concreted shall be bent out of its correct position for any reason unless permitted by the Engineer's Representative and shall be protected from deformation or other damage.

Except where otherwise shown on the length of lap joints shall be not less than 40 times the diameter of the largest bar and should be staggered.

Except where otherwise shown on the Drawing the minimum concrete cover to the nearest reinforcement exclusive of plaster or other decorative finish and concrete blinding shall be as follows:

- (a) For works against earth faces and in liquid retaining structures 35-40mm (external isolated structure).
- (b) For internal work in non-liquid retaining structures:
  - For slab reinforcement subject to chemical attack - 40mm.
- (c) The minimum concrete cover in no case should not be less than the maximum diameter of steel reinforcement bars used.
  - i. i. For a beam 25-35mm.
  - ii. For a column wall or strut 25-35mm.
  - iii. For slab reinforcement in building 25mm, or the diameter of the main bar

The distance between any two parallel bars shall not be less than 50mm, or 4/3 maximum aggregate size, or 1/5 the minimum width of member whichever is greater.

No concreting shall be commenced until the Engineer's Representative has inspected and approved the placed reinforcement.

### 3.3.6 Mixing of Concrete

Contractor will have to submit for UN habitat Engineer's approval a scheme of the proposed forms and shuttering as well as a detailed schedule for casting proceedings.

Contractor must inform UN habitat Engineer of any scheduled casting at least 48 hours prior to the casting and must obtain Engineer's approval to the proposed schedule.

When mixing on site is approved by UN habitat Engineer, concrete shall be furnished according to these specifications and shall be mixed with approved machines. The location of the mixing plants shall be agreed on with the Engineer and the Contractor must submit to the Engineer for approval before erection of any mixing plant his proposed arrangements for the storing of aggregates, batching and mixing of the concrete.

The concrete materials shall be mixed in an approved mechanical batch mixer of adequate size and type.

**Table 3.7 Standard Mixes**

Proportions by Weight		Slump (cm)
Ordinary (a) Mixes	Cement : Sand : Gravel 1 : 2 : 4 (150-300kg/m <sup>3</sup> cement) (b) 1 : 1.75 : 3.5 (350kg/m <sup>3</sup> cement)	Plastic concrete with slump 5-6cm
Special	to be designed according to the requirements and properties needed in design	Plastic concrete with slump 3-4 cm
Proportions by Weight		Slump (cm)

Mixing for each batch continues until there is a uniform distribution of the materials and uniformity of color and consistency of the concrete.

The Contractor shall take particular care to ensure that no residual materials remain in the mixer after depositing each batch of concrete and he shall wash and clean out the mixer drum immediately following the completion of each concreting operation or when changing to a mix using a different type of cement.

For the standard mixes the following mixes are assumed to contain enough water to yield a plastic mix with the shown slump:

**Table 3.8 Quantities Required for Ordinary Mixes**

Mix	Cement	Sand	Gravel	Water/ Cement Ratio	Quantity of Water L/bag of Cement
Ordinary type (a) B300	One bag 50kg	0.066m <sup>3</sup>	0.132m <sup>3</sup>	0.55	27.5
Ordinary type (b) B350	One bag 50kg	0.058m <sup>3</sup>	0.116m <sup>3</sup>	0.48	24.0

### 3.3.7 Protection and Curing of Concrete

#### (i) Materials:

• **Hessian or Burlap:** They shall be clean and free from harmful materials. Their unit weight shall be not less than 230g/m<sup>2</sup>.

• **Impermeable Membranes:** The following impermeable membranes may, with UN habitat Engineer's approval, be used.

1. Clear polyethylene film with no holes, tears, scratches and contamination of any type.
2. Hessian coated with white polyethylene of density not less than 300g/sq.m. The coating may be on one side only but shall be not less than 0.1mm thick and shall not peel during and after use.

• **Curing Compounds:** These shall conform to ASTM-C309.

• **Sand:** It shall be natural sand free of silt and clay and contaminants, which can be harmful to the concrete.

• **Water:** It shall satisfy the requirements already stated.

#### (ii) Method of Curing:

1. The first coat shall be applied immediately after the removal of the forms and the acceptance of the concrete finish and after the disappearance of free water on unformed surfaces. If the concrete is dry or becomes dry, it shall be thoroughly wetted with water and curing compound applied just as the surface film of water disappears. The second application shall be applied after the first application has set. During curing operations, any unsprayed surfaces shall be kept wet with water. The curing membrane will not be allowed on areas against which further concrete is to be placed.
2. Hand operated spray equipment shall be capable of supplying a constant and uniform pressure to provide uniform and adequate distribution of the curing membrane at the rates required. The curing compound shall be thoroughly mixed at all times during usage.
3. The curing membrane shall be protected against damage for the entire specified curing period. Any coating damaged or otherwise disturbed shall be given an additional coating. Should the curing membrane be continuously subjected to injury, UN habitat Engineer may require wet burlap, polyethylene sheeting, or other approved material to be applied at once.
4. No traffic of any kind will be permitted on the curing membrane until the curing period is completed, unless UN habitat Engineer permits the placement of concrete in adjacent sections, in which case the damaged areas shall be immediately repaired as directed.

#### (iii) Curing Time:

The minimum curing time shall be the number of days given in Table 3.9 unless the average surface



temperature of the concrete during the required number of days falls below 10°C, in which case the period of curing shall be extended until the maturity of the concrete reaches the value given in the following Table: Note other\* includes all permitted cements except OPC, PHPC and SRPC.

Key: OPC = Ordinary Portland Cement RHPC = Rapid-hardening Portland Cement. SRPC = Sulfate Resisting Portland cement.

**Table 3.9 Normal Curing Periods**

Minimum Periods of Protection for Different Types of Cement		
Conditions under which concrete is maturing	Number of days (where the average surface temperature of the concrete exceeds 10°C during the whole period)	Equivalent maturity (degree hours) calculated as the age of the concrete in hours multiplied by the number of degrees Celsius by which the average

The minimum curing time given in the Table above shall be compared with the time required for cylinder, cured under identical conditions to those, which the concrete is subjected to, attain 70% of the characteristic strength. The greater shall be taken as the minimum curing time.

Concrete shall be cured in such manners and for such periods as UN habitat Engineer may direct having regard to the climatic conditions prevailing at the time of placing any individual batch of concrete.

**(iv) Requirements:** The following requirements shall be strictly complied with by the Contractor except in those instances where UN habitat Engineer shall issue separate instructions modifying such requirements, or where the Contractor has obtained the prior approval of the RTO to a modification thereto.

**a. Top Surfaces of Horizontal Slabs Etc.:** Covering the surface with a 50mm carpet of sand kept constantly wet or spraying the whole surface with water continuously or pounding of the surface with water to a minimum depth of 20mm for a period of 14 days after casting.

**b. Undersides of Horizontal and Sloping Members:** Spray the whole surface with water immediately after the formwork is struck.

**d. Timber or Steel Shuttered Vertical and Sloping Surfaces.** Drape the formwork with Hessian during setting in the warm season and drape the concrete with Hessian immediately after striking the formwork. Spray the concrete surface and the Hessian continuously with water from spurge-pipes or from a trough accurately set to level for a period of 21 days during the summer months (April to October inclusive) so as to produce a continuous film of water on the surface of the concrete. During other seasons the same procedure shall be adopted but the RTO may permit a reduction in the period of spraying if conditions in his opinion justify such a procedure.

**e. Pipe Joints and Concrete Bedding, Haunching and Surround to Pipes.** Immediately after a pipeline has been laid it shall be completely shaded from the sun with a length of Hessian running the length of the trench. Should the pipeline contain any cement mortar in the joints or be protected with concrete, additional wet Hessian shall be placed directly over the mortar or concrete portions immediately following the placing of the mortar or concrete in each section of the pipeline and such Hessian shall be kept continuously wet until the pipeline is ready to receive the first layer of backfill. If removal of the Hessian is necessary to inspect or test the pipeline such removal be for the shortest practicable time.

**f. Concrete Test Cylinders.** The Contractor shall establish a small locked room for storing concrete test cylinders prior to testing and the key shall be in the custody of the RTO. Cubes shall be stored in water in this room unless the RTO Engineer should direct that cylinders be stored in conditions simulating those under the concrete of which the cylinders are representative is maturing. No placing or traffic of materials, passage of men, further construction or temporary works shall be allowed on any concrete until

it has matured sufficiently to permit such placing or traffic without detrimental effect on the concrete.

### **3.3.8 Removal of Shuttering**

Shuttering shall only be removed with the permission of the RTO engineer and the work of striking after the receipt of such permission shall be carried out under the personal supervision of a competent foreman. Great care shall be exercised during the removal to avoid shocks or reversal of stress in the concrete.

In cases where the RTO engineer considers the Contractor's proposal for the removal of shuttering to be premature either on account of the weather or for any other reason he may order the Contractor to delay such removal and the Contractor shall have no claim for delay in consequence thereof.

Notwithstanding any advice, permission or approval given by UN habitat Engineer, the Contractor shall be responsible for any injury to the work and any consequential damage caused by or arising from the removal of shuttering.

The minimum period from completion of casting to commencement of stripping will be as follows:

“Walls-48 hours Roof-14 to 21 days”.

Final decision for the removal of shuttering should be according to UN habitat Engineer's approval.

### **3.3.9 Repair of Surface Defects**

All repair works that might be required on sections of the cast concrete shall be performed by the Contractor not later than 24 hours after removing of forms.

If not otherwise instructed, Contractor will cut all projecting tie wires to a depth of 15mm, into concrete face and fill the recess with fresh concrete. Concrete projection caused by roughness of forms will be chiseled away or otherwise removed by a polishing carborundum stone. Gravel pockets, holes or faulty spots shall be chiseled out until clean and healthy concrete is exposed. All recesses shall be filled up with fresh concrete of approved cement grout and properly repaired. The repaired section will merge with the concrete of the structure and smoothed level with its surface.

All repair works will be performed only after damaged part has been checked by UN habitat Engineer.

All finish works shall be performed by the Contractor at his expense and he would not be entitled to any compensation for the same.

The defected area to be patched and an area at least 150mm wide surrounding it shall be dampened to prevent absorption of water from the patching mortar. A bonding grout shall be prepared using a mix of approximately one part cement to one part fine sand passing a No. 30 mesh sieve, mixed to the consistency of thick cream, and then well brushed into the surface. Particular care shall be taken to color match patches with the bulk concrete. If permitted or required, proprietary compounds for adhesion or as patching ingredients may be used in lieu of or in addition to the foregoing patching procedures. Such compounds shall be used in accordance with the manufacturer's recommendations. Specific approval of UN habitat Engineer is required to use proprietary compounds for patching.

Painting with epoxy after the repairing process should be applied and the cost of such work should be born by the Contractor at his own expense.



### **3.3.10 Water Stop Joints**

Joints with water stops will be constructed as marked on the Drawings or requested by UN habitat Engineer.

#### **Materials:**

Plastic waterstop - Expansion joints; Non-expansion joint; liquid retaining structure. Ribbed type waterstops with a center bulb made by extruding elastomeric plastic compound with virgin polyvinyl chloride as the basic resins. The compound shall contain no reprocessed materials. Minimum tensile strength of waterstop shall be 125kg/cm<sup>2</sup> (1750 psi) unless otherwise indicated.

Water stops will be furnished to the site as complete units having the shape and dimensions as indicated on the Drawings.

The edges of the water stop shall be joined by welding since no overlap will be permitted.

The water stop will be inserted accurately in the elements of the structure cast first and will be properly protected from any damage, dirt or distortion of its shape and position. Prior to casting the adjoining part of the concrete element, face of the joint will be properly cleaned and a 3mm. hot asphalt coat will be applied on the whole of the joint area. Sealing of joints shall be completed by filling the groove with an elastoseal pack.

#### **Installation:**

##### **STEP 1**

Place concrete below waterstop first, remove all air voids by vibrating thoroughly. Install waterstops for all joints where indicated on the Drawings. Waterstops shall be continuous around all corners and intersections so that a continuous seal is provided. Splices shall be made by welding in accordance with the manufacturer's recommendations, subject to acceptance of UN habitat Engineer. Only manufacturer's special approved tools shall be used for welding. The finished splices shall provide a cross-section that is dense and free of porosity.

##### **STEP 2**

Properly secure waterstops in wall joints before concrete is placed. Clamp both edges of the waterstop to reinforcing steel with black annealed steel tie wire as specified for tying reinforcing steel and secure in place so that the waterstop will be perpendicular to the joint and remain in the required position during concrete placement. Confirm there are no air voids, lift waterstop. A continuous impression of the waterstop, including edge of bulb, should be visible in the fresh concrete, continue this procedure along the entire poured joint, end to end. If a continuous impression is confirmed, with step 4. If a void larger than 6mm in diameter is present anywhere in the waterstop impression, proceed with step 3.

##### **STEP 3**

If a void larger than 6mm in diameter is present in the waterstop impression, additional concrete shall be placed under the waterstop, vibrated and step 2 repeated.

##### **STEP 4**

Finish placing concrete above the waterstop to top of slab.

**STEP 5**

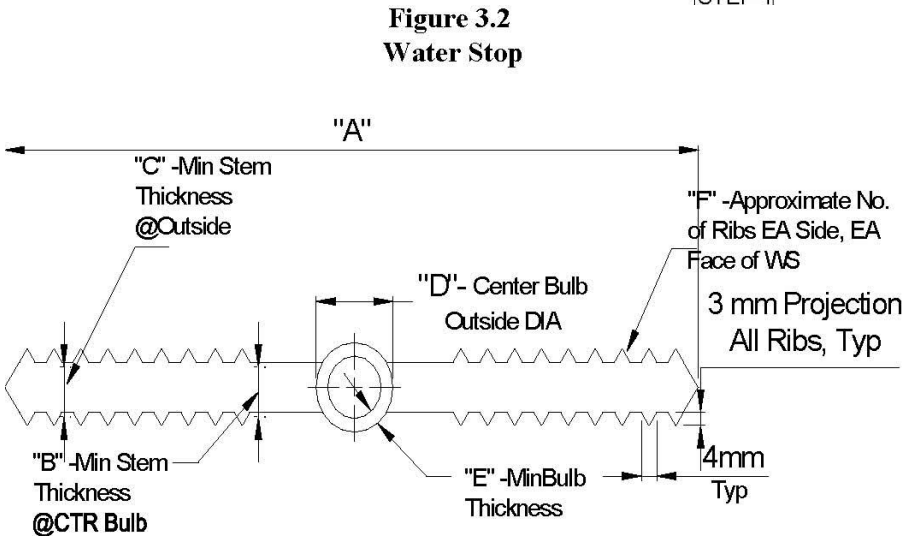
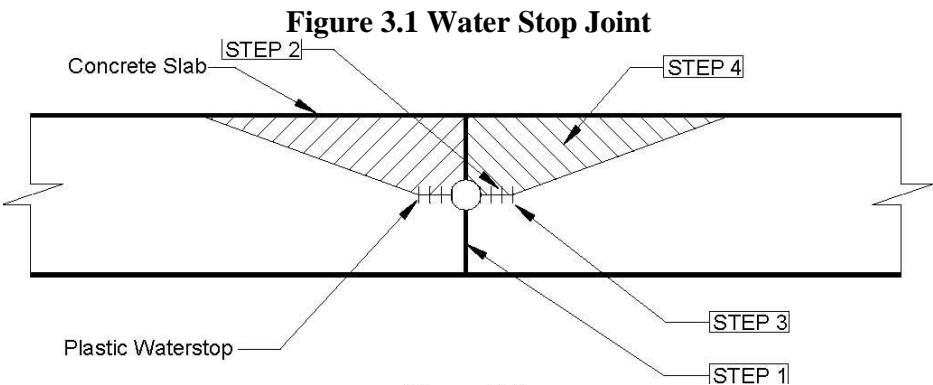
The spacing of the waterstop ties shall match the spacing of the adjacent reinforcing, but need not be spaced closer than 300mm (12in) on center.

**STEP 6**

Each piece of the waterstop shall be of maximum practicable length to provide a minimum number of splices.

**STEP 7**

Waterstops shall be installed so that half of the width will be embedded on each side of the joint. Care shall be exercised to ensure that the waterstop is completely embedded in void-free concrete.



Size	"A"	"B"	"C"	"D"	"E"	"F"
100mmX5mm	100mm	5mm	5mm	19mm	6mm	4
150mmX10mm	150mm	10mm	10mm	22mm	6mm	6
225mmX10mm	225mm	10mm	10mm	25mm	6mm	8

### **3.3.11 Joint Filler**

The joint filler shall be compressible cellular and resilient and shall not become brittle in cold weather.

Joint filler for use in potable water service water tanks shall be of granulated cork bound insoluble synthetic resin. For other water retaining structures the joint filler shall be granulated cork bound with bitumen. For all other structures joint filler is bitumen impregnated fiberboard.

### **3.3.12 Joint Sealer**

The joint sealer shall be non-degradable for its particular application. It shall be elastoplastic and shall possess a movement accommodation factor of at least 25 percent. Exposed joint sealer consists of polysulphide rubber based compound complying BS 4254. Concealed joint sealer shall consist of an oil based mastic compound. The joint shall have a minimum life expectancy of 15 years.

Where the joint sealer is to be contact with a protective coating as shown on the Drawings the Contractor shall satisfy the Engineer that the sealer and the protective coating are compatible.

The sealer shall be stored in accordance with the manufacturer's instructions and no sealer shall be used after its shelf life has elapsed.

To ensure non-adhesion to the back of the joint cavity a bond breaker tape is to be fixed where this is specified by the manufacturer of the sealer. Primer shall be obtained from the same manufacturer as the sealer.

### **3.3.13 Plasterwork**

#### **Mixing of Ingredients:**

Except where hand-mixing of small batches is approved by UN Habitat Engineer, mechanical mixers of an approved type shall be used for the mixing of plaster. Frozen, caked or lumped materials shall not be used. All tools, implements, vessels and surfaces shall at all times be kept scrupulously clean and strict precautions shall be taken to avoid the plaster or other materials becoming contaminated by pieces of partially set material which would tend to retard or accelerate the setting time.

#### **Preparation of Surfaces:**

All surfaces to be plastered shall be clean and free from dust, grease, loose or projecting mortar and all traces of salts are to be thoroughly sprayed with water, but all free water shall be allowed to dry and disappear from the surface before the plaster is applied.

Plastering shall not be commenced until the background has been suitably prepared.

Before plastering is commenced all junctions between differing materials shall be reinforced. This shall apply where walls join columns and beams, particularly where flush, and similar situations where cracks are likely to develop and as directed by UN habitat Engineer. The reinforcement shall consist of strip of non-metallic wire mesh 15cm wide which shall be plugged, or stapled as required at intervals of not exceeding 45cm at both edges or as per manufacturer instructions.

### **Environmental Conditions:**

Maintain a minimum temperature of 10 deg C (50 deg F) in spaces being plastered. Maintain adequate continuous ventilation in plastered spaces until plaster is dry. Protect plaster from freezing and too rapid drying. Do not plaster on rusted metal materials.

### **Plaster Materials:**

- 1 Portland cement.
- 2 Lime shall be special finishing hydrated lime.
- 3 Sand shall be clean, sharp, washed, natural and free from soluble salts and organic matter. Sand when dry shall pass No. 4 sieve.
- 4 Fiber shall be pure manila, glass or synthetic fiber, good quality 13 to 50mm (1/2 to 2in) in length, free from grease, oil, dirt and other impurities. No asbestos will be allowed.
- 5 Water shall be clean, fresh, potable water.

### **Plastering Execution:**

All plastering shall be executed in a neat workman like manner and internal and external angles shall be true, straight and plumb. Plaster shall be made good adjacent to wood or metal frames,

Skirting and around pipes or other fittings. The finish surface shall be true to shape and angle even in all directions, with straight arises free of cracks and trowel marks and to the satisfaction of UN Habitat Engineer.

On all external surfaces and on all smooth internal surfaces spatter dash of cement and sand which shall contain 450kgs of cement per one-meter cube of sand shall be applied and allowed to dry before rendering is commenced. All surfaces of walls shall be wetted immediately prior to applying the first coat of rendering and this shall be allowed to thoroughly dry out before the next coat is applied. The minimum thickness of this coat shall be 5mm applied with sufficient pressure to force it through and completely embed metal lath, or to form a good bond on concrete or masonry.

After the application of the spatter dash, the base coat shall be applied after the spatter dash coat has set but in no case before 24 hours after its application. The base coat shall be composed of 450kgs. of cement per one cubic meter of sand, this coat shall be applied with sufficient force to prevent air pockets and to secure a good bond with the wetted receiving surfaces, the thickness shall be designed approximately at 15mm. but governed by the guide screeds, curing with clean water shall continue for five consecutive days.

The Contractor shall from vertical guide screeds 10cm wide. The spacing shall not exceed 1.50 meters. The screeds shall be plumb and in the same plane with each other. The sides of the screed shall be left rough to bond with plaster, the surface shall be smooth.

The finishing coat shall only be applied after the base coat has seasoned, where cement plaster with a trowelled finish is specified; the finish coat shall be first floated to a true, even and wetted surface, then trowelled in a manner that will force the sand particles down in to the plaster and with the final trowelling leave the surface finished smooth and free from rough areas, trowel marks, checks or other blemishes. The finishing coat shall have a reasonably uniform thickness of approximately 3-5mm. curing with clean water shall continue for seven days.

Patching plasterwork shall conform to all of the above procedures and the finishing coat shall be flush with old plaster and of the same appearance. All patching shall be carried out under the RTO Engineer's

supervision and to his satisfaction, and according to manufacturer instructions.

The finished surface shall be true to shape and angle even in all directions, with straight rises free of cracks and trowel marks and to the entire satisfaction of the Engineer.

**Proportions of Internal and External Plaster:**

Internal and external plaster shall be composed of 450kg of cement per one cubic meter of sand. However the spatter dash application shall be composed of 450kg of cement per one cubic meter of sand.

Plastering shall be applied in three coats unless otherwise specified.

Screed shall be laid and ruled as necessary to allow for a total thickness of 15mm for external and internal plaster and the rendering shall be applied to the required thickness.

**Waterproofing Plaster:**

Mixing of plaster ingredients and preparation of surfaces to be plastered with waterproofing plaster shall be as specified above.

Rendering coat shall contain 450kg of ordinary Portland Cement per cubic meter of clean coarse salt free sand and with admixture of waterproofing compound as specified added in accordance with the printed instructions of the manufacture, shall be applied and the surfaces shall be trowelled hard smooth and allowed to dry. All surfaces of plastered areas shall be cured for minimum of 7 days.

**Cutting and Patching:**

Cut, patch, point-up and repair plaster as necessary to accommodate other work and to restore cracks dents and imperfections. Repair or replace work to eliminate blisters, excessive crazing and check cracking, dry outs, efflorescence, sweat-outs and similar defects, including areas of the work which do not comply with specified tolerances, and where bond to the substrate has failed.

## **DIVISION 4: FENCES, GATES, PAINTING, LINING, COATING AND MISCELLANEOUS WORKS**

### **4.1 Scope**

The work covered under this Division shall include supplying all materials, accessories equipment labor and supervision for erecting and installing all work items, complete in accordance with these Specifications or as shown on the Drawings.

The fences and gates items shall comprise the following:

- A. Chain link fence and gates.
- B. Miscellaneous metalwork: Ladder rungs, access ladders, frames and gratings, frames and plate covers, safety racks, steel guides for emergency stop planks, valve boxes, standard steel pipes and anchors, and all other items of miscellaneous manufactured metalwork where shown on the Drawings.

Except as otherwise provided in this Division of the Specification or as shown on the Drawings, all surfaces of fences and gates shall be treated, coated and painted in accordance with the requirements of painting, lining and coating section of these Specifications or as shown on the Drawings.

### **4.2 Chain Link Fence**

#### **4.2.1 General**

The fence shall be standard chain link fence with gates.

The Contractor supply all materials for the chain fence including fabric and barbed wire, posts, gates and accessories, cement, sand and coarse aggregate and other materials for complete erection of the fence, and padlocks.

The Contractor shall submit to UN habitat Engineer; for approved shop Drawings showing layout and details of construction and erection of fence and accessories required before starting any works.

#### **4.2.2 Materials**

- A. Chain Link Fabric:** The chain fabric shall be galvanized (zinc coated) steel fabric No. 11 gauge 3.05mm nominal wire diameter after coating.
- B. Fence Posts, Top Nails and Braces:** Except as otherwise provided in this paragraph, top rails and braces shall be galvanized (zinc coated) standard steel pipes.
- C. Gates and Gate Accessories:** Except as otherwise provided in this paragraph, gates and gate accessories shall be furnished on the entrance of the site.  
Gates shall be swing-type gates with zinc coated, round tubular frames. The gate fabric shall be the same as furnished under paragraph (a) above.  
Each gate leaf shall be equipped with one pair of malleable iron hinges not less than 75 mm (3") in



width that will provide full gate opening between gate posts. The hinges shall be designed to neither twist or turn under gate action and shall allow the gates to swing a full 180 degrees to lie along the parallel to the fence line. The gate latches shall be of the fulcrum type with center drop rod or of the plunger- bar type latches shall be constructed so that the center drop rod or plunger bar cannot be raised when locked.

Gate hinges latches, stops, keepers and other accessories shall be zinc- coated steel, ductile iron, or malleable iron, except that wire ties and clip bolts and nuts may be of aluminum alloy.

### 4.2.3 Erection

Brush, ground surface irregularities, and other obstacles which would interfere with proper erection of the fence shall be cleared and removed in advance of starting other fencing work. The Contractor shall perform all required excavating, backfilling, and compacting of backfill for posts and gate stops. Posts shall be plumb and in alignment. Post and gate stops shall be set in concrete as shown. Where the nature of the material to be excavated is such that the holes for the footings cannot be excavated to the required dimensions and the concrete placed directly against the surfaces of the excavation, forms shall be used for the concrete.

Concrete used as footing for fence posts shall be class B250 in accordance with Division 3 of these Specifications.

Gates areas of galvanizing shall be repaired in accordance with Section 4.4 of the Specifications. Except for painting damaged areas of galvanizing, no other painting of the fence is required.

## 4.3 Miscellaneous Metal works

### 4.3.1 General

Furnishing and installing miscellaneous metalwork in item 4.1.b includes all items specified in this Division complete with all bolts, nuts, washers and anchors required for the installation in accordance with the Specification.

### 4.3.2 Materials

**A. Structural Steel:** Steel shapes, plates, flat and round bars, and straps shall conform to ISO 630 or EN 10056-1, 2 or approved equivalent subjected to UN habitat Engineers approval.

**B. Nuts, Bolts and Anchors:** Bolts shall comply with ISO EN 4014, ISO EN 4016. Nuts shall comply with ISO EN 4032, ISO EN 4034 or approved equivalent subjected to UN habitat Engineers approval. The bolts shall have square heads or hexagon heads. The length of bolt threads for anchor bolts shall be as required and the length of bolt threads for all other bolts shall be in accordance with ISO 8992 or EN 26157-1.

**C. Ladders:** Outside ladders for water Tanks shall be of Galvanized steel or as specified in the Tender Documents. Ladders in side water tanks shall be of stainless steel or Aluminum or any other approved equivalent materials. Ladders, ladder accessories and ladder clearances shall conform to the requirements of OSHA. Ladders shall be either aluminum or stainless steel. Wall support brackets shall be Type 316 stainless steel spaced 2400mm (8ft) on center with Type 316 stainless steel fasteners. Where possible, the side rails shall be fastened to the floor with 13mm (1/2in) diameter Type 316

stainless steel expansion bolts.

- 1 Ladder cages shall be constructed as shown on the Tender Document Drawings.
- 2 Ladder safety post extensions shall be provided on all fixed ladders occurring below hatches and at locations indicated by the Drawings. The telescoping tubular safety post extension shall be secured to the ladder rungs with stainless steel fasteners and brackets.

**D. Steel Pipes:** Steel Pipes shall be according to the Contract Drawings.

**E. Fixed and Removable Handrail:** Except as otherwise provided in this paragraph or shown on the Drawings: handrails shall be galvanized (zinc coated) standard steel.

**F. Materials for miscellaneous metalwork and specifically, covered herein by detailed specifications shall be new and of good commercial quality approved by UN Habitat Engineer.**

### **4.3.3 Measurement**

Structural and fabrication steel shall be measured by the ton, complete in place and accepted.

All metal fixings such as bolts and anchors and nuts shall not be measured for direct payment, but shall be considered as subsidiary works born on the metal works.

Steel pipes and hand rail shall be measured by the linear meter complete in place and accepted.

## **4.4 Painting, Lining and Coating**

### **4.4.1 Scope of Work**

The work covered by this section of the Specifications comprises furnishing of all materials, cleaning surfaces and applying the paint, protective coatings and lining to all metal surfaces as tabulated and specified herein. Items or surfaces not required being painted or coated but which are adjacent to surfaces to be cleaned and painted shall be protected against contamination and damage during the cleaning and painting operations.

### **4.4.2 Painting and Coating**

#### **(i) General:**

Painting, coating and priming should be applied according to Tender Documents requirements and Manufacturer instructions.

Particular care shall be taken to prevent sand or cleaning agents from entering moving mechanical linkage joints, or other equipment or accessories.

Cleaning and painting operations shall be conducted in such a manner that dust or other contamination will not fall on wet, newly painted surfaces, and newly painted items shall not be moved until the paint is dry through.

All Contractor-applied coatings exposed to view, including any touch-up repair painting, shall present a uniform texture and color-matched appearance.

Any items or surfaces damaged or contaminated by the Contractor's operations shall be returned



to their original condition by and at the expense of the Contractor.

Before top coating any coated surfaces the Contractor shall re-clean any exposed surfaces and apply paint as necessary to restore damaged or defective surfaces to the specified condition.

Items which have been painted shall be handled with care and protected as necessary to preserve the coating in good condition.

Temporary or permanent welding for the convenience of the Contractor will not be permitted on areas where the welding will damage paint or other protective coatings unless the areas of coatings which would be damaged thereby are accessible for repairing and inspection.

Unless otherwise specified, the Contractor will not be required to disassemble machinery, equipment, or other metalwork for the purpose of painting the interiors.

The Contractor shall provide adequate ventilation, lighting, and the necessary safety equipment for the protection of the workmen during painting and coating operations.

**(ii) Materials:** All pigmented paints and primers shall be purchased in containers (recommended not larger than 19 Liter) or as packaged by the manufacturer. Containers shall be labeled with the material specification number, the batch number and the product expiring date.

Colors of finish paints shall be in accordance with paragraph V.

All colors and tints shall be prepared by the manufacturer. Tinting at the site will be permitted only with colors-in oil where specified for slight contrast between coats.

The Contractor should provide samples for UN habitat Engineer approval before ordering any material.

The Contractor should provide a certificate to ensure suitability and validity of the materials to be used for painting metal surfaces in contact with potable water have no hazardous effect on health.

**(iii) Sampling, Testing and Certification of Materials:**

The Contractor shall furnish two copies of all purchase orders for paint or related materials to the RTO Engineer. Copies of purchase orders shall be furnished far enough in advance of planned use so that samples, if required, will be available to UN habitat Engineer to allow a testing period of at least one week.

If required, manufacturer's certification for each type, batch or color of material shall state that the material is of the same composition as material which previously has been found to comply with the Specification. If requested, certifications shall also include the manufacturer's quality control test data.

The Contractor shall be responsible for the accuracy of all certifications submitted or data contained therein whether submitted by him, a manufacturer, a supplier, or a subcontractor.

Each sample, purchase order, and/or certification shall be identified with the material specifications, the batch and quantity represented, the specification number schedule, production and expiry date under which the material is to be used.

The Contractor shall purchase the total quantity of each material that is expected to be used in a reasonable length of time (i.e., 1 year, or the minimum specified storage stability period of the material) to avoid repetitive purchases that would impose additional testing. The costs and delays from additional testing required as a result of either unnecessary small purchases or rejection of the materials submitted shall be the responsibility of the Contractor.

**(iv) Preparation of Surfaces:** Surface preparation shall be in accordance with the following methods.

The method to be used for each item is indicated in the painting schedule.

Weld spatter, slag burrs, or other objectionable surface irregularities shall be removed or repaired before cleaning. Any contaminants to the paint coating, from cleaning operations or other sources shall be removed before the surfaces are painted. Cleaning solvent shall be mineral spirits or xylene except that xylene shall be used for surfaces which require coal-tar coatings. Cleaning cloths and solvents shall be discarded before they become contaminated to the extent that a greasy film would resin on the surface being cleaned. The coating shall be applied soon after preparation of the surface.

If rust forms or the surfaces become otherwise contaminated in the interval between cleaning and painting, or between coats of paint, re-cleaning will be required. Any coatings not required by and not shown in the painting tabulation shall be removed from the surfaces by suitable and effective means, unless otherwise directed. All surfaces not specifically covered herein shall be prepared by methods common to good practice for the particular surface.

All oil and grease shall be removed from steel surfaces to be painted by the use of clean solvent and clean, lint-free wiping material.

The following are the stages for preparation of surfaces prior to application of painting:

- a. Stage A:** Dirt, scum, and any other contamination shall be removed by solvent cleaning, water washing, or other effective means. Surfaces with gloss or semi-gloss paints shall be sanded lightly.
  - b. Stage B:** The surfaces shall be cleaned of all defective or damaged areas of existing paint, and of all loose rust, loose mill scale and other foreign substances by scraping, chipping, wire brushing, grit blasting, commercial grade sand blasting, or other effective means.
  - c. Stage C:** The surfaces shall be blast cleaned to base metal, using dry, hard, sharp, sand or steel grit, to produce a grey-etched surface free of all foreign substances.
  - d. Stage D:** Loose corrosion products or other foreign substances, if any, shall be removed by chipping, scraping, wire brushing, light etch blasting, or other equally effective means and the surface again cleaned with solvent. After the second solvent cleaning, the surfaces shall be treated with metal conditioner which has been diluted in acid-resistant containers with three parts (by volume) of clear water to one part (by volume) of metal conditioner. The solution shall be applied by spray, dip, or brush, allowed to remain on the metal surface for 2 to 10 minutes, then vigorously rinsed off with water (preferably hot), and the surface allowed to dry thoroughly. (Note: Solution is strongly acidic and proper safety precautions shall be exercised in handling and use).
- (v) Application:** Materials shall be thoroughly mixed at the time of application. Surfaces shall be clean and, unless otherwise specified, free from moisture at the time of application. Items of metalwork to be painted that are not thoroughly dry at the time of paint application shall be heated to a sufficient temperature (27 C°) to dry off any moisture present before paint is applied. Heating, if used, shall be by a method which does not bring products of combustion into contact with surfaces being coated.

Effective means shall be provided for removing free oil and moisture from the air supply lines of all spraying equipment. Care shall be exercised during spray application to hold the nozzle sufficiently close to the surfaces being painted to avoid excessive evaporation of the volatile constituents and loss of material into the air, or the bridging over of crevices and corners. Spray equipment shall be equipped with mechanical agitators, pressure gauges, and pressure regulators. Nozzle pressure consistent with acceptable finish results shall be employed when spray painting.

Each coat shall be applied in such a manner as to produce an even film of uniform thickness which will completely cover irregularities, fill crevices, and be tightly bonded to the substrate or previous coat. Each coat shall be free from runs, pinholes, sags, laps, brush marks, voids, and

other defects. Each coat shall be allowed to dry or to harden before the succeeding coat is applied.

The thickness of steel surfaces shall be measured by approved gauges and shall not be less than the minimum specified thickness at any point on the coating. Acceptance will be based on specified coverage's, total dry-film thickness as measured by an Elcometer, Mikrotest, or other suitable dry-film thickness gauge, after the complete paint system has thoroughly dried.

If necessary to improve application properties, cold-applied paints may be heated by means of a hot-water bath to temperatures not exceeding 38 C°. Paint shall not be applied when the temperature of the item to be painted or of the surrounding air is under 7 C° except that vinyl resin paints shall not be applied when metal or air temperatures are above 43 C° or below 4 C°. Painting shall proceed only when the humidity and the temperatures of atmosphere and of surfaces to be painted are such that evaporation rather than condensation will result. Brush coats may be applied by the conventional brushing procedure, or the paint may be delivered to the surface in a fluid stream by means of spray equipment employing air pressure only on the material and the paint then spread immediately by brushing to a smooth uniform coating.

Unless otherwise specified, coatings on metalwork, part of which is too embedded after being coated, shall extend approximately 15cm into the concrete.

Red lead priming paint, enamels, and oil-based paints may be thinned if necessary to permit satisfactory application, in which event mineral spirits shall be used and the amount of thinner shall be kept to a minimum but in no event shall exceed 0.12 liters per liter of paint.

Tinting, where required for color contrast, shall be accomplished by using not more than 23g of tinting color per liter of paint. Methods of preparing and applying paints and coatings not included in this Specification shall be in accordance with the manufacturer's instructions.

## **DIVISION 5: PIPES MATERIALS**

### **5.1 Work Included**

This Division governs the Fabrication of Ductile, Steel, PVC pipes in the diameters and pressure classes required under the Tender Documents requirements.

Pipes, fittings, accessories, and specials including protective coatings and joints materials shall be according to the latest editions of Standards and References specified in this Specifications or shall be equivalent and compatible to these Standards and References subjected to third party accredited testing laboratory.

### **5.2 Submittals**

The Contractor shall submit:

- A. Manufacture valid quality certificates ISO or equivalent.
- B. Detailed manufacturer's proposals for pipe and fitting manufacture, coating, lining and catalogs.
- C. Certified copies of manufacturers' quality control test results and reports.
- D. Certified copies of compliance for steel plate, rubber rings, coating and lining materials and other components of finished pipes and fittings.
- E. Instruction manual.

With every consignment of pipes, fittings, accessories, and specials delivered under this Contract, the Contractor shall furnish a certificate worded as follows:

“This is to certify that the pipes, fittings, accessories, and specials delivered in this consignment comply with the required specifications and Standards”.

No payment shall be made in respect of any consignment of pipes and specials, which is not accompanied by such certificate.

### **5.3 Quality of Pipes, Fittings, Accessories and Specials**

The Contractor shall have a Quality Assurance System including:

- A. Records of tests performed by manufacturers on materials brought in.
- B. Sequential numbering of pipes and fittings.
- C. All goods or materials supplied by the Contractor shall be new of first class quality and of the best workmanship and design.

The quality assurance system records shall be open to inspection by the Engineer, and shall be maintained in such a way that any pipe or fittings is identified by a unique sequential production number and can be uniquely related to each stage of its manufacture including material origin and quality, date and time of each operation, operator(s) involved and results of relevant quality tests. Testing of materials should be according to the Relevant Standards. The Contractor shall pass a complete set of the quality assurance records to the Engineer.

D. Pipes, fittings, accessories, and specials including their protective coating and joints materials, that will or may come into contact with potable water shall not constitute a toxic hazards, shall not support microbial growth, shall not cause taste or odor, cloudiness or discoloration of water, and shall be approved by a recognized certifying authorities as being suitable for use in portable water supply systems.

E. Pipes, fittings, accessories and specials are recommended to be furnished by a single Manufacturer.

## **5.4 Steel Pipes**

Pipes shall be manufactured as high tensile, welded, with normal working pressure for pipes and fittings etc.

The Contractor shall be responsible for ensuring that the pipe ends are suitably prepared in the works or in the field for each joint, according to the jointing method to be used in each case.

The manufacturer as required by a compatible standard shall supply a product data.

### **5.4.1 Fittings**

All fittings, bends, tees and tapers shall be manufactured of seamless or butt-welded steel pipes and shall comply with the relevant parts of ISO 3419 or EN 10224 (Draft), and EN 10253-1,2.

The wall thickness of fittings shall be the same as that of pipes as a minimum.

All fittings shall be internally cement lined at factory and externally coated with polyethylene.

The flanges shall be according to ISO 7005-1 or EN 1092-1. The working pressure shall be PN 10, PN 16.

### **5.4.2 Internal Lining**

The steel pipes and fittings shall have an internal cement mortar lining applied centrifugally. The lining shall be odorless, tasteless and suitable for conveyance of chlorinated potable water, using Portland cement.

The sand shall consist of inert granular material having durable uncoated grains.

The cement mortar lining shall cover the whole internal surface at the spigot end. At the socket end the cement mortar lining shall be stopped in the bevel of the socket at the jointing ring.

The internal unlined wall of the sockets shall be protected by suitable non-tainting approved bituminous or epoxy paint, applied to a properly prepared substrate.

The internal lining of joints shall be at least equal to that approved for pipes, and shall be applied by hand in the works after all welding; machining and fettling operations have been completed.

## **5.5 Steel Doors**

### **5.5.1 General**

Steel doors shall be manufactured in accordance with detail drawings and subject to UN Habitat Engineer's approval. Full workshop drawings for doors shall be submitted to UN habitat Engineer well in advance of delivery to site for his approval.

### **5.5.2 Ironmongery for Steel Doors**

The Contractor shall provide and fix the ironmongery complete, including all necessary screws, bolts, plugs and other fixings. The use nails of fixing shall not be allowed.

All ironmongery shall be of first quality and according to as quoted below: BS 455-1975: Lock and latches for doors schedule for sizes and dimensions. BS 7352: Hinges. BS 1228-1945: Door bolts-iron, steel and non-ferrous.

The Contractor shall be required to submit for approval samples of all items of ironmongery he proposes to use.

### **5.5.3 Measurements and Payment**

Doors shall be measured and paid for by the number. The Unit price shall include for all hardware; locks; all furniture listed in door schedules such as push plates, door closers and all ironmongery; and painting in accordance with Specifications.



## **DIVISION 6: VALVES**

### **6.1 General**

All valves and accessories are recommended to be furnished by a single manufacturer and should be subjected to UN habitat Engineers approval before ordering the valves. Valves shall be compatible with pipes and fittings specified in drawings. Compatibility should be the Contractor's responsibility at his own expense, and should be approved by a third party accredited by Engineering Syndicate.

Two copies of manufacturing and installation manuals shall be provided at time of materials delivering.

Bolts, nuts, rubber seals (joint rings), gaskets, and flanges shall be in accordance with standards specified in Division 5.

Valves of different types in general can be listed as follows:

1. Gate valves and appurtenances for yard piping.
2. Gate valves for inside service.
3. Ball valves.
4. Check valves (None Return Valve).
5. Butterfly valve.
6. Fire hydrants.
7. Surge relief valves.
8. Quick connect couplings.
9. Service clamps.
10. Pressure gauges.
11. Flap valves.
12. Expansion joints and dressers.
13. Air release and vacuum valves.
14. Propeller flow meters.
15. Sluice gate.
16. Float valve.
17. Flow control valve.
18. Altitude valve.
19. Pressure reducing valve.
20. Strainers.
21. Water meter.
22. Globe Valves

## **6.2 Submittals**

The contractor shall submit the following:

- .     o Assembly drawings.
- .     o Manufacturer Valid quality certifications ISO or equivalent.
- .     o Certified copies of Manufacturer quality control Test results and reports.
- .     o Assembly shop drawings.
- .     o Instruction manuals.
- .     o Catalogues.
- .     o With every consignment of valves, accessories and specials delivered under this Contract, the

Contractor shall furnish a certificate worded as follows:

“This is to certify that the valves, accessories and specials delivered in this consignment comply with the required specifications and Standards”.

## **6.3 Valve Coatings**

The internal and external surfaces of valves shall be prepared and coated with epoxy paint. The final coat shall be applied to external surfaces after installing the valves.

## **6.4 Works Tests**

All valves shall be hydrostatically tested at the place of manufacture. The Contractor shall supply a certificate stating that the valves supplied have satisfactorily passed the tests.

All valves shall be subjected to pressure test in accordance with ISO 5208 and shall be drop tight.

## **6.5 Packing**

All valves shall be securely packed in crates or boxes for protection against damage during transit, and shall be accompanied by the materials necessary to secure all flanges to adjacent pipe work. These materials shall also be suitably packed and shall be stored away from sunlight at all times.



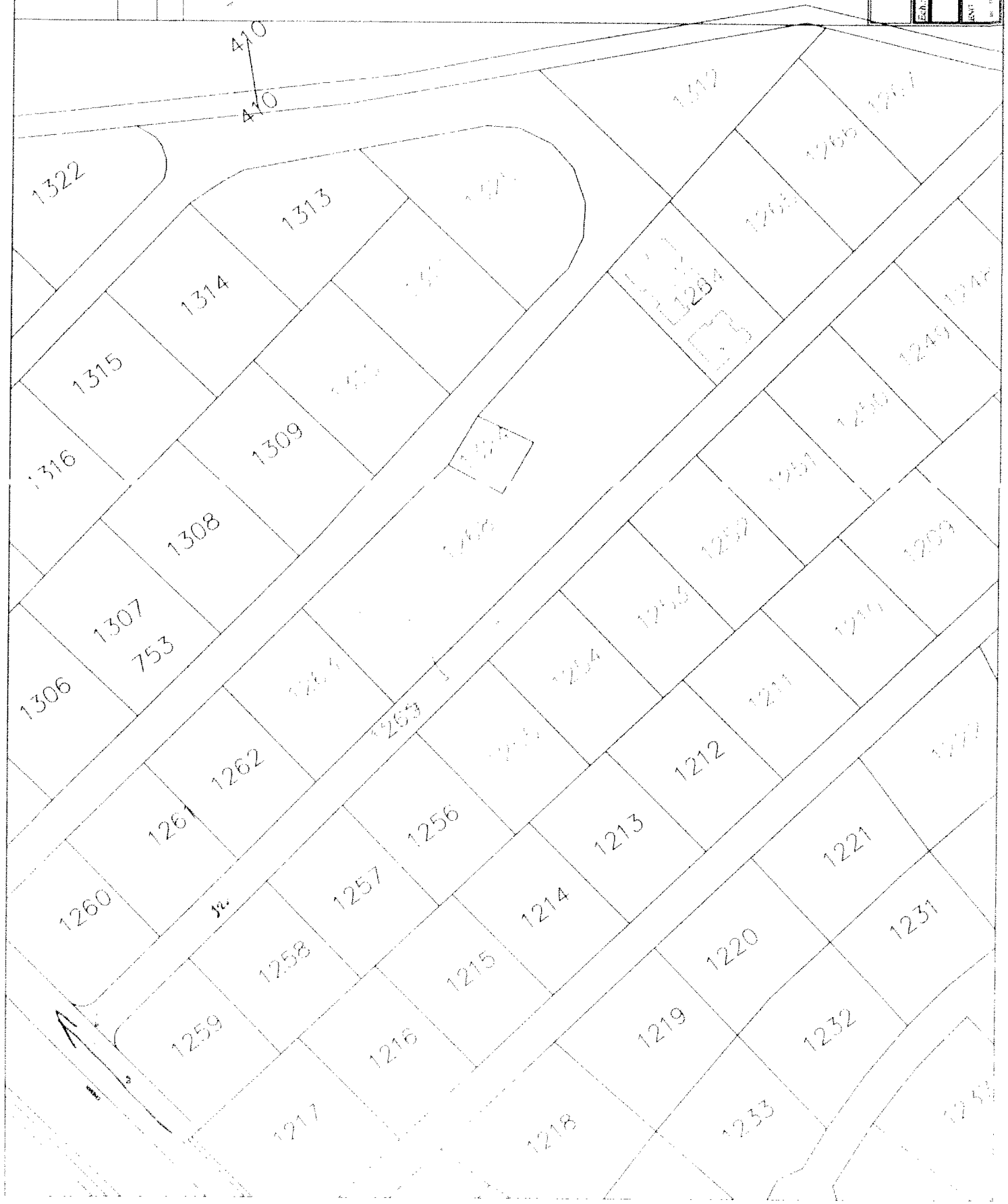
ANSARIEH WATER TOWER

Ansarieh

Scale: 1:100

100' 165'

ENG. ALI KAWTHARANI - ENG. HUSSEIN MATAR  
AMMAN, JORDAN



## Section 3b: Related Services

Further to the Scope of Works, BOQ, Technical Specifications and Drawing in the preceding Table, Bidders are requested to take note of the following additional requirements, conditions, and related services pertaining to the fulfillment of the requirements:

Delivery Term [INCOTERMS 2010]	<input checked="" type="checkbox"/> DAP, Delivery at Place
Exact Address of Delivery/Installation Location	Ansarieh, Lebanon
Mode of Transport Preferred	<input checked="" type="checkbox"/> AIR <input checked="" type="checkbox"/> LAND
Delivery Date	Sixty (60) working days from contract signature date
Inspection upon delivery	Refer to Section 3a – Scope of Works, BOQ, Technical Specifications and Drawing
Installation Requirements	Refer to Section 3a – Scope of Works, BOQ, Technical Specifications and Drawing
Testing Requirements	Refer to Section 3a – Scope of Works, BOQ, Technical Specifications and Drawing
Scope of Training on Operation and Maintenance	Refer to Section 3a – Scope of Works, BOQ, Technical Specifications and Drawing
Commissioning	Refer to Section 3a – Scope of Works, BOQ, Technical Specifications and Drawing
Technical Support Requirements	Refer to Section 3a – Scope of Works, BOQ, Technical Specifications and Drawing
Payment Terms	<p>The payment currency is USD, and the payment will be made as follows:</p> <p>First Payment: Fifteen Percent (15%) upon receiving updated work plan with timelines.</p> <p>Second Payment: Forty Percent (40%) upon completion of fifty percent (50%) of works (as per the approved work plan and upon validation from the supervising engineer).</p> <p>Final Payment: Forty Five Percent (45%) upon completion of all works (upon validation from the supervising engineer).</p> <p>Within thirty (30) calendar days after the date of the satisfactory certificate of completion for the respective installation works and testing of goods issued by the UNDP assigned entity.</p>
Conditions for Release of Payment	<input checked="" type="checkbox"/> Inspection upon arrival at destination <input checked="" type="checkbox"/> Installation <input checked="" type="checkbox"/> Testing

After-sale services required	<input checked="" type="checkbox"/> Technical Support
All documentations, including catalogs, instructions and operating manuals, shall be in this language	<input checked="" type="checkbox"/> English

## Section 4: Bid Submission Form<sup>3</sup>

***(This should be written in the Letterhead of the Bidder. Except for indicated fields, no changes may be made in this template.)***

---

Insert: Location

Insert: Date

To: Luca Renda, UNDP Country Director

Dear Sir/Madam:

We, the undersigned, hereby offer to supply the goods and related services required for **Procurement of Civil Works of an Elevated Water Tower and Mechanical Room in Ansarieh, Lebanon** in accordance with your Invitation to Bid dated **April 3, 2014**. We are hereby submitting our Bid, which includes the Technical Bid and Price Schedule.

We hereby declare that:

- a) All the information and statements made in this Bid are true and we accept that any misrepresentation contained in it may lead to our disqualification;
- b) We are currently not on the removed or suspended vendor list of the UN or other such lists of other UN agencies, nor are we associated with, any company or individual appearing on the 1267/1989 list of the UN Security Council;
- c) We have no outstanding bankruptcy or pending litigation or any legal action that could impair our operation as a going concern; and
- d) We do not employ, nor anticipate employing, any person who is or was recently employed by the UN or UNDP.

We confirm that we have read, understood and hereby fully accept the Schedule of Requirements and Technical Specifications describing the duties and responsibilities required of us in this ITB, and the General Terms and Conditions of UNDP's Standard Contract for this ITB.

We agree to abide by this Bid for **120 days**.

We undertake, if our Bid is accepted, to initiate the supply of goods and provision of related services not later than the date indicated in the Data Sheet.

We fully understand and recognize that UNDP is not bound to accept this Bid, that we shall bear all costs associated with its preparation and submission, and that UNDP will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the evaluation.

We remain,

Yours sincerely,

---

<sup>3</sup> No deletion or modification may be made in this form. Any such deletion or modification may lead to the rejection of the Bid.



Authorized Signature *[In full and initials]*: \_\_\_\_\_

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

Name of Firm: \_\_\_\_\_

Contact Details: \_\_\_\_\_

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*[Please mark this letter with your corporate seal, if available]*

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## Section 5: Documents Establishing the Eligibility and Qualifications of the Bidder

### Bidder Information Form<sup>4</sup>

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

ITB No.: LEB/CO ITB/22/14

Page \_\_\_\_\_ of \_\_\_\_\_ pages

1. Bidder's Legal Name <i>[insert Bidder's legal name]</i>		
2. In case of Joint Venture (JV), legal name of each party: <i>[insert legal name of each party in JV]</i>		
3. Actual or intended Country/ies of Registration/Operation: <i>[insert actual or intended Country of Registration]</i>		
4. Year of Registration in its Location: <i>[insert Bidder's year of registration]</i>		
5. Countries of Operation	6. No. of staff in each Country	7. Years of Operation in each Country
8. Legal Address/es in Country/ies of Registration/Operation: <i>[insert Bidder's legal address in country of registration]</i>		
9. Value and Description of Top three (3) Biggest Contract for the past five (5) years		
10. Latest Credit Rating (Score and Source, if any)		
11. Brief description of litigation history (disputes, arbitration, claims, etc.), indicating current status and outcomes, if already resolved.		
12. Bidder's Authorized Representative Information  Name: <i>[insert Authorized Representative's name]</i> Address: <i>[insert Authorized Representative's Address]</i> Telephone/Fax numbers: <i>[insert Authorized Representative's telephone/fax numbers]</i> Email Address: <i>[insert Authorized Representative's email address]</i>		
13. Are you in the UNPD List 1267.1989 or UN Ineligibility List ? <input type="checkbox"/> YES or <input type="checkbox"/> NO		

<sup>4</sup> The Bidder shall fill in this Form in accordance with the instructions. Apart from providing additional information, no alterations to its format shall be permitted and no substitutions shall be accepted.

*B*

14. Attached are copies of original documents of:

- ☐ All eligibility document requirements listed in the Data Sheet
- ☐ If Joint Venture/Consortium – copy of the Memorandum of Understanding/Agreement or Letter of Intent to form a JV/Consortium, or Registration of JV/Consortium, if registered
- ☐ If case of Government corporation or Government-owned/controlled entity, documents establishing legal and financial autonomy and compliance with commercial law.

## Joint Venture Partner Information Form (if Registered)<sup>5</sup>

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

ITB No.: LEB/CO ITB/22/14

Page \_\_\_\_\_ of \_\_\_\_\_ pages

1. Bidder's Legal Name: <i>[insert Bidder's legal name]</i>		
2. JV's Party legal name: <i>[insert JV's Party legal name]</i>		
3. JV's Party Country of Registration: <i>[insert JV's Party country of registration]</i>		
4. Year of Registration: <i>[insert Party's year of registration]</i>		
5. Countries of Operation	6. No. of staff in each Country	7. Years of Operation in each Country
8. Legal Address/es in Country/ies of Registration/Operation: <i>[insert Party's legal address in country of registration]</i>		
9. Value and Description of Top three (3) Biggest Contract for the past five (5) years		
10. Latest Credit Rating (if any) :Click here to enter text.		
1. Brief description of litigation history (disputes, arbitration, claims, etc.), indicating current status and outcomes, if already resolved. Click here to enter text.		
13. JV's Party Authorized Representative Information Name: <i>[insert name of JV's Party authorized representative]</i> Address: <i>[insert address of JV's Party authorized representative]</i> Telephone/Fax numbers: <i>[insert telephone/fax numbers of JV's Party authorized representative]</i> Email Address: <i>[insert email address of JV's Party authorized representative]</i>		
14. Attached are copies of original documents of: <i>[check the box(es) of the attached original documents]</i> <input type="checkbox"/> All eligibility document requirements listed in the Data Sheet <input type="checkbox"/> Articles of Incorporation or Registration of firm named in 2. <input type="checkbox"/> In case of government owned entity, documents establishing legal and financial autonomy and compliance with commercial law.		

<sup>5</sup> The Bidder shall fill in this Form in accordance with the instructions. Apart from providing additional information, No alterations to its format shall be permitted and no substitutions shall be accepted.



## Section 6: Technical Bid Form<sup>6</sup>

Procurement of Civil Works of an Elevated Water Tower and Mechanical Room in Ansarieh,  
Lebanon

Reference: LEB/CO ITB/22/14

Name of Bidding Organization / Firm:	
Country of Registration:	
Name of Contact Person for this Bid:	
Address:	
Phone / Fax:	
Email:	

### SECTION 1: EXPERTISE OF FIRM/ ORGANISATION

*This section should fully explain the Bidder's resources in terms of personnel and facilities necessary for the performance of this requirement.*

**1.1 Brief Description of Bidder as an Entity:** Provide a brief description of the organization / firm submitting the Bid, its legal mandates/authorized business activities, the year and country of incorporation, and approximate annual budget, etc. Include reference to reputation, or any history of litigation and arbitration in which the organisation / firm has been involved that could adversely affect or impact the delivery of goods and/or performance of related services, indicating the status/result of such litigation/arbitration.

**1.2. Financial Capacity:** Based on the latest Audited Financial Statement (Income Statement and Balance Sheet) describe the financial capacity (liquidity, stand-by credit lines, etc.) of the bidder to engage into the contract. Include any indication of credit rating, industry rating, etc.

**1.3. Track Record and Experiences:** Provide the following information regarding corporate experience within at least the last five (5) years which are related or relevant to those required for this Contract.

Name of project	Client	Contract Value	Period of activity	Types of activities undertaken	Status or Date Completed	References Contact Details (Name, Phone, Email)

<sup>6</sup> Technical Bids not submitted in this format may be rejected.

3

## SECTION 2 - SCOPE OF SUPPLY, TECHNICAL SPECIFICATIONS, AND RELATED SERVICES

*This section should demonstrate the Bidder's responsiveness to the specification by identifying the specific components proposed, addressing the requirements, as specified, point by point; providing a detailed description of the essential performance characteristics proposed; and demonstrating how the proposed bid meets or exceeds the specifications.*

**2.1. Scope of Supply:** Please provide a detailed description of the goods to be supplied, indicating clearly how they comply with the technical specifications required by the ITB (see below table); describe how the organisation/firm will supply the goods and any related services, keeping in mind the appropriateness to local conditions and project environment.

Item No.	Description/ Specification of Goods	Source/ Manufacturer	Country of Origin	Qty	Quality Certificate/ Export Licences, etc. (indicate all that applies and if attached)

*A supporting document with full details may be annexed to this section*

**2.2. Technical Quality Assurance Mechanisms:** The bid shall also include details of the Bidder's internal technical and quality assurance review mechanisms, all the appropriate quality certificates, export licenses and other documents attesting to the superiority of the quality of the goods and technologies to be supplied.

**2.3. Reporting and Monitoring:** Please provide a brief description of the mechanisms proposed for this project for reporting to the UNDP and partners, including a reporting schedule.

**2.4. Subcontracting:** Explain whether any work would be subcontracted, to whom, how much percentage of the work, the rationale for such, and the roles of the proposed sub-contractors. Special attention should be given to providing a clear picture of the role of each entity and how everyone will function as a team.

**2.5. Risks / Mitigation Measures:** Please describe the potential risks for the implementation of this project that may impact achievement and timely completion of expected results as well as their quality. Describe measures that will be put in place to mitigate these risks.

**2.6 Implementation Timelines:** The Bidder shall submit a Gantt Chart or Project Schedule indicating the detailed sequence of activities that will be undertaken and their corresponding timing.

**2.7. Partnerships (Optional):** Explain any partnerships with local, international or other organizations that are planned for the implementation of the project. Special attention should be given to providing a clear picture of the role of each entity and how everyone will function as a team. Letters of commitment from partners and an indication of whether some or all have

successfully worked together on other previous projects is encouraged.

2.8. Anti-Corruption Strategy (Optional): Define the anti-corruption strategy that will be applied in this project to prevent the misuse of funds. Describe the financial controls that will be put in place.

2.9 Statement of Full Disclosure: This is intended to disclose any potential conflict in accordance with the definition of "conflict" under Section 4 of this document, if any.

2.10 Other: Any other comments or information regarding the bid and its implementation.

### SECTION 3: PERSONNEL

**3.1 Management Structure:** Describe the overall management approach toward planning and implementing the contract. Include an organization chart for the management of the contract, if awarded.

**3.2 Staff Time Allocation:** Provide a spreadsheet will be included to show the activities of each personnel involved in the implementation of the contract. Where the expertise of the personnel is critical to the success of the contract, UNDP will not allow substitution of personnel whose qualifications had been reviewed and accepted during the bid evaluation. (If substitution of such a personnel is unavoidable, substitution or replacement will be subject to the approval of UNDP. No increase in costs will be considered as a result of any substitution).

**3.3 Qualifications of Key Personnel.** Provide the CVs for key personnel (Team Leader, Managerial and general staff) that will be provided to support the implementation of this project. CVs should demonstrate qualifications in area of expertise relevant to the Contract. Please use the format below:

<b>Name:</b>		
<b>Role in Contract Implementation:</b>		
<b>Nationality:</b>		
<b>Contact information:</b>		
<b>Countries of Relevant Work Experience:</b>		
<b>Language Skills:</b>		
<b>Education and other Qualifications:</b>		
<b>Summary of Experience:</b> <i>Highlight experience in the region and on similar projects.</i>		
<b>Relevant Experience (From most recent):</b>		
<b>Period: From – To</b>	<b>Name of activity/ Project/ funding organisation, if applicable:</b>	<b>Job Title and Activities undertaken/Description of actual role performed:</b>
<i>e.g. June 2010-January 2011</i>		
<i>Etc.</i>		
<i>Etc.</i>		
<b>References (minimum of 3):</b>	<i>Name</i> <i>Designation</i> <i>Organization</i> <i>Contact Information – Address; Phone; Email; etc.</i>	

**Declaration:**

I confirm my intention to serve in the stated position and present availability to serve for the term of the proposed contract. I also understand that any wilful misstatement described above may lead to my disqualification, before or during my engagement.

\_\_\_\_\_  
Signature of the Nominated Team Leader/Member

\_\_\_\_\_  
Date Signed

## Section 7: Price Schedule Form<sup>7</sup>

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The Bidder is required to prepare the Price Schedule as indicated in the Instruction to Bidders.

The format of the BOQ should be used in preparing the Price Schedule.

The price of civil works shall be quoted as a total lump sum for the construction of the civil works.

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<sup>7</sup> No deletion or modification may be made in this form. Any such deletion or modification may lead to the rejection of the Bid.

Project	ANSARIEH WATER TOWER		UN- Habitat
Scope:	Bill of Quantities for the water tower and the mechanical room	Date: April 2014	File: WASH- ST-ZA-AN.WT- BOQ
Job:	WASH- ST-ZA- AN.WT	Rev: 01	Sheet: BL01
Plot:	1268	Phase: Tender	Capacity: 300 m3 as per drawings
SITE CONSTRUCTION			

Div.	Item No.	Description of Material	Unit	Qty.	Unit Price US\$	Total Price US\$
	<b>A</b>	<b><u>Excavation and Earthworks</u></b>				
	1	Excavate, remove debris, transport and prepare for Water Tower and mechanical room's foundation to a depth of -2.65m under Water Tower and -0.7m under mechanical room.	m <sup>2</sup>	160		
	<b>B</b>	<b><u>Cast in Place Concrete</u></b>				
	1	Blinding 150mm thick	m <sup>2</sup>	160		
		Reinforced concrete in ordinary Portland cement 30MPa (reinforcement measured separately) .				
	2	Columns, Walls, Slabs, Foundations, Tie Beams	m <sup>3</sup>	332		
	<b>C</b>	<b><u>Concrete Reinforcement</u></b>				
		High yield reinforcement bars (fy=500Mpa)				
	1	Steel Reinforcement	Ton	35		
	<b>D</b>	<b><u>Contractors / Workmanship</u></b>				
		Install and cast all RC structures around 332m <sup>3</sup> of RC.				
	1	Tie Beams at Foundation	m	42		
	2	Tie Beams Upper Levels	m	55		
	3	Trapezoidal Columns	m	60		
	4	Rectangular Columns	m	60		
	5	Slabs, Walls and Footings	m <sup>3</sup>	245		
	6	Upstands and Parapets	m	45		
	7	Shop Drawings- Detailed structural and Architectural drawings	LS	1		
	<b>E</b>	<b><u>Concrete Masonry Unit Walls</u></b>				
		Supply and install non load bearing, precast <b>HOLLOW</b> concrete masonry walling; with bedding mortar including pointing and cleaning, reinforced concrete bond beams & columns for high walls, doors sills and jambs, and all necessary material and accessories; as per the specifications and drawings.				
	1	Concrete Hollow masonry unit wall (Unit: 400 x 200; 200 mm thick) for mechanical room walls.	m <sup>2</sup>	20		

Project	ANSARIEH WATER TOWER		UN- Habitat
Scope:	Bill of Quantities for the water tower and the mechanical room	Date: April 2014	File: WASH- ST-ZA-AN.WT- BOQ
Job:	WASH- ST-ZA- AN.WT	Rev: 01	Sheet: BL01
Plot:	1268	Phase: Tender	Capacity: 300 m3 as per drawings
SITE CONSTRUCTION			

Div.	Item No.	Description of Material	Unit	Qty.	Unit Price US\$	Total Price US\$
	<b>F</b>	<b><u>Cementitious waterproofing</u></b>				
		Isolation work for reservoir using cementitious materials and PU paint. Work includes removing the 6mm steel bars with grinder and making small hole then filling the hole with cementitious material. Filling the reservoir with water should be done before isolation work.				
	1	Isolation Works	LS	1		
	2	Water Stop and Tie Rods and all fittings	m	42		
	<b>G</b>	<b><u>Portland Cement Plaster</u></b>				
		Prepare surfaces, spatterdash, supply and apply ordinary portland cement and sand plaster coat to a minimum thickness of 15 to 20 mm, include metal lath 1 mm thick having approximately 50 nets per m <sup>2</sup> where required, and all expanded metal angle and stop beads at corners and abutments				
	1	Plasters	m <sup>2</sup>	930		
	<b>H</b>	<b><u>Paints</u></b>				
	1	Prepare surfaces, supply and apply 2 coats of RedSeal Exterior Latex Flat paint (red brick color) for both Water Reservoir and Mechanical room external faces.	m <sup>2</sup>	400		
	2	Prepare surfaces, supply and apply 2 coats of RedSeal Exterior Latex Flat paint (medium grey color) for Water Tower vertical elements.	m <sup>2</sup>	150		
	3	Prepare surfaces, supply and apply 2 coats of Accolade Interior Enamel Flat paint (light grey color) for Water tower internal Tank.	m <sup>2</sup>	350		
	4	Prepare surfaces, supply and apply 2 coats of Emulsion Interior paint (white color) inside mechanical room.	m <sup>2</sup>	30		
	<b>I</b>	<b><u>Piping</u></b>				
		Supply and installation of pipes, insulation where indicated, anti-corrosion protection, fitting, bands, hangers, junctions, tees, supports, sleeves, flexibles wherever there is expansion joint as indicated on drawings and all necessary accessories, labor, tools, transport, testing, one year guarantee, all overhead expenses and profit.				
	1	Installing 5" Galvanized pipes (3 pipes, one for inlet, one for outlet, and one for overflow )	m	50		

Project	ANSARIEH WATER TOWER		UN- Habitat
Scope:	Bill of Quantities for the water tower and the mechanical room	Date: April 2014	File: WASH- ST-ZA-AN.WT- BOQ
Job:	WASH- ST-ZA- AN.WT	Rev: 01	Sheet: BL01
Plot:	1268	Phase: Tender	Capacity: 300 m3 as per drawings
SITE CONSTRUCTION			

Div.	Item No.	Description of Material	Unit	Qty.	Unit Price US\$	Total Price US\$
	J	<b>Valves &amp; Pumps</b>				
		Supply and installation of valves including: union, fixing, insulation where needed, all necessary accessories, labor, tools, transport, testing, one year guarantee, all overhead expenses and profit.				
	1	Installation of 5 gate valves, and 1 pressure relief valve, 1 centrifugal pump 1HP	LS	1		
	K	<b>Metal Works</b>				
		Supply and install painted galvanized steel ladder using epoxy water resistant paint comprising 50 x 10 mm steel flat bars bolted to R.C slabs and walls as main support, 20 mm diameter galvanized steel pipes welded to flat bars as stair steps, flanges, expansion bolts, anchors and all necessary material and accessories; as per the drawings.				
	1	Galvanized steel ladder, refer to drawings	m	20		
	2	Roof Access Cover with all fittings and accessories (handles- expansion bolts- support arm- etc..), as per drawings	LS	2		
	3	Internal Steel Ladder, see drawings	m	4		
	4	Steel Door for Technical Room	LS	1		
		<b>Total Price US\$ (DAP, Customs Free, exclusive of VAT)</b>				
		<b>VAT (10%) US\$ (if applicable)</b>				
		<b>Grand Total Price US\$ (DAP, Customs Free, inclusive of VAT)</b>				



## Section 8: FORM FOR BID SECURITY

***(This must be finalized using the official letterhead of the Issuing Bank. Except for indicated fields, no changes may be made in this template.)***

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To: UNDP  
*[Insert contact information as provided in Data Sheet]*

WHEREAS *[name and address of Contractor]* (hereinafter called "the Bidder") has submitted a Bid to UNDP dated *[Click here to enter a date.]*, to deliver goods and execute related services for *[indicate ITB title]* (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 in the event that the Bidder:

- a) Fails to sign the Contract after UNDP has awarded it;
- b) Withdraws its Bid after the date of the opening of the Bid;
- c) Fails to comply with UNDP's variation of requirement, as per ITB Section F.3; or
- d) Fails to furnish Performance Security, insurances, or other documents that UNDP may require as a condition to rendering the contract effective.

AND WHEREAS we have agreed to give the Bidder such this Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Bidder, up to a total of *[amount of guarantee]* *[in words and numbers]*, such sum being payable in the types and proportions of currencies in which the Price Bid 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 until 30 days after the date of validity of the bids.

### SIGNATURE AND SEAL OF THE GUARANTOR BANK

Date .....

Name of Bank .....

Address .....

## Section 9: FORM FOR PERFORMANCE SECURITY<sup>8</sup>

*(This must be finalized using the official letterhead of the Issuing Bank. Except for indicated fields, no changes may be made in this template.)*

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To: UNDP

*[Insert contact information as provided in Data Sheet]*

WHEREAS *[name and address of Contractor]* (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. *Click to enter* dated *Click to enter*, to deliver the goods and execute related services *Click here to enter text*. (hereinafter called "the Contract"):

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract:

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, 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 Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of *[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 until a date 30 days from the date of issue by UNDP of a certificate of satisfactory performance and full completion of services by the Contractor.

### SIGNATURE AND SEAL OF THE GUARANTOR BANK

Date .....

Name of Bank .....

Address .....

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<sup>8</sup> If the RFP requires the submission of a Performance Security, which shall be made a condition to the signing and effectivity of the contract, the Performance Security that the Bidder's Bank will issue shall use the contents of this template

## Section 10: Contract

### MODEL CONTRACT FOR WORKS

Date \_\_\_\_\_

Dear Sir/Madam,

Ref.: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_ [INSERT PROJECT NUMBER AND TITLE]

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

#### 1. Contract Documents

- 1.1 This Contract is subject to the UNDP General Conditions for Civil Works, \_\_\_\_\_ [INSERT REVISION NUMBER AND DATE FROM THE CONTRACTS DOCUMENTS LIBRARY], attached hereto as Annex I. The provisions of such Annex shall control the interpretation of this Contract and in no way shall be deemed to have been derogated by the contents of this letter and any other Annexes, unless otherwise expressly stated under section 4 of this letter, entitled "Special Conditions".
- 1.2 The Contractor and UNDP also agree to be bound by the provisions contained in the following documents, which shall take precedence over one another in case of conflict in the following order:
- a) this letter;
  - b) the Scope of Work and BOQs [ref. ....dated.....], attached hereto as Annex II;
  - c) the Contractor's Tender \_\_\_\_\_ [IF THE CONTRACT IS ON THE BASIS OF UNIT PRICE, INSERT: including the Priced Bill of Quantities] [ref....., dated .....], as clarified by the agreed minutes of the negotiation meeting<sup>9</sup> [dated.....], not attached hereto but known to and in the possession of both parties.
- 1.3 All the above shall form the Contract between the Contractor and UNDP, superseding the contents of any other negotiations and/or agreements, whether oral or in writing, pertaining to the subject of this Contract.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [INSERT NAME AND ADDRESS OF THE CONTRACTOR]

<sup>9</sup> If there are updates to the technical proposal or correspondence exchanged in clarification of certain aspects, reference them too, provided that they are acceptable to UNDP. Otherwise, aspects which resolution is pending should be dealt with in this letter itself or in the Technical Specifications/Drawings, as appropriate.

## 2. Obligations of the Contractor

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

### OPTION 1 (FIXED PRICE)

## 3. Price and Payment<sup>10</sup>

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

<u>MILESTONE</u> <sup>11</sup>	<u>AMOUNT</u>	<u>DATE</u>
Upon signature of Contract	.....	../../....
.....	.....	../../....
Upon substantial completion of Works	.....	../../....
Upon final completion of Works	.....	../../....

<sup>10</sup> This version of section 3 is to be used for fixed price contracts. Fixed price contracts should normally be used when it is possible to estimate with reasonable accuracy the costs of the activities which are the subject of the Contract.

<sup>11</sup> In the case of advance payments, the amount should not exceed 15%.

3

## OPTION 2 (COST REIMBURSEMENT)

### 3. Price and payment

- 3.1 The total estimated price of the Contract is contained in the Bill of Quantities and amounts to \_\_\_\_\_ **[INSERT CURRENCY & AMOUNT IN FIGURES AND WORDS]**.
- 3.2 The final price of the Contract will be determined on the basis of the actual quantities of work and materials utilized in the complete and satisfactory performance of the Works as certified by the Engineer and the unit prices contained in the Contractor's financial proposal. Such unit prices are fixed and are not subject to any variation whatsoever.
- 3.3 If the Contractor foresees that the final price of the Contract may exceed the total estimated price contained in 3.1 above, he shall so inform the Engineer without delay, in order for UNDP to decide, at its discretion, to increase the estimated price of the Contract as a result of a larger quantity of work/material or to reduce the quantity of work to be performed or materials to be used. UNDP shall not be responsible for payment of any amount in excess of that stipulated in 3.1 above unless this latter amount has been increased by means of a written amendment of this Contract in accordance with its paragraph 8 below.
- 3.4 The Contractor shall submit an invoice for \_\_\_\_\_ **[INSERT AMOUNT AND CURRENCY OF THE ADVANCE PAYMENT IN FIGURES & WORDS]** upon signature of this Contract by both parties, invoices for the work performed and materials utilized every \_\_\_\_\_ **[INSERT PERIOD OF TIME OR MILESTONES]** and a final invoice within 30 days from the issuance of the Certificate of Substantial Completion by the Engineer.<sup>12</sup>

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

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

<sup>12</sup> In the case of advance payments, the amount should not exceed 15%.

#### 4. Special conditions<sup>13</sup>

- 4.1 The advance payment to be made upon signature of the contract by both parties is contingent upon receipt and acceptance by UNDP of a bank guarantee <sup>14</sup>for the full amount of the advance payment issued by a Bank and in a form acceptable to UNDP.<sup>15</sup>
- 4.2 The amounts of the payments referred to under section 3.6 above shall be subject to a deduction of \_\_\_\_\_ **[INSERT PERCENTAGE OF TOTAL CONTRACT PRICE THAT THE ADVANCE REPRESENTS]** % (... percent) of the amount accepted for payment until the cumulative amount of the deductions so effected shall equal the amount of the advance payment.<sup>16</sup> Should the cumulative amount of the deductions so made be lower than the amount of the advance payment after the date of substantial completion of the Works, UNDP may deduct the amount equal to the difference between the advance payment and the cumulative deductions from the payments due after substantial completion or may recover such amount from the bank guarantee referred to in 4.1 above.
- 4.3 The Performance **[SELECT BOND/GUARANTEE]** referred to in Clause 10 of the General Conditions shall be submitted by the Contractor for an amount of \_\_\_\_\_ **[INSERT -PERCENTAGE OF THE TOTAL]**
- ESTIMATED OR FIXED PRICE OF THE CONTRACT IN THE CASE OF A GUARANTEE AND 30% IN THE CASE OF A BOND].**<sup>17</sup>
- 4.4 **[THE USE OF THIS CLAUSE REQUIRES APPROVAL BY THE PROJECT DIRECTOR/UNDP PROGRAMME OFFICER]** The Contractor may submit invoices for materials and plant stored at the Site, provided they are necessary and adequate for the performance of the Works and they are protected from weather conditions and duly insured as per the instructions of the Engineer.
- 4.5 The liability insurance referred to in Clause 23 of the General Conditions shall be taken out by the Contractor for an amount of..... **[CONSULT THE ENGINEER FOR APPROPRIATE AMOUNT]**.
- 4.6 According to Clause 45 of the General Conditions, the liquidated damages for delay shall be \_\_\_\_\_ **[INSERT PERCENTAGE]** of the price of the Contract per week of delay, up to a maximum of 10% of the final price of the Contract.

<sup>13</sup> Under this Section, the Programme Officer may propose special clauses in order to adapt the model contract to the specific situation. In this sample clause 4, several clauses of common use are given. If they are not required, they should be deleted.

<sup>14</sup> If the legislation of the Country of the Contractor forbids the use of bank guarantees, a bond may be accepted.

<sup>15</sup> This clause must be used when an advance payment of \$50,000 or more is granted to the Consultant..

<sup>16</sup> This clause must be used when an advance payment is granted (whatever the amount) in a cost reimbursement contract.

<sup>17</sup> The reason for the distinction between a 10% bank guarantee and a 30% performance bond is that bank guarantees are generally unconditional and can be called directly without proof of nonperformance, whereas most performance bonds are conditional and require some proof of nonperformance. There are usually additional costs and time delays incurred with cashing a performance bond and so a higher percentage is requested to cover the extra work involved. Some banks outside of the U.S. may call certain guarantee instruments, "performance bonds or guarantees" although they may only be conditional guarantees. It is important to review the text of the instrument to determine whether it is a conditional or unconditional guarantee.

**5. Submission of invoices**

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

**6. Time and manner of payment**

- 6.1 Invoices shall be paid within thirty (30) days of the date of their receipt and acceptance by UNDP.
- 6.2 All payments shall be made by UNDP to the following Bank account of the Contractor:

\_\_\_\_\_ [NAME OF THE BANK]

\_\_\_\_\_ [ACCOUNT NUMBER]

\_\_\_\_\_ [ADDRESS OF THE BANK]

**7. Modifications**

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

**Notifications**

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

**For the UNDP:**

**Luca Renda**  
**UNDP Country Director**  
United Nations Development Programme

Arab African International Bank Building  
Riad El Solh Street  
Nejmeh, Beirut 2011 5211, Lebanon  
Tel: +961 1 962 500  
Fax: +961 1 962 491

**CONTRACT Ref. \_\_\_\_/\_\_\_\_/\_\_\_\_ [INSERT CONTRACT REFERENCE & NUMBER]**

**For the Contractor:**

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

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

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

**OR**

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

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

Yours sincerely,

**[INSERT NAME OF RR or Bureau/Division Director]**

For [Insert name of the company/organization]

Agreed and Accepted:

Signature \_\_\_\_\_

Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_





# GENERAL CONDITIONS OF CONTRACT FOR CIVIL WORKS

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#### Appendix I: Format of Performance Security



## **1. DEFINITIONS**

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

- a) "Employer" means the United Nations Development Programme (UNDP).
- b) "Contractor" means the person whose tender has been accepted and with whom the Contract has been entered into.
- c) "Engineer" means the person whose services have been engaged by UNDP to administer the Contract as provided therein, as will be notified in writing to the Contractor.
- d) "Contract" means the written agreement between the Employer and the Contractor, to which these General Conditions are annexed.
- e) "The Works" means the works to be executed and completed under the Contract.
- f) "Temporary Works" shall include items to be constructed which are not intended to be permanent and form part of the Works.
- g) "Drawings" and "Specifications" mean the Drawings and Specifications referred to in the Contract and any modification thereof or addition thereto furnished by the Engineer or submitted by the Contractor and approved in writing by the Engineer in accordance with the Contract.
- h) "Bill of Quantities" is the document in which the Contractor indicates the cost of the Works, on the basis of the foreseen quantities of items of work and the fixed unit prices applicable to them.
- i) "Contract Price" means the sum agreed in the Contract as payable to the Contractor for the execution and completion of the Works and for remedying of any defects therein in accordance with the Contract.
- j) "Site" means the land and other places on, under, in or through which the Works or Temporary Works are to be constructed.

## **2. SINGULAR AND PLURAL**

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

## **3. HEADINGS OR NOTES**

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

#### **4. LEGAL RELATIONSHIPS**

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

#### **5. GENERAL DUTIES/POWERS OF ENGINEER**

- a) The Engineer shall provide administration of Contract as provided in the Contract Documents. In particular, he shall perform the functions hereinafter described.
- b) The Engineer shall be the Employer's representative vis-à-vis the Contractor during construction and until final payment is due. The Engineer shall advise and consult with the Employer. The Employer's instructions to the Contractor shall be forwarded through the Engineer. The Engineer shall have authority to act on behalf of the Employer only to the extent provided in the Contract Documents as they may be amended in writing in accordance with the Contract. The duties, responsibilities and limitations of authority of the Engineer as the Employer's representative during construction as set forth in the Contract shall not be modified or extended without the written consent of the Employer, the Contractor and the Engineer.
- c) The Engineer shall visit the Site at intervals appropriate to the stage of construction to familiarize himself generally with the progress and quality of the Works and to determine in general if the Works are proceeding in accordance with the Contract Documents. On the basis of his on-site observations as an Engineer, he shall keep the Employer informed of the progress of the Works.
- d) The Engineer shall not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Works or the Temporary Works. The Engineer shall not be responsible for or have control or charge over the acts or omissions of the Contractor (including the Contractor's failure to carry out the Works in accordance with the Contract) and of Sub-contractors or any of their agents or employees, or any other persons performing services for the Works, except if such acts or omissions are caused by the Engineer's failure to perform his functions in accordance with the contract between the Employer and the Engineer.
- e) The Engineer shall at all times have access to the Works wherever and whether in preparation or progress. The Contractor shall provide facilities for such access so that the Engineer may perform his functions under the Contract.
- f) Based on the Engineer's observations and an evaluation of the documentation submitted by the Contractor together with the invoices, the Engineer shall determine the amounts owed to the Contractor and shall issue Certificates for Payment as appropriate.

- g) The Engineer shall review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for conformity with the design concept of the Works and with the provisions of the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.
- h) The Engineer shall interpret the requirements of the Contract Documents and judge the performance thereunder by the Contractor. All interpretations and orders of the Engineer shall be consistent with the intent of and reasonably inferable from the Contract Documents and shall be in writing or in the form of drawings. Either party may make a written request to the Engineer for such interpretation. The Engineer shall render the interpretation necessary for the proper execution of the Works with reasonable promptness and in accordance with any time limit agreed upon. Any claim or dispute arising from the interpretation of the Contract Documents by the Engineer or relating to the execution or progress of the Works shall be settled as provided in Clause 71 of these General Conditions.
- i) Except as otherwise provided in the Contract, the Engineer shall have no authority to relieve the Contractor of any of his obligations under the Contract nor to order any work involving delay in completion of the Works or any extra payment to the Contractor by the Employer, or to make any variations to the Works.
- j) In the event of termination of the employment of the Engineer, the Employer shall appoint another suitable professional to perform the Engineer's duties.
- k) The Engineer shall have authority to reject work which does not conform to the Contract Documents. Whenever, in his opinion, he considers it necessary or advisable for the implementation of the intent of the Contract Documents, he will have authority to require special inspection or testing of the work whether or not such work be then fabricated, installed or completed. However, neither the Engineer's authority to act nor any reasonable decision made by him in good faith either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Engineer to the Contractor, any subcontractor, any of their agents or employees, or any other person performing services for the Works.
- l) The Engineer shall conduct inspections to determine the dates of Substantial Completion and Final Completion, shall receive and forward to the Employer for the Employer's review written warranties and related documents required by the Contract and assembled by the Contractor, and shall issue a final Certificate for Payment upon compliance with the requirements of Clause 47 hereof and in accordance with the Contract.
- m) If the Employer and Engineer so agree, the Engineer shall provide one or more Engineer's Representative(s) to assist the Engineer in carrying out his responsibilities at the site. The Engineer shall notify in writing to the Contractor and the Employer the duties, responsibilities and limitations of authority of any such Engineer's Representative(s).

## **6. CONTRACTOR'S GENERAL OBLIGATIONS/RESPONSIBILITIES**

### **6.1. Obligation to Perform in Accordance with Contract**

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

## **6.2 Responsibility for Site Operations**

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

## **6.3. Responsibility for Employees**

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

## **6.4. Source of Instructions**

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

## **6.5. Officials Not to Benefit**

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

## **6.6. Use of Name, Emblem or Official Seal of UNDP or the United Nations**

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

### **6.7. Confidential Nature of Documents**

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

## **7. ASSIGNMENT AND SUBCONTRACTING**

### **7.1. Assignment of Contract**

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

### **7.2. Subcontracting**

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

### **7.3. Assignment of Subcontractor's Obligations**

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

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

## **8. DRAWINGS**

### **8.1. Custody of drawings**

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

### **8.2. One copy of Drawings to be kept on Site**

One copy of the Drawings furnished to the Contractor as aforesaid shall be kept by the Contractor on the Site and the same shall at all reasonable times be available for inspection and use by the

Engineer and by any other person authorized in writing by the Engineer.

### **8.3. Disruption of Progress**

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

## **9. WORK BOOK**

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

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

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

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

## **10. PERFORMANCE SECURITY**

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



#### **11. INSPECTION OF SITE**

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

#### **12. SUFFICIENCY OF TENDER**

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

#### **13. PROGRAMME OF WORK TO BE FURNISHED**

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

#### **14. WEEKLY SITE MEETING**

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

## **15. CHANGE ORDERS**

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

## **16. CONTRACTOR'S SUPERINTENDENCE**

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

## **17. CONTRACTOR'S EMPLOYEES**

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



paragraph (1) of this Clause. Such request for withdrawal or replacement shall not be considered as termination in part or in whole of this Contract. All costs and additional expenses resulting from any withdrawal or replacement for whatever reason of any of the Contractor's personnel shall be at the Contractor's expense.

#### **18. SETTING-OUT**

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

#### **19. WATCHING AND LIGHTING**

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

#### **20. CARE OF WORKS**

- a) From the commencement date of the Works to the date of substantial completion as stated in the Certificate of Substantial Completion, the Contractor shall take full responsibility for the care thereof and of all Temporary Works. In the event that any damage or loss should happen to the Works or to any part thereof or to any Temporary Works from any cause whatsoever (save and except as shall be due to Force Majeure as defined in Clause 66 of these General Conditions), the Contractor shall at his own cost repair and make good the same so that, at completion, the Works shall be in good order and condition and in conformity in every respect with the requirements of the Contract and the Engineer's instructions. The Contractor shall also be liable for any damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligations Clause 47 hereof.
- b) The Contractor shall be fully responsible for the review of the Engineering design and details of the Works and shall inform the Employer of any mistakes or incorrectness in such design and details which would affect the Works.

#### **21. INSURANCE OF WORKS, ETC.**

Without limiting his obligations and responsibilities under Clause 20 hereof, the Contractor shall insure immediately following signature of this Contract, in the joint names of the Employer and the Contractor (a) for the period stipulated in Clause 20(1) hereof, against all loss or damage from whatever cause arising, other than cause of Force majeure as defined in clause 66 of these General Conditions, and (b) against loss or damage for which the Contractor is responsible, in such manner that the Employer and the Contractor are covered for the period stipulated in Clause 20 (1) hereof

and are also covered during the Defects Liability Period for loss or damage arising from a cause occurring prior to the commencement of the Defects Liability Period and for any loss or damage occasioned by the Contractor in the course of any operations carried out by him for the purpose of complying with his obligations under Clause 47 hereof:

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

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

## **22. DAMAGE TO PERSONS AND PROPERTY**

The Contractor shall (except if and so far as the Contract provides otherwise) indemnify, hold and save harmless and defend at his own expense the Employer, its officers, agents, employees and servants from and against all suits, claims, demands, proceedings, and liability of any nature or kind, including costs and expenses, for injuries or damages to any person or any property whatsoever which may arise out of or in consequence of acts or omissions of the Contractor or its agents, employees, servants or subcontractors in the execution of the Contract. The provision of this Clause shall extend to suits, claims, demands, proceedings and liability in the nature of workmen's compensation claims and arising out of the use of patented inventions and devices. Provided always that nothing herein contained shall be deemed to render the Contractor liable for or in respect of or with respect to:

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



## **23. LIABILITY INSURANCE**

### **23.1. Obligation to take out Liability Insurance**

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

### **23.2. Minimum Amount of Liability Insurance**

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

### **23.3. Provision to Indemnify Employer**

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

## **24. ACCIDENT OR INJURY TO WORKMEN**

- a) The Employer shall not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workman or other person in the employment of the Contractor or any sub-Contractor, save and except an accident or injury resulting from any act or default of the Employer, his agents or servants. The Contractor shall indemnify, hold and save harmless the Employer against all such damages and compensation, save and except as aforesaid, and against all claims, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

b) Insurance Against Accident, etc., to Workmen

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

## **25. REMEDY ON CONTRACTOR'S FAILURE TO INSURE**

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

## **26. COMPLIANCE WITH STATUTES, REGULATIONS, ETC.**

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

## **27. FOSSILS, ETC.**

All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the Site of the Works shall as between the Employer and the Contractor be deemed to be the absolute property of the Employer and the Contractor shall take reasonable precautions to prevent his workmen or any other persons from removing or damaging any such article or thing and shall immediately upon discovery thereof and before removal acquaint the Employer of such discovery and carry out at the expense of the Employer the Engineer's orders as to the disposal of the same.

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

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

## **29. INTERFERENCE WITH TRAFFIC AND ADJOINING PROPERTIES**

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

## **30. EXTRAORDINARY TRAFFIC AND SPECIAL LOADS**

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

## **31. OPPORTUNITIES FOR OTHER CONTRACTORS**

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

## **32. CONTRACTOR TO KEEP SITE CLEAN**

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

required.

### **33. CLEARANCE OF SITE ON SUBSTANTIAL COMPLETION**

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

### **34. LABOUR**

#### **34.1 Engagement of Labour**

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

#### **34.2 Supply of Water**

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

#### **34.3 Alcoholic Drinks or Drugs**

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

#### **34.4 Arms and Ammunition**

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

#### **34.5 Holiday and Religious Customs**

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

#### **34.6 Epidemics**

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

#### **34.7 Disorderly Conduct, etc.**



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

#### **34.8 Observance by Sub-Contractors**

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

#### **34.9 Legislation applicable to Labour**

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

### **35 RETURNS OF LABOUR, PLANT, ETC.**

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

### **36 MATERIALS, WORKMANSHIP AND TESTING**

#### **36.1 Materials and Workmanship**

- a) All materials and workmanship shall be of the respective kinds described in the Contract and in accordance with the Engineer's instructions and shall be subjected from time to time to such tests as the Engineer may direct at the place of manufacture or fabrication, or on the Site or at all or any of such places. The Contractor shall provide such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any materials used and shall supply samples of materials before incorporation in the Works for testing as may be selected and required by the Engineer. All testing equipment and instruments provided by the Contractor shall be used only by the Engineer or by the Contractor in accordance with the instructions of the Engineer.
- b) No material not conforming with the Specifications in the Contract may be used for the Works without prior written approval of the Employer and instruction of the Engineer, provided always that if the use of such material results or may result in increasing the Contract Price, the procedure in Clause 48 shall apply.

#### **36.2 Cost of Samples**

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



### **36.3 Cost of Tests**

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

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

### **37 ACCESS TO SITE**

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

### **38 EXAMINATION OF WORK BEFORE COVERING UP**

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

### **39 REMOVAL OF IMPROPER WORK AND MATERIALS**

#### **39.1 Engineer's power to order removal**

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

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

#### **39.2 Default of Contractor in carrying out Engineer's Instructions**

In case of default on the part of the Contractor in carrying out an instruction of the Engineer, the

Employer shall be entitled to employ and pay other persons to carry out the same and all expenses consequent thereon or incidental thereto shall be borne by the Contractor and shall be recoverable from him by the Employer and may be deducted by the Employer from any monies due or which may become due to the Contractor.

#### **40 SUSPENSION OF WORK**

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

#### **41 POSSESSION OF SITE**

##### **41.1 Access to Site**

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

##### **41.2 Wayleaves, etc.**

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

##### **41.3 Limits of the Site**

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

#### **42 TIME FOR COMPLETION**

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

#### **43 EXTENSION OF TIME FOR COMPLETION**

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

#### **44 RATE OF PROGRESS**

The whole of the materials, plant and labour to be provided by the Contractor and the mode, manner and speed of execution and completion of the Works are to be of a kind and conducted in a manner to the satisfaction of the Engineer. Should the rate of progress of the Works or any part thereof be at any time in the opinion of the

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

#### **45 LIQUIDATED DAMAGES FOR DELAY**

- a) If the Contractor shall fail to complete the Works within the time for completion prescribed in the Contract, or any extended time for completion in accordance with the Contract, then the Contractor shall pay to the Employer the sum specified in the Contract as liquidated damages, for the delay between the time prescribed in the Contract or the extended time for completion, as the case may be, and the date of substantial completion of the Works as stated in the Certificate of Substantial Completion, subject to the applicable limit stated in the Contract. The said sum shall be payable by the sole fact of the delay without the need for any previous notice or any legal proceedings, or proof of damage, which shall in all cases be considered as ascertained. The Employer may, without

prejudice to any other method of recovery, deduct the amount of such liquidated damages from any monies in its hands due or which may become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works or from any other of his obligations and liabilities under the Contract.

- b) If, before the time for completion of the whole of the Works or of a Section of the Works, a Certificate of Substantial Completion has been issued for any part or Section of the Works, the liquidated damages for delay in completion of the remainder of the Works or of that Section may, for any period of delay after the date stated in such Certificate of Substantial Completion, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part or Section so certified bears to the total value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

#### **46 CERTIFICATE OF SUBSTANTIAL COMPLETION**

##### **46.1 Substantial Completion of the Works**

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

##### **46.2 Substantial Completion of Sections or Parts of the Works**

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

- a) a separate time for completion is provided in the Contract in respect of such Section or part of the Works;

- b) such Section or part of the Works has been completed to the satisfaction of the Engineer and is required by the Employer for his occupation or use.

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

## **47 DEFECTS LIABILITY**

### **47.1 Defects Liability Period**

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

### **47.2 Completion of Outstanding Work and Remedying of Defects**

During the Defects Liability Period, the Contractor shall finish the work, if any, outstanding at the date of the Certificate of Substantial Completion, and shall execute all such work of repair, amendment, reconstruction, rectification and making good defects, imperfections, shrinkages or other faults as may be required of the Contractor in writing by the Engineer during the Defects Liability Period and within fourteen (14) days after its expiration, as a result of an inspection made by or on behalf of the Engineer prior to expiration of the Defects Liability Period.

### **47.3 Cost of Execution of Work of Repair, etc.**

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

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

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

### **47.5 Certificate of Final Completion**

Upon satisfactory completion of the work outstanding on the Works, the Engineer shall within twenty eight (28) days of the expiration of the Defects Liability period issue a Certificate of Final Completion to the Contractor. The Contract shall be deemed to be completed upon issuance of such Certificate, provided that the provisions of the Contract which remain unperformed and the

Settlement of Disputes provision in the Contract shall remain in force for as long as is necessary to dispose of any outstanding matters or issues between the Parties.

#### **48 ALTERATIONS, ADDITIONS AND OMISSIONS**

##### **1 VARIATIONS**

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

- (a) increase or decrease the quantity of any work under the Contract;
- (b) omit any such work;
- (c) change the character or quality or kind of any such work;
- (d) change the levels, lines, positions and dimensions of any part of the Works;
- (e) execute additional work of any kind necessary for the completion of the Works, and no such variation shall in any way vitiate or invalidate the Contract.

##### **2 Variations Increasing Cost of Contract or altering the Works.**

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

##### **3 ORDERS FOR VARIATIONS TO BE IN WRITING**

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

##### **4 VALUATION OF VARIATIONS**

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

variation, addition or omission. The value of any variation, addition or omission shall be calculated on the basis of the unit prices contained in the Bill of Quantities.

#### **49 PLANT, TEMPORARY WORKS AND MATERIALS**

##### **1 PLANT, ETC., EXCLUSIVE USE FOR THE WORKS**

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

##### **2 Removal of Plant, etc.**

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

##### **3 EMPLOYER NOT LIABLE FOR DAMAGE TO PLANT**

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

##### **4 OWNERSHIP OF PAID MATERIAL AND WORK**

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

##### **5 EQUIPMENT AND SUPPLIES FURNISHED BY EMPLOYER**

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

#### **50 APPROVAL OF MATERIALS ETC., NOT IMPLIED**

The operation of Clause 49 hereof shall not be deemed to imply any approval by the Engineer of the



materials or other matters referred to therein nor shall it prevent the rejection of any such materials at any time by the Engineer.

## **51 MEASUREMENT OF WORKS**

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

## **52 LIABILITY OF THE PARTIES**

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

## **3 UNFULFILLED OBLIGATIONS**

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

## **4 CONTRACTOR RESPONSIBLE**

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

## **53 AUTHORITIES**

- 1 The Employer shall have the right to enter upon the Site and expel the Contractor therefrom without thereby voiding the Contract or releasing the Contractor from any of his obligations or liabilities under the Contract or affecting the rights and powers conferred on the Employer and the Engineer by the Contract in any of the following cases:
  - (a) If the Contractor is declared bankrupt or claims bankruptcy or court protection against his creditors or if the Contractor is a company or member of a company which was dissolved by legal action;
  - (b) If the Contractor makes arrangements with his creditors or agrees to carry out the Contract under an inspection committee of his creditors;
  - (c) If the Contractor withdraws from the Works or assigns the Contract to others in whole or in part without the Employer's prior written approval;
  - (d) If the Contractor fails to commence the Works or shows insufficient progress to the extent which in the opinion of the Engineer will not enable him to meet the target completion date of the Works;
  - (e) If the Contractor suspends the progress of the Works without due cause for fifteen (15) days after receiving from the Engineer written notice to proceed;
  - (f) If the Contractor fails to comply with any of the Contract conditions or fails to fulfill his obligations and does not remedy the cause of his failure within fifteen (15) days after being notified to do so in writing;
  - (g) If the Contractor is not executing the work in accordance with standards of workmanship specified in the Contract;
  - (h) If the Contractor gives or promises to give a present or loan or reward to any employee of the Employer or of the Engineer.

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

## 2 EVALUATION AFTER RE-ENTRY

The Engineer shall as soon as may be practicable after any such entry and expulsion by the Employer notify the Contractor to attend the necessary evaluation of the Works. In the event that for any reason the Contractor does not attend such evaluation the Engineer shall undertake the said evaluation in the absence of the Contractor and shall issue a certificate stating the sum, if any, due to the Contractor for work done in accordance with the Contract up to the time of entry and expulsion by the Employer which has been reasonably accumulated to the Contractor in respect of

the Works he has executed in such case in accordance with the Contract. The Engineer shall indicate the value of the materials whether unused or partially used and the value of construction equipment and any part of the Temporary Works.

### **3 PAYMENT AFTER RE-ENTRY**

If the Employer shall enter and expel the Contractor under this Clause he shall not be liable to pay the Contractor any money on account of the Contract until the expiration of the Defects Liability Period, and thereafter until the costs of completion and making good any defects of the Works, damages for delay in completion (if any), and all other expenses incurred by the Employer have been ascertained and their amount certified by the Engineer. The Contractor shall then be entitled to receive only such sum or sums (if any) as the Engineer may certify would have been due to him upon due completion by him after deducting the said amount. But if such amount shall exceed the sum which would have been payable to the Contractor on due completion by him,, then the Contractor shall upon demand pay to the Employer the amount of such excess. The Employer in such case may recover this amount from any money due to the Contractor from the Employer without the need to resort to legal procedures.

### **54 URGENT REPAIRS**

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

### **55 INCREASE AND DECREASE OF COSTS**

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

### **56 TAXATION**

The Contractor shall be responsible for the payment of all charges and taxes in respect of income including value added tax, all in accordance with and subject to the provisions of the income tax laws and regulations in force and all amendments thereto. It is the Contractor's responsibility to

make all the necessary inquiries in this respect and he shall be deemed to have satisfied himself regarding the application of all relevant tax laws.

## **57 BLASTING**

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

## **58 MACHINERY**

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

## **59 TEMPORARY WORKS AND REINSTATEMENT**

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

## **60 PHOTOGRAPHS AND ADVERTISING**

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

## **61 PREVENTION OF CORRUPTION**

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

## **62 DATE FALLING ON HOLIDAY**

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

## **63 NOTICES**

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

- 6 Any notice to be given to the Engineer under the terms of this Contract shall be sent by post, cable, telex or facsimile at the Engineer's address specified in the Contract, or by delivering the same at the said address against an authorized signature certifying the receipt.

#### 64 LANGUAGE, WEIGHTS AND MEASURES

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

#### 65 RECORDS, ACCOUNTS, INFORMATION AND AUDIT

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

The Contractor shall furnish, compile or make available at all times to the UNDP any records or information, oral or written, which the UNDP may reasonably request in respect of the Works or the Contractor's performance thereof.

The Contractor shall allow the UNDP or its authorized agents to inspect and audit such records or information upon reasonable notice.

#### 66 FORCE MAJEURE

Force majeure as used herein means Acts of God, war (whether declared or not), invasion, revolution, insurrection or other acts or events of a similar nature or force.

In the event of and as soon as possible after the occurrence of any cause constituting force majeure, the Contractor shall give notice and full particulars in writing to the UNDP and to the Engineer of such force majeure if the Contractor is thereby rendered unable, wholly or in part, to perform its obligations and meet its responsibilities under this Contract. Subject to acceptance by the UNDP of the existence of such force majeure, which acceptance shall not be unreasonably withheld, the following provisions shall apply:

- (a) The obligations and responsibilities of the Contractor under this Contract shall be suspended to the extent of his inability to perform them and for as long as such inability continues. During such suspension and in respect of work suspended, the Contractor shall be reimbursed by the UNDP substantiated costs of maintenance of the Contractor's equipment and of per diem of the Contractor's permanent personnel rendered idle by such suspension;
- (b) The Contractor shall within fifteen (15) days of the notice to the UNDP of the occurrence of the force majeure submit a statement to the UNDP of estimated costs referred to in sub-paragraph (a)

above during the period of suspension followed by a complete statement of actual expenditures within thirty (30) days after the end of the

- (c) suspension;
- (d) The term of this Contract shall be extended for a period equal to the period of suspension taking however into account any special condition which may cause the additional time for completion of the Works to be different from the period of suspension;
- (e) If the Contractor is rendered permanently unable, wholly or in part, by reason of force majeure, to perform his obligations and meet his responsibilities under the Contract, the UNDP shall have the right to terminate the Contract on the same terms and conditions as provided for in Clause 68 of these General Conditions, except that the period of notice shall be seven (7) days instead of fourteen (14) days, and
- (f) For the purpose of the preceding sub-paragraph, the UNDP may consider the Contractor permanently unable to perform in case of any suspension period of more than ninety (90) days.

#### **67 SUSPENSION BY THE UNDP**

The UNDP may by written notice to the Contractor suspend for a specified period, in whole or in part, payments to the Contractor and/or the Contractor's obligation to continue to perform the Works under this Contract, if in the UNDP's sole discretion:

- (a) any conditions arise which interfere, or threaten to interfere with the successful execution of the Works or the accomplishment of the purpose thereof, or
- (b) the Contractor shall have failed, in whole or in part, to perform any of the terms and conditions of this Contract.

After suspension under sub-paragraph (a) above, the Contractor shall be entitled to reimbursement by the UNDP of such costs as shall have been duly incurred in accordance with this Contract prior to the commencement of the period of such suspension.

The term of this Contract may be extended by the UNDP for a period equal to any period of suspension, taking into account any special conditions which may cause the additional time for completion of the Works to be different from the period of suspension.

#### **68 TERMINATION BY THE UNDP**

The UNDP may, notwithstanding any suspension under Clause 67 above, terminate this Contract for cause or convenience in the interest of the UNDP upon not less than fourteen (14) days written notice to the Contractor.

Upon termination of this Contract:

- (a) The Contractor shall take immediate steps to terminate his performance of the Contract in a prompt and orderly manner and to reduce losses and to keep further expenditures to a minimum, and
- (b) The Contractor shall be entitled (unless such termination has been occasioned by the Contractor's breach of this Contract), to be paid for the part of the Works satisfactorily completed and for the materials and equipment properly delivered to the Site as of the date of termination for incorporation to the Works, plus substantiated costs resulting from commitments entered into prior to the date of termination as well as any reasonable substantiated direct costs incurred by the Contractor as a result of the termination, but shall not be entitled to receive any other or further payment or damages.

## **69 TERMINATION BY THE CONTRACTOR**

In the case of any alleged breach by the UNDP of the Contract or in any other situation which the Contractor reasonably considers to entitle him to terminate his performance of the Contract, the Contractor shall promptly give written notice to the UNDP detailing the nature and the circumstances of the breach or other situation. Upon acknowledgement in writing by the UNDP of the existence of such breach and the UNDP's inability to remedy it, or upon failure of the UNDP to respond to such notice within twenty (20) days of receipt thereof, the Contractor shall be entitled to terminate this Contract by giving 30 days written notice thereof. In the event of disagreement between the Parties as to the existence of such breach or other situation referred to above, the matter shall be resolved in accordance with Clause 71 of these General Conditions.

Upon termination of this Contract under this Clause the provisions of sub-paragraph (b) of Clause 68 hereof shall apply.

## **70 RIGHTS AND REMEDIES OF THE UNDP**

Nothing in or relating to this Contract shall be deemed to prejudice or constitute a waiver of any other rights or remedies of the UNDP.

The UNDP shall not be liable for any consequences of, or claim based upon, any act or omission on the part of the Government.

## **71 SETTLEMENT OF DISPUTES**

In the case of any claim, controversy or dispute arising out of, or in connection with this Contract or any breach thereof, the following procedure for resolution of such claim, controversy or dispute shall apply.

### **1 NOTIFICATION**

The aggrieved party shall immediately notify the other party in writing of the nature of the alleged claim, controversy or dispute, not later than seven (7) days from awareness of the existence thereof.



## **2 CONSULTATION**

On receipt of the notification provided above, the representatives of the Parties shall start consultations with a view to reaching an amicable resolution of the claim, controversy or dispute without causing interruption of the Works.

## **3 CONCILIATION**

Where the representatives of the Parties are unable to reach such an amicable settlement, either party may request the submission of the matter to conciliation in accordance with the UNCITRAL Rules of Conciliation then obtaining.

## **4 ARBITRATION**

Any claim, controversy or dispute which is not settled as provided under clauses 71.1 through 3 above shall be referred to arbitration in accordance with the UNCITRAL Arbitration Rules then obtaining. The Parties shall be bound by the arbitration award rendered in accordance with such arbitration as the final adjudication of any such controversy or claim.

## **72 PRIVILEGES AND IMMUNITIES**

Nothing in or relating to this Contract shall be deemed a waiver of any of the privileges and immunities of the United Nations of which the UNDP is an integral part.

## **73 SECURITY**

The Contractor shall:

- (a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the services are being provided;
- (b) assume all risks and liabilities related to the Contractor's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this contract. Notwithstanding the foregoing, the Contractor shall remain solely responsible for the security of its personnel and for UNDP's property in its custody as set forth in paragraph 4.1 above.

#### 74 AUDIT AND INVESTIGATIONS

Each invoice paid by UNDP shall be subject to a post-payment audit by auditors, whether internal or external, of UNDP or the authorized agents of the UNDP at any time during the term of the Contract and for a period of three (3) years following the expiration or prior termination of the Contract. The UNDP shall be entitled to a refund from the Contractor for any amounts shown by such audits to have been paid by the UNDP other than in accordance with the terms and conditions of the Contract. Should the audit determine that any funds paid by UNDP have not been used as per contract clauses, the company shall reimburse such funds forthwith. Where the company fails to reimburse such funds, UNDP reserves the right to seek recovery and/or to take any other action as it deems necessary.

The Contractor acknowledges and agrees that, at anytime, UNDP may conduct investigations relating to any aspect of the Contract, the obligations performed under the Contract, and the operations of the Contractor generally. The right of UNDP to conduct an investigation and the Contractor's obligation to comply with such an investigation shall not lapse upon expiration or prior termination of the Contract. The Contractor shall provide its full and timely cooperation with any such inspections, post-payment audits or investigations. Such cooperation shall include, but shall not be limited to, the Contractor's obligation to make available its personnel and any documentation for such purposes and to grant to UNDP access to the Contractor's premises. The Contractor shall require its agents, including, but not limited to, the Contractor's attorneys, accountants or other advisers, to reasonably cooperate with any inspections, post-payment audits or investigations carried out by UNDP hereunder.

#### 75 ANTI-TERRORISM

The Contractor agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received under this Contract are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Contract.

## Appendix I: PERFORMANCE SECURITY

***(This must be finalized using the official letterhead of the Issuing Bank. Except for indicated fields, no changes may be made in this template.)***

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To: UNDP  
*[Insert contact information as provided in Data Sheet]*

WHEREAS *[name and address of Contractor]* (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. *Click to enter* dated *Click to enter*, to deliver the goods and execute related services *Click here to enter text*. (hereinafter called "the Contract"):

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract:

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, 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 Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of *[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 until a date 30 days from the date of issue by UNDP of a certificate of satisfactory performance and full completion of services by the Contractor.

### SIGNATURE AND SEAL OF THE GUARANTOR BANK

Date.....

Name of Bank.....

Address.....

## Special Conditions

The following Special Conditions shall complement, supplement, or amend the General Conditions. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions.

<b>Termination of Contract</b>
Should termination occur for whichever reason, ownership of all the equipment procured under this Contract shall be automatically transferred to UNDP.
<b>Contract Performance</b>
<p>The Contractor is to operate and maintain the facilities in accordance with the relevant laws, standards, regulations and legislation, as well as the requirements under the Contract, and the manuals and guidelines as provided by the manufacturers and suppliers of the facilities.</p> <p>In the event that the Contractor is found not to be in compliance with the aforementioned, UNDP reserves the right to terminate the contract under Clause 27.</p>
<b>Packaging and Documents</b>
<p>The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.</p> <p>The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements and in any other instructions ordered by UNDP.</p>
<b>Performance security</b>
<p>a) Upon Contract's signature, the successful Bidder shall furnish a Performance Security to the Purchaser in the amount of 10% of the Contract Value.</p> <p>b) The Performance Security shall be valid until three (3) months from contract completion date.</p> <p>c) The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the contract.</p> <p>d) The Performance Security shall be denominated in the currency of the Contract and shall be in the form provided in Section 9.</p> <p>e) The Performance Security will be returned to the Supplier within three (3) months from contract completion date.</p>
<b>Insurance</b>
The Goods supplied under the Contract shall be fully insured—in a freely convertible currency from an eligible country—against loss or damage incidental to manufacture or acquisition, transportation, storage,



and delivery, in accordance with the applicable Incoterms and in the manner specified below:

- a) From "Warehouse" to the "Project Site" Insurance: in an amount equal to 110 percent of the DAP value of the Goods from "warehouse" to the "project site" on "All Risks" basis.
- b) Installation "All Risks" Insurance: as applicable, 110 percent of the DAP price of the Goods covering the Goods at the site from all risks of physical loss or damage (including burglary and theft, excluding other perils commonly excluded under "all risks" insurance policies of this type by reputable insurers) occurring prior to the issuance of the satisfactory certificate of completion by UNDP assigned entity.
- c) Further, the supplier's staff performing the services on-site during installation and after must be covered by a Third-Party Liability Insurance covering bodily injury or death suffered by third parties loss of or damage to property (including the Beneficiary's properties and any Subsystems) occurring in connection with the Contract, in the amount of twenty five thousand US Dollars (USD 25,000) with deductible limits of no more than ten thousand US Dollars (USD 10,000).

The Beneficiary, the UN entity and the Supplier's subcontractors shall be named as co-insured.

The Insurance policies (b) and (c) shall remain in effect and valid until the issuance of the satisfactory certificate of completion by UNDP assigned entity.

The identity of the insurers and the form of the policies shall be subject to the approval of the UN entity, who should not unreasonably withhold such approval.

Within one month from the Contract signature, the Supplier shall deliver to the UN entity certificates of insurance (or copies of the insurance policies) as evidence that the required policies are in full force and effect.

Unless otherwise provided in the Contract, the Supplier shall prepare and conduct all and any claims made under the policies affected by it pursuant to this Clause, and all monies payable by any insurers shall be paid to the Supplier. The UN entity shall give to the Supplier all such reasonable assistance as may be required by the Supplier in connection with any claim under the relevant insurance policies. With respect to insurance claims in which the UN entity's interest is involved, the Supplier shall not give any release or make any compromise with the insurer without the prior written consent of the UN entity. With respect to insurance claims in which the Supplier's interest is involved, the UN entity shall not give any release or make any compromise with the insurer without the prior written consent of the Supplier.