

Standard Bidding Document

WATER CONNECTION WORKS OF SECTOR 4C, 18C, 19C, 24B & 25BAT KDA SCHEME-33, GULZAR-E-HIJRI, KARACHI (Works)

National

Single Stage-Two Envelope



October 08, 2026

*Ministry of Housing and Works (Federal Government Employees Housing Authority), Project Director Karachi
2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi.
Phone: +92-334-650-0373, Email: pd-karachi@fgeha.gov.pk*

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REQUEST FOR BIDS

PROCUREMENT OF CIVIL WORKS

1. The **Ministry of Housing and Works (Federal Government Employees Housing Authority)** has reserved Funds for the procurement planned for FY **2026-27**. The **Ministry of Housing and Works (Federal Government Employees Housing Authority)** intends to apply part of the proceeds of this Fund to cover eligible payments under the contract for the "**WATER CONNECTION WORKS OF SECTOR 4C, 18C, 19C, 24B & 25BAT KDA SCHEME-33, GULZAR-E-HIJRI, KARACHI**" with the reference of "**P135111**".
2. The **Ministry of Housing and Works (Federal Government Employees Housing Authority)** invites sealed Bids from eligible Bidders for procurement of Works (**WATER CONNECTION WORKS OF SECTOR 4C, 18C, 19C, 24B & 25BAT KDA SCHEME-33, GULZAR-E-HIJRI, KARACHI**) described in the bidding documents on **EPADS v2.0**.
3. **Single Stage-Two Envelope** will be used by adopting **Least Cost Based Selection (LCBS)** Technique for the subject procurement, in line with the Public Procurement Rules, 2004 and any Regulations, Regulatory Guides, Procurement Guidelines or Instructions issued by the Authority from time to time.
4. All Bids must be accompanied by a Bid Security amount described in Bid Security Section in Bidding Document in the form of **Pay Order, Call at Deposit**. Or all bids must be accompanied by bid securing declaration in the format specified in the Bidding documents
5. E-Bidding documents, containing detailed terms & conditions, specifications and requirements etc. are available on **e-Pak Acquisition and Disposal System (EPADS)** at **<https://epads.gov.pk/opportunities/federal/procurements/135111>** for all the interested bidders registered on **EPADS v2.0**. Bidders are required to get themselves registered on **EPADS v2.0** to participate in Bidding process.
6. The e-bids, prepared in accordance with the instructions in the e-Bidding documents, must be submitted through **EPADS v2.0** on or before **Monday,**

November 2, 2026 12:00 PM. E-bids will be opened by using **EPADS v2.0** on the same day at **Monday, November 2, 2026 12:30 PM.** Manual submission of Bids shall not be entertained. Those vendor who have not yet registered on the new version of **EPADS v2.0**, may register themselves on <https://vendors.epads.gov.pk/>. A tutorial to explain the registration process is available at <https://www.youtube.com/watch?v=MNW6T38v7tc>.

In terms of Rules 48 of Public Procurement Rules, 2004 Grievance Redressal Committee (GRC) is notified for the subject procurement and notification copy is available on the procuring agency's website and on Authority's website at (www.ppra.org.pk).

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+92-334-650-0373
pd-karachi@fgeha.gov.pk



Instructions to Bidders

A. INTRODUCTION

1. Scope of Bid

1.1. The Procuring agency/Employer (PA), as indicated in the Bid Data Sheet (BDS) invites Bids for the execution of Works as specified in the BDS and Section V- Works Requirements. The name, identification, and number of lots (contracts) of this National/ International Competitive Bidding process are specified in the BDS.

2. Source of Funds

2.1. Source of funds as referred in Clause 2 of Bid Data Sheet.

3. Eligible Bidders

3.1. A bidder may be natural person, company or firm or public or semi-public agency of Pakistan or any foreign country, or any combination of them with a formal existing agreement (on Judicial Papers) in the form of a joint venture or consortium. In the case of a joint venture or consortium, all members shall be jointly and severally liable for the execution of the Contract in accordance with the terms and conditions of the Contract. The joint venture or consortium shall nominate a Lead Member as nominated in the BDS, who shall have the authority to conduct all business for and on behalf of any and all the members of the joint venture or consortium during the Bidding process, and in case of award of contract, during the execution of contract. Verifiable copy of the agreement that forms a joint venture, consortium or association shall be required to be submitted as part of the Bid.

Any bid submitted by the joint venture, consortium or association shall indicate the part of proposed contract to be performed by each party and each party shall be evaluated (or post qualified if required) with respect to its contribution only, and the responsibilities of each party shall not be substantially altered without prior written approval of the Procuring Agency and in line with any instructions issued by the Authority.

(The limit on the number of members of JV or Consortium may be prescribed

in BDS, in accordance with the guidelines issued by the PPRA).

3.2. The invitation for bids is open to all prospective bidders subject to any provisions of incorporation or licensing by the respective national/international incorporating agency or statutory body established for that particular trade or business. Procuring agencies shall specify the registration/licensing requirements for the foreign bidder keeping in view the requirement of that business.

3.3. A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidders may be considered to have a conflict of interest with one or more parties in this Bidding process, if they:

3.3.1. are associated or have been associated in the past, directly or indirectly with a firm or any of its affiliates which have been engaged by the Procuring agency/Employer to provide consulting services for the preparation of design or technical specifications of the works that are the subject of the bid; or

3.3.2. have controlling shareholders in common; or

3.3.3. receive or have received any direct or indirect subsidy from any of them; or

3.3.4. have the same legal representative for purposes of this Bid; or

3.3.5. 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, or influence the decisions of the Procuring agency/Employer regarding this Bidding process; or

3.3.6. Submit more than one bid in this bidding process.

3.4. A Bidder may be ineligible if –

3.4.1. he is declared bankrupt or, in the case of company or firm, insolvent;

3.4.2. payments in favor of the bidder is suspended in accordance with the judgment of a court of law other than a judgment declaring bankruptcy and resulting (in accordance with the national laws) in the total or partial loss of the right to administer and dispose of its property;

3.4.3. the bidder is convicted, by a final judgment of a Court of Law or relevant Professional Statutory Body, of any offence involving professional conduct;

3.4.4. The bidder is debarred/ blacklisted by a national level Procuring agency/Employer and hence debarred due to involvement in corrupt and fraudulent practices, or performance failure or due to breach of bid securing declaration.

3.5. As and when required, bidders shall provide to the Procuring agency/Employer evidence of their eligibility, proof of compliance with the necessary legal requirements to carry out the contract effectively.

3.6. Bidders shall submit proposal relating to the nature, conditions and modalities of sub-contracting wherever the sub-contracting of any elements of the contract is envisaged.

4. Eligible Material and Equipment

4.1. All the material and equipment to be mobilized under the contract shall have their origin in eligible source countries, and all expenditures made under the contract will be limited to such materials and equipment. For this purpose, ineligible countries are stated in the section-IV titled as “Eligible Countries”.

B. BIDDING DOCUMENTS

5. Contents of Bidding Documents

5.1. The scope of Works, bidding procedures, and terms and conditions of the contract are prescribed in the bidding documents. In addition to the Invitation for Bids, the bidding documents which should be read in

conjunction with any addenda issued in accordance with ITB 7.1 include:

Section I -Invitation for Bids

Section II Instructions to Bidders (ITBs)

Section III Bid Data Sheet (BDS)

Section IV Eligible Countries

Section V Evaluation and Qualification Criteria

Section VI Works Requirements Technical Specifications & Schedule of Requirements

Section VII Standard Bidding Forms

Section VIII General Conditions of Contract (GCC)

Section IX Particular Conditions of Contract (PCC)

Section X Contract Forms

5.2. The bidder is expected to examine all instructions, forms, specifications, terms and conditions prescribed in the bidding documents. Failure to furnish all the information required in the bidding documents will be at the bidder's risk and may result in the rejection of his bid.

6. Clarification of Bidding Document, Pre-bid Meeting

6.1. A prospective bidder requiring any clarification of the bidding document may notify the Procuring agency/Employer through EPADS.

6.2. The Procuring agency/Employer shall respond to the request for clarification in accordance with Rule 31 of the Public Procurement Rules 2004.

6.3. Should the Procuring Agency deem it necessary to amend the BIDDING document as a result of a clarification, it shall do so following the procedure under ITB 7.

6.4. If indicated in the BDS, the bidder's designated representative is invited at the bidder's cost to attend a pre-bid meeting at the place, date and time mentioned in the BDS. During this pre-bid meeting, prospective bidders may request clarification of the schedule of requirement, the evaluation criteria or any other aspects of the bidding documents.

6.5. Minutes of the pre-bid meeting, if applicable, including the text of the questions asked by bidders, including those during the meeting (without identifying the source) and the responses given, together with any responses prepared after the meeting will be uploaded on EPADS. Any modification to the bidding documents that may become necessary as a result of the pre-bid meeting shall be made by the Procuring agency/Employer exclusively through the use of an Addendum pursuant to ITB 7. Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

6.6. The bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the bidder's own expense.

6.7. The bidder and any of its authorized personnel will be granted permission by the Procuring agency/Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the bidder and its personnel will release and indemnify the Procuring agency/Employer from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

7. Amendment of Bidding Documents

7.1. The procuring agency may issue notification of any change, addition, modification or deletion in accordance with Rule 23 of the Public Procurement Rules 2004 i.e. Bidding Documents.

7.2. To give prospective bidders reasonable time in which to take an addendum/corrigendum into account in preparing their bids, the Procuring agency/Employer may, at its discretion, extend the deadline for the submission of bids:

Provided that the Procuring agency/Employer shall extend the deadline for submission of bid in pursuance of Rule 27 of the Public Procurement Rules 2004, i.e. Extension of time for submission of bids, if such an addendum is

issued within last three (03) days of the bid submission deadline.

C. PREPARATION OF BIDS

8. Language of Bid

8.1. The bid prepared by the bidder, as well as all correspondence and documents relating to the bid exchanged by the bidder and the Procuring agency/Employer shall be written in the English language unless specified in the BDS. Supporting documents and printed literature furnished by the bidder may be in another language provided they are accompanied by an accurate translation of the relevant pages in the English language unless specified in the BDS, in which case, for purposes of interpretation of the bidder, the translation shall govern.

9. Documents Constituting the Bids

9.1. The Bids prepared by the Bidder shall constitute of all the documents required in the BDS.

10. Documents Establishing Eligibility of Material, Equipment and Works, their Conformity to Bidding Documents

10.1. The bid prepared by the bidder shall constitute the following components: -

10.1.1. Documentary evidence established in accordance with ITB 10 that the material and equipment to be utilized by the Bidder for the executions of works are eligible material and equipment and conform to the Bidding Documents;

10.1.2. Documentary evidence established in accordance with ITB 11 that the bidder has been authorized to carry out the Construction works;

10.1.3. Documentary evidence established in accordance with ITB 11 that the bidder is eligible and/or qualified for the subject bidding process;

10.1.4. Form of Bid and Bid Prices completed in accordance with ITB 12 and 13;

10.1.5. Completed schedules as required, including priced Bill of Quantities in accordance with ITB 13.

10.1.6. Technical Proposal completed in all aspects in accordance with ITB-15.

10.1.7. Bid security or Bid Securing Declaration furnished in accordance with ITB 17;

10.1.8. Any other document required in the BDS.

10.2. In addition to the requirements, bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by all members and submitted with the bid, together with a copy of the proposed Agreement.

10.3. The bidder shall furnish, as part of its bid, all those documents establishing the eligibility in conformity to the terms and conditions specified in the bidding documents for all material, equipment and works which the bidder proposes to execute.

10.4. The documentary evidence of conformity of the material, equipment and works to the Bidding Documents may be in the form of literature, drawings, and data, and shall consist of:

10.4.1. a detailed description of the work methodology, approach, schedule and resources to be mobilized at site;

10.4.2. an item-by-item commentary on the Procuring agency/Employer's Technical Specifications demonstrating substantial responsiveness of the material, equipment and works to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications;

10.4.3. any other procurement specific documentation requirement as stated in the BDS.

10.5. The required documents and other accompanying documents must be in English. In case any other language than English is used the pertinent translation into English shall be attached to the original version.

11. Documents Establishing Eligibility and Qualification of the Bidder

11.1. The bidder shall furnish, as part of its bid, all those documents establishing the bidder's eligibility to participate in the bidding process and/or its qualification to perform the contract if its bid is accepted.

11.2. The documentary evidence of the bidder's eligibility to bid shall establish to the satisfaction of the Procuring agency/Employer that the bidder, at the time of submission of its bid, is from an eligible country as defined in Section-IV titled as "Eligible Countries".

11.3. The documentary evidence of the bidder's qualification to perform the contract if its bid is accepted shall establish to the satisfaction of Procuring agency/Employer that:

11.3.1. The bidder has the financial and technical capability necessary to perform the Contract, meets the qualification criteria specified in Section-V, Evaluation and Qualification Criteria and BDS.

11.3.2. In the case of a bidder not doing business within Pakistan, the bidder is or will be (if awarded the contract) represented by a local bidder (Joint Venture) in accordance with the PEC works bylaws, and in case of award of works such foreign firm is required to participate in the execution of works to carry out its obligations as prescribed in the Conditions of Contract and /or Technical Specifications.

11.3.3. That the bidder meets the qualification criteria listed in Section-V, Evaluation and Qualification Criteria and BDS.

12. Forms of Bid

12.1. The Bidder shall fill the Form of Bids furnished in the bidding documents. The Bids Form must be completed without any alterations to its format and no substitute shall be accepted.

13. Bid Prices

13.1. The bid prices quoted by the bidder in the Standard bid Forms, Bill of Quantities and in the Price Schedules shall conform to the requirements specified below or exclusively mentioned hereafter in the bidding documents.

13.2. The bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. If a Price Schedule shows items listed but not priced, their prices shall be construed to be included in the prices of other items in the Bill of Quantities and will not be paid for separately by the Procuring agency/Employer.

13.3. Items not listed in the Price Schedule shall be assumed not to be included in the bid, and provided that the bid is still substantially responsive in their absence or due to their nominal nature, the corresponding average price of the respective item(s) of the remaining substantially responsive bidder(s) shall be construed to be the price of those missing item(s):

Provided that:

13.3.1. where there is only one (substantially) responsive bidder, or

13.3.2. where there is provision for alternate proposals and the respective items are not listed in the other bids,

The Procuring agency/Employer may fix the price of missing items in accordance with market survey, and the same shall be considered as final price.

13.4. The Bid price to be quoted in the Form of Bid in accordance with ITB 12 shall be the total price of the bid.

13.5. Unless otherwise specified in the BDS and the Contract, the rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the

Conditions of Contract.

13.6. If so specified in ITB 1.1, bids may be invited for individual lots (contracts) or for any combination of lots (packages).

13.7. Prices quoted by the Bidder shall be fixed during the bidder's performance of the contract and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and shall be rejected, pursuant to ITB 27, unless otherwise price adjustment is permissible under Conditions of the Contract.

13.8. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date twenty-eight (28) days prior to the deadline for submission of bids, shall be included in the rates and prices and the total bid price submitted by the bidder.

14. Currencies of Bid and Payment

14.1. Prices shall be quoted in Pakistani Rupees unless otherwise specified in the BDS. Comparison of bids and tie of bid shall be treated in accordance with the Rule 30(2) of Public Procurement Rules, 2004.

15. Documents Comprising the Technical Proposal

15.1. The bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section VII – Standard Bid Forms, in sufficient detail to demonstrate the adequacy of the bidder's proposal to meet the work requirements and the completion time.

16. Bid Validity Period

16.1. Bids shall remain valid for the period specified in the BDS after the bid submission deadline prescribed by the Procuring agency/Employer. A bid valid for a shorter period shall be rejected by the Procuring agency/Employer as non-responsive. The period of bid validity will be determined from the complementary bid securing instrument i.e. the expiry period of bid security or bid securing declaration as the case may be.

16.2. Under exceptional circumstances, prior to the expiration of the initial Bids/Bid validity period, the Procuring Agency may request the Bidders' consent to an extension of the period of validity of their Bids/Bid. Such request for extension of the period of bid validity shall be carried out in accordance with Rule 26 of the Public Procurement Rules, 2004.

17. Bid Security or Bid Securing Declaration

17.1. Pursuant to ITB 11.1 unless otherwise specified in the BDS, the bidder shall furnish as part of its bid, a Bid Security in accordance with Rule 25 of the Public Procurement Rules, 2004 in the amount and currency specified in the BDS or Bid Securing Declaration as specified in the BDS in the format provided in Section VII (Standard Bidding Forms).

In case Procuring agency/Employer is inviting bids in lots / packages, the bidder shall be required to submit his bid security against the respective lot/package for which he is submitting his bid.

Until the development of functionality of auto verification of financial instrument in EPADS, the scanned copy of bid security or bid securing declaration, as the case may be, shall be uploaded on E-PADS whereas the original instrument to be submitted to the procuring agency before closing of bid submission deadline,

17.2. The Bid Security shall be denominated in the local currency or in another freely convertible currency, and it shall be in the form specified in the **BDS** which shall be in any of the following:

17.2.1. A bank guarantee, an irrevocable letter of credit issued by a Scheduled bank in the form provided in the Bidding Documents or another form acceptable to the Procuring agency/Employer and valid for twenty-eight (28) days beyond the end of the validity of the Bid. This shall also apply if the period for Bid Validity is extended. In either case, the form must include the complete name of the bidder;

17.2.2. A cashier's or certified cheque; or

17.2.3. Another security as indicated in the **BDS**.

17.3. The Bid Security or Bid Securing Declaration shall be in accordance with the Form of the Bid Security or Bid Securing Declaration included in Section VII (Standard Bidding Forms) or another form approved by the Procuring agency/Employer prior to the bid submission.

17.4. The Bid Security shall be payable promptly upon written demand by the Procuring agency/Employer in case any of the conditions listed in ITB 17.9 are invoked.

17.5. Any bid not accompanied by a Bid Security or Bid Securing Declaration in accordance with ITB 17.1 or 17.3 shall be rejected by the Procuring agency/Employer and shall be declared as non-responsive bid, pursuant to ITB 27.

17.6. Unsuccessful bidders' Bid Security will be discharged or returned as promptly as possible, however in no case later than thirty (30) days after the expiration of the period of Bid Validity prescribed by the Procuring agency/Employer pursuant to ITB 16. The Procuring agency/Employer shall make no claim to the amount of the Bid Security, and shall promptly return the Bid Security document, after whichever of the following that occurs earliest:

17.6.1. The expiry of the Bid Security;

17.6.2. The entry into force of a procurement contract and the provision of a performance security (or guarantee), for the performance of the contract if such a security (or guarantee), is required by the Bidding documents;

17.6.3. The rejection by the Procuring agency/Employer of all Bids;

17.6.4. The withdrawal of the bid prior to the deadline for the submission of bids, unless the bidding documents stipulate that no such withdrawal is permitted.

17.7. The successful bidder's Bid Security will be discharged upon the bidder signing the contract pursuant to ITB 40, or furnishing the performance security (or guarantee), pursuant to ITB 41.

17.8. The Bid Security may be forfeited or the Bid Securing Declaration executed:

17.8.1. if a Bidder:

17.8.1.1. Withdraws its Bid during the period of Bid Validity as specified by the Procuring agency/Employer, and referred by the bidder on the Form of Bid except as provided for in ITB 16.2; or

17.8.2. In the case of a successful bidder, if the bidder fails:

17.8.2.1. to sign the contract in accordance with ITB 40; or

17.8.2.2. to furnish performance security (or guarantee) in accordance with ITB 41.

17.9. In case of Bid Security issued by the foreign bank is allowed by the Procuring agency/Employer, the same should be counter guaranteed by a corresponding bank in Pakistan. Furthermore, in case of joint venture, it should be in the name of Joint venture to ensure joint responsibility. In case the JV is not legally constituted at the time of bid submission, the bid security or bid securing declaration shall be in the names of all future members as named in the letter of bid.

18. Withdrawal of Bids

18.1. Before bid submission deadline, any bidder may withdraw, substitute, or modify its bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and the corresponding must accompany the respective written notice.

19. Format and Signing of Bid

19.1. The Bidder shall prepare and submit Bids through EPADS with due diligence after carefully reading all the terms and condition before bid submission deadline.

D. SUBMISSION OF BIDS

20. Submission of Bids through EPADS v2.0

20.1. All bids shall be submitted through EPADS v2.0.

21. Deadline for Submission of Bids

21.1. All bids shall be received through **EPADS v2.0** not later than bid submission deadline as specified in the **BDS**.

21.2. The Procuring agency/Employer may, under exceptional circumstances and at its discretion, extend the deadline for the submission of bids, pursuant to Rule 27 of the Public Procurement Rules, 2004. Extension of Time for submission of bid, by amending the Bidding Documents in accordance with ITB 7, in which case all rights and obligations of the Procuring agency/Employer and bidders previously subject to the deadline will thereafter be subject to the new deadline.

22. Substitution and Modification of bids

22.1. A bidder may substitute or modify his bid after it has been submitted, provided that written notice of the substitution or modification of the bid, is received by the Procuring agency/Employer prior to the deadline for submission of bids.

22.2. Revised bid may be submitted after the substitution or modification made in the original bid in accordance with the provisions referred in **ITB 18**.

E. OPENING AND EVALUATION OF BIDS

23. Opening of Bids

23.1. The Procuring Agency will open bids in accordance with Rule 28 of the Public Procurement Rules, 2004 and as specified in the BDS.

24. Confidentiality

24.1. Information relating to the examination, clarification, evaluation and comparison of bids and recommendation of contract award shall not be disclosed to bidders or any other persons not officially concerned with such process until the time of the announcement of the respective evaluation report.

25. Clarification of Bids

25.1. Clarification of Bidding Documents shall be carried out in accordance with Rule 31 of the Public Procurement Rules, 2004.

25.2. The alteration or modification in the bid which in any case affect the following parameters will be considered as a change in the substance of a bid:

- 25.2.1. evaluation & qualification criteria;
- 25.2.2. required scope of work;
- 25.2.3. contract price;
- 25.2.4. all securities requirements;
- 25.2.5. tax requirements;
- 25.2.6. terms and conditions of bidding documents.
- 25.2.7. change in the ranking of the bidder

26. Preliminary Examination of Bids

26.1. Prior to the detailed evaluation of bids, the Procuring agency/Employer will determine whether each bid:

- 26.1.1. meets the eligibility criteria defined in **ITB 3** and **ITB 4**;
- 26.1.2. has been prepared as per the format and contents defined by the Procuring agency/Employer in the bidding documents;
- 26.1.3. has been properly signed;

26.1.4. is accompanied by the required securities; and

26.1.5. is substantially responsive to the requirements of the bidding documents.

The Procuring agency/Employer's determination of a bid's substantial responsiveness will be based on the contents of the bid itself.

26.2. A substantially responsive Bid is one which conforms to all the terms, conditions, and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one that: -

26.2.1. affects in any substantial way the scope, quality, or performance of the Works;

26.2.2. limits in any substantial way, inconsistent with the bidding documents, the Procuring agency/Employer's rights or the bidders' obligations under the Contract; or

26.2.3. if rectified, would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

26.3. The Procuring agency/Employer will confirm that the documents and information specified under ITB 9, 10 and 11 have been provided in the bid. If any of these documents or information is missing, or is not provided in accordance with the Instructions to Bidders, the bid shall be rejected.

26.4. The Procuring agency/Employer may waive-off any minor informality, nonconformity, or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

Explanation: A minor informality, non-conformity or irregularity is one that is merely a matter of form and not of substance. It also pertains to some immaterial defect in a Bid or variation of a bid from the exact requirements of the invitation that can be corrected or waived without being prejudicial to other bidders. The defect or variation is immaterial when the effect on quantity, quality, or delivery is negligible when contrasted with the total cost or scope of the works. The Procuring agency/Employer either shall give the bidder an opportunity to cure any deficiency resulting from a minor

informality or irregularity in a bid or waive the deficiency, whichever is advantageous to the Procuring agency/Employer. Examples of minor informalities or irregularities include failure of a bidder to –

26.4.1. Submit the number of copies of signed bids required by the invitation;

26.4.2. Furnish required information concerning the number of its employees;

26.4.3. the firm submitting a bid has formally adopted or authorized, before the date set for opening of bids, the execution of documents by typewritten, printed, or stamped signature and submits evidence of such authorization and the bid carries such a signature.

26.5. Provided that a Technical Bid is substantially responsive, the Procuring agency/Employer 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 Technical Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any such aspect of the technical Proposal linked with the ranking of the bidders. Failure of the bidder to comply with the request may result in the rejection of its bid.

26.6. Provided that a Technical Bid is substantially responsive, the Procuring agency/Employer shall rectify quantifiable nonmaterial nonconformities or omissions related to the Financial Proposal. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of the missing or nonconforming item or component.

26.7. If a bid is not substantially responsive, it will be rejected by the Procuring agency/Employer and may not subsequently be evaluated for complete technical responsiveness.

27. Examination of Terms and Conditions; Technical Evaluation

27.1. The Procuring agency/Employer shall examine the bid to confirm that all terms and conditions specified in the **GCC** and the **PCC** have been

accepted by the bidder without any material deviation or reservation.

For this purpose:

“Deviation” means departure from the requirements specified in the Bidding Document.

“Reservation” means setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document.

27.2. The Procuring agency/Employer shall evaluate the technical aspects of the bid submitted in accordance with ITB 30, to confirm that all requirements specified in Section VI – Works Requirement, Technical Specifications of the Bidding Documents have been met without material deviation or reservation.

27.3. If after the examination of the terms and conditions and the technical evaluation, the Procuring agency/Employer determines that the bid is not substantially responsive in accordance with ITB 27, it shall reject the bid.

28. Correction of Arithmetic Errors

28.1. Bids determined to be substantially responsive will be checked for any arithmetic errors. Errors will be corrected as follows: -

28.1.1. if there is a discrepancy between unit prices and the sub-total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the sub-total price shall be corrected, unless in the opinion of the Procuring agency/Employer there is an obvious misplacement of the decimal point in the unit price, in which the total price as quoted shall govern and the unit price shall be corrected;

28.1.2. if there is an error in a total corresponding to the addition or subtraction of sub-totals, the sub-totals shall prevail, and the total shall be corrected; and

28.1.3. where there is a discrepancy between the amounts in figures and in words, the amount in words will govern.

28.1.4. Where there is discrepancy between grand total of price schedule and amount mentioned on the Form of Bid, the amount referred in Price Schedule shall be treated as correct subject to elimination of other errors.

28.2. The amount stated in the Bid will, be rectified by the Procuring agency/Employer in accordance with the above procedure for the correction of errors and, with, the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount, its bid shall be rejected after forfeiture of Bid Security or execution of the Bid Securing Declaration, as the case may be, in accordance with **ITB 41.3**.

29. Conversion to Single Currency

29.1. The unit rates and the prices shall be quoted by the bidder entirely in Pak rupees. A bidder expecting to incur expenditures in other currencies for inputs to the Works from outside the Procuring agency/Employer's country (referred to as the "Foreign Currency Requirements") shall indicate the same in the letter of bid-financial proposal. The proportion of the Bid Price (excluding Provisional Sums) needed by him for the payment of such Foreign Currency Requirements either (i) entirely in the currency of the Bidder's home country or, (ii) at the bidder's option, entirely in Pak rupees provided always that a bidder expecting to incur expenditures in a currency or currencies other than those stated in (i) and (ii) above for a portion of the foreign currency requirements, and wishing to be paid accordingly, shall indicate the respective portions in his bid. Comparison of bids quoted in different currencies and conversion of bids into a single currency shall be carried out in accordance with Rule 30(2) of the Public Procurement Rules, 2004.

30. Evaluation of Bids

30.1. The Procuring agency/Employer shall evaluate and compare only the bids determined to be substantially responsive, pursuant to **ITB 27**.

30.2. In evaluating the Technical Proposal of each Bid, the Procuring agency/Employer shall use the criteria and methodologies listed in the BDS

and in terms of works requirement. No other evaluation criteria or methodologies shall be permitted.

30.3. The Procuring agency/Employer's evaluation of a bid will take into account:

30.3.1. the bid price, excluding provisional sums and the provision, if any, for contingencies in the summary bill of quantities, but including day work items, where priced competitively;

30.3.2. converting the amount resulting from applying above, if relevant, to a single currency in accordance with ITB 29;

30.4. The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.

30.5. If these bidding documents allow bidders to quote separate prices for different lots, and the award to a single bidder of multiple lots, the methodology of evaluation to determine the lowest evaluated lot combinations in the Form of Bid, is specified in the **BDS**.

30.6. If the bid, which results in the Evaluated Bid Price (Successful Bid), is seriously unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

Explanation:

"Unbalanced" or "front-loaded" bids consist of deliberately submitting bids with artificially high prices or unit rates for the early stages of a construction project, offset by artificially low prices or unit rates for the later stages of the project, to improve the contractor's cash flow.

31. Domestic Preference

31.1. If the **BDS** so specifies, the Procuring agency/Employer will grant a margin of preference to the domestic contractor in line with the rules, regulations, regulatory guides or instructions issued by the Authority from time to time.

32. Determination of Successful Bid

32.1. The Procuring agency/Employer shall compare the evaluated bids in accordance with the predefined bidding procedure, of all substantially responsive bids to determine the Successful bidder.

33. Qualification of Bidder

33.1. The Procuring agency/Employer shall determine to its satisfaction whether the bidder is substantially responsive and whose bid is declared as Successful bid either continues to meet (if prequalification applies) or meets (if post-qualification applies) the qualifying criteria specified in Evaluation and Qualification Criteria.

Note: In case of international bidding, the parameters for incorporation or licensing within Pakistan may be fulfilled as part of post qualification.

33.2. The determination shall be based upon an examination of the documentary evidence of the bidder's qualifications submitted by the bidder, pursuant to **ITB 11**.

33.3. Prior to contract award, the Procuring agency/Employer will verify that the successful bidder (including each member of a JV) is not blacklisted/debarred. The Procuring agency/Employer will conduct the same verification for each sub-contractor proposed by the successful bidder.

34. Sub-Contractors

34.1. The bidder shall provide details regarding any specialized sub-contractor to the Procuring agency/Employer. In case change of sub-contractors, the bidder shall promptly notify the Procuring agency/Employer and obtain approval for replacement of sub-contractors.

34.2. Bidders may propose sub-contracting up to the percentage of total value of contracts or the volume of works as specified in the **BDS**.

35. **Abnormally Low Financial Bid**

35.1. A procuring Agency may reject abnormally low bids. The decision of the Procuring agency/Employer to reject a bid and reasons for the decision shall be recorded in the procurement proceedings and promptly communicated to the bidder concerned. Moreover, the Procuring agency/Employer shall not incur any liability solely by rejecting abnormally bid

Guidance for Procuring agency/Employer:

An abnormally low bid means, in the light of the Procuring agency/Employer's estimate and of all the bids submitted, the bid appears to be abnormally low by not providing a margin for normal levels of profit. In order to identify the Abnormally Low Bid (ALB) following approaches can be considered to minimize the scope of subjectivity:

35.1.1. Comparing the bid price with the cost estimate;

35.1.2. Comparing the bid price with the bids offered by other bidders submitting substantially responsive bids; and

35.1.3. Comparing the bid price with prices paid in similar contracts in the recent past either government- or development partner-funded.

35.2. The Procuring agency/Employer will determine to its satisfaction whether the bidder that is selected as having submitted the successful bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in **ITB 11**

35.3. The determination will take into account the bidder's financial and technical capabilities. It will be based upon an examination of the documentary evidence of the bidder's qualifications submitted by the bidder, pursuant to **ITB 11**, as well as such other information as the Procuring agency/Employer deems necessary and appropriate. Factors not included in these bidding documents shall not be used in the evaluation of the bidders' qualifications.

35.4. Procuring agency/Employer may seek “Certificate for Independent Price Determination” from the bidder and the results of reference checks may be used in determining award of contract.

Explanation: The Certificate shall be furnished by the bidder. The bidder shall certify that the price is determined keeping in view of all the essential aspects such as raw material, its processing, value addition, optimization of resources due to economy of scale, transportation, insurance and margin of profit etc.

35.5. An affirmative determination will be a prerequisite for award of the contract to the bidder. A negative determination will result in rejection of the bidder’s bid, in which event the Procuring agency/Employer will proceed to the next ranked bidder to make a similar determination of that bidder’s capabilities to perform satisfactorily.

F. AWARD OF CONTRACT

36. **Criteria of Award**

36.1. Subject to **ITB 36 and 37**, the Procuring agency/Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has been declared as Successful Bidder, provided that such bidder has been determined to be:

36.1.1. eligible in accordance with the provisions of **ITB 3**;

36.1.2. is determined to be qualified to perform the Contract satisfactorily;
and

36.1.3. Successful negotiations have been concluded, if any.

37. **Negotiations**

37.1. The Committee of the Procuring agency/Employer may negotiate with the Most Advantageous Bidder relating to the following areas:

37.1.1. a minor alteration to the technical (drawings, design technical specifications) details of the statement of works;

37.1.2. Methodology, work plan, staffing in view to streamline the work;

37.1.3. a minor amendment to the Particular conditions of Contract;

37.1.4. finalizing payment arrangements;

37.1.5. clarifying details that were not apparent or could not be finalized at the time of Bidding;

37.2. Where negotiation fails to result into an agreement, the Procuring agency/Employer may invite the next ranked bidder for negotiations. Where negotiations are commenced with the next ranked bidder, the Procuring agency/Employer shall not reopen earlier negotiations.

38. Procuring agency's Right to reject All Bids

38.1. The procuring agency has the right to reject all bids in accordance with Rule 33 of the Public Procurement Rules, 2004. However, the Authority (i.e. **PPRA**) may call from the Procuring agency/Employer the justification of those grounds.

39. Notification of Award

39.1. The procuring agency shall announce and publish the evaluation result in accordance with Rule 35 of the Public Procurement Rules, 2004.

39.2. Where no complaints have been lodged, the bidder whose bid has been accepted will be notified of the award by the Procuring agency/Employer prior to expiration of the bid validity period through EPADS. However, the Procuring agency/Employer shall not award any procurement contract at least for five (05) days after the announcement of final evaluation report. The notification letter (herein after and in the condition of the contract and contract form called "Letter of Acceptance" will specify the sum that the Procuring agency/Employer will pay the successful bidder in consideration for the execution and completion of the

works as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price).

39.3. The notification of award will constitute the formation of the Contract, subject to the bidder furnishing the Performance Security (or guarantee) in accordance with **ITB 41** and signing of the contract in accordance with **ITB 40**.

39.4. Upon the successful bidder's furnishing of the performance security (or guarantee) pursuant to **ITB 41**, the Procuring agency/Employer will promptly notify each unsuccessful bidder, the name of the successful bidder and the Contract amount and will discharge the Bid Security or Bid Securing Declaration of the bidder(s) pursuant to **ITB 17**.

40. Signing of Contract

40.1. Promptly after notification of award, Procuring agency/Employer shall send the successful bidder the draft agreement, incorporating all terms and conditions as agreed by the parties to the contract.

40.2. Immediately after the Redressal of grievance by the **GRC**, and after fulfillment of all conditions precedent of the Contract Form, the successful bidder and the Procuring agency/Employer shall sign the contract.

40.3. Where no formal signing of a contract is required, work order issued to the bidder shall be construed to be the contract.

41. Performance Security (or Guarantee)

41.1. After the receipt of the Letter of Acceptance, the successful bidder, within the specified time, shall deliver to the Procuring agency/Employer a Performance Guarantee in the amount and in the form stipulated in the BDS and PCC, denominated in the type and proportions of currencies in the Letter of Acceptance and in accordance with the Conditions of Contract.

41.2. If the Performance Guarantee is provided by the successful bidder and it shall be in the form specified in the BDS which shall be in any of the following:

41.2.1. certified cheque, cashier's or manager's cheque, or bank draft;

41.2.2. irrevocable letter of credit issued by a scheduled bank of Pakistan or in the case of an irrevocable letter of credit issued by a foreign bank, the letter shall be confirmed or authenticated by a scheduled bank of Pakistan;

41.2.3. bank guarantee confirmed by a reputable local bank or, in the case of a successful foreign bidder, bonded by a foreign bank; or

41.2.4. surety bond callable upon demand issued by any reputable surety or insurance company.

Any Performance Guarantee submitted shall be enforceable in Pakistan.

41.3. Failure of the Most Advantageous Bidder to comply with the requirement of **ITB 40** shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security or declare blacklisted (in case bid securing declaration is submitted) in which event the Procuring agency/Employer may make the award to the next most advantageous bidder or reinitiate the procurement process afresh (as a case may be).

42. **Advance Payment**

42.1. Advance payment will be provided to the bidder in percentage and in the manner as agreed by the both parties in terms of Conditions of the Contract.

42.2. The Procuring agency/Employer will provide an advance payment as stipulated in the Conditions of Contract, subject to a maximum amount, as stated and/or Conditions of the Contract. The advance payment request shall be accompanied by an advance payment security (guarantee) in the form provided in Section X. For the purpose of receiving the advance payment, the bidder shall make and estimate of, and include in its bid, the expenses that will relate to the purchase of equipment, machinery, materials, and on the engagement of labor during the first month beginning with the date of the Procuring agency/Employer's "**Notice to Commence**" as specified in the **PCC**.

43. General Performance of the Bidders

43.1. The Procuring agency/Employer reserves the right to obtain information regarding performance of the bidders on their previously awarded contracts / works. The Procuring agency/Employer may seek information / report from the previous employer for consideration. However, the Procuring agency/Employer shall incorporate such parameters in the evaluation criteria and accordingly decide the fate of the bid submitted.

44. Corrupt & Fraudulent Practices

44.1. Procuring agencies (including beneficiaries of Government funded projects and procurement) as well as Bidders/Suppliers/Contractors under Government financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts, and will avoid to engage in any corrupt and fraudulent practices.

G. GRIEVANCE REDRESSAL & COMPLAINT REVIEW MECHANISM

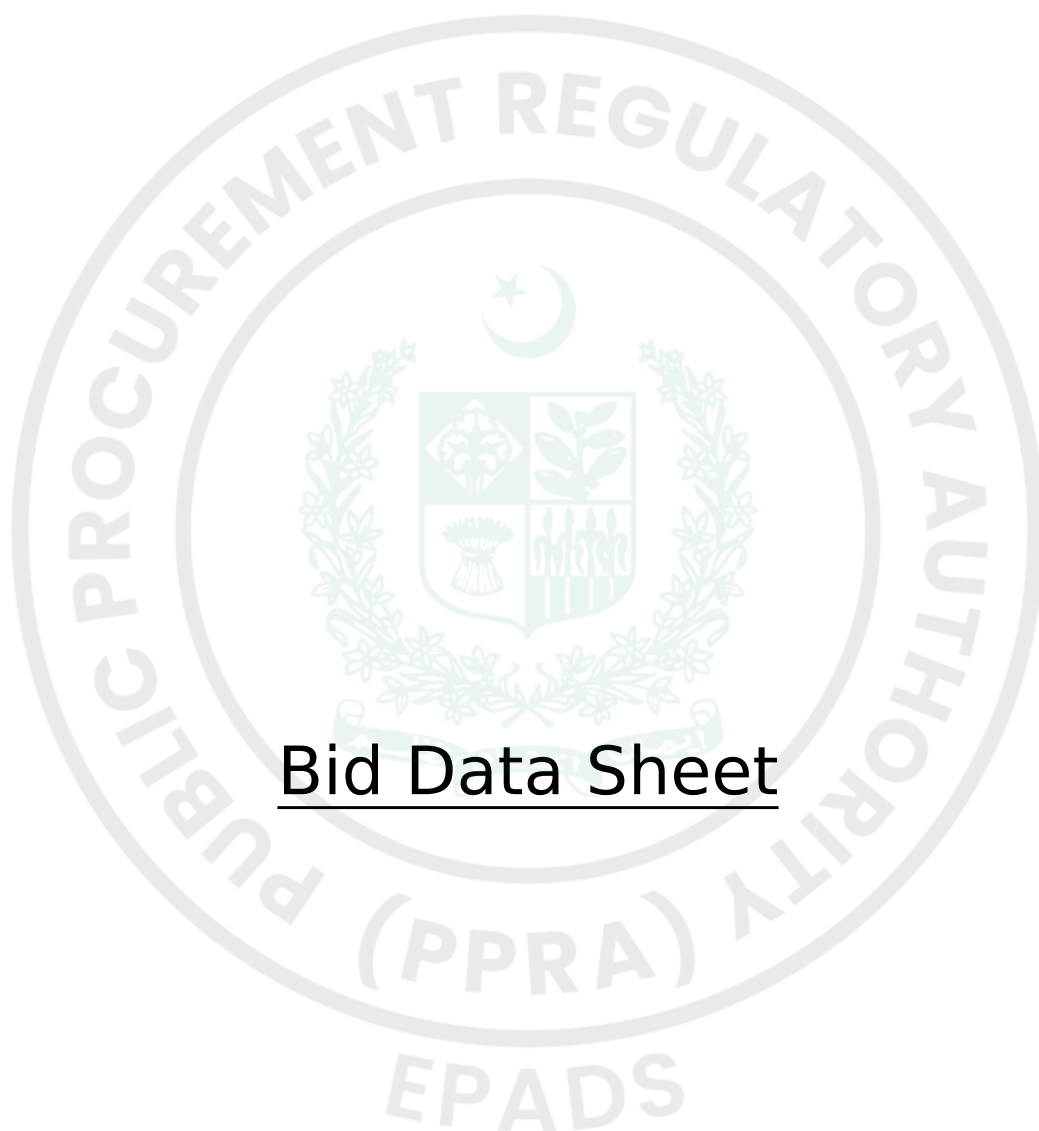
45. Grievance Redressal

45.1. Grievance Redressal shall be carried out in accordance with Rule 48 of the Public Procurement Rules, 2004 i.e. Redressal of grievances by the procuring agency and "Redressal of Grievances Regulations 2021".

H. MECHANISM OF BLACKLISTING

46. Mechanism of Blacklisting

46.1. The Procuring agency/Employer shall proceed Blacklisting of Bidders/Contractors in accordance with Rule 19 of the Public Procurement Rules, 2004 i.e. Blacklisting and "Blacklisting and Debarment of Bidders or Contractors Regulations 2024.



Bid Data Sheet

Bids Data Sheet (BDS)

The following specific data for the procurement of Goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

BDS Clause Number	ITB Number	Amendments of, and Supplements to, Clauses in the Instruction to Bidders
A. Introduction		
1	1.1	Name of Procuring Agency: Ministry of Housing and Works (Federal Government Employees Housing Authority) The subject of procurement is: WATER CONNECTION WORKS OF SECTOR 4C, 18C, 19C, 24B & 25BAT KDA SCHEME-33, GULZAR-E-HIJRI, KARACHI Expected commencement date: Thursday, November 12, 2026
2.	2.1	Financial year for the operations of the Procuring Agency: 2026-27 Name and identification number of the Contract: P135111
3.	3.1	JV/Consortium or Association Allowed: No Number of JV/Consortium Members: Nil
B. Bidding Documents		

4.	6.2 & 6.4	The Bidders may seek clarifications through EPADS v2.0: Clarification Date: Friday, October 30, 2026 Pre-Bid Meeting: Friday, October 23, 2026 12:00 PM Venue: 2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi.
5.	7.2	Any addendum, in case issued, shall be published on Ministry of Housing and Works (Federal Government Employees Housing Authority) website and on EPADS v2.0.
C. Preparation of Bids		
6.	8.1	List of documents required along with the bid: No
7.	9.1	The qualification criteria to establish the supply / production capability of the bidder. <i>see Eligibility Criteria</i>
8.	11.2	Works and Their related documents: <i>See section Required Scope of Work</i>
9.	11.1	Price schedule will be provided according to the format defined and acquired. <i>see section price schedule.</i>
10.	11.4	Specifications: <i>see section of specifications.</i>

11.	11.5 & 13.5	The price shall be Fixed . The bid price shall be adjusted in accordance with Appendix provided - Formula for Price Adjustment.
12.	14.1	Currency of the Bids shall be : PKR
13.	16.1	The Bids/Bid Validity period shall be: 120 Days
14.	17.1	The amount of Bid Security shall be as defined in Bid Security Section for items and lots given in BDS 6
15.	17.2	The Bid Security shall be in the form of: Pay Order, Call at Deposit
16.	15.1	Alternative Bids to the requirements of the bidding documents willnot be permitted.
D. Submission of Bids		
17.	18.1 & 21.1	Bid shall be submitted online on EPADS v2.0 whereas hard copy of the bid security should be submitted to the following; 2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi. Bids that are not submitted on EPADS v2.0 shall be disqualified. The deadline for Bids submission is: Monday, November 2, 2026 12:00 PM

E. Opening and Evaluation of Bids

18.	24.1	The Bids opening shall take place on EPADS v2.0. Day : Monday Date: November 02, 2026 Time : 12:30 PM
19.	30.2	Selection technique adopted will be: Least Cost Based Selection (LCBS) <i>see Evaluation Criteria</i>

F. Award of Contract

20.	41.1 & 41.2	The Performance guarantee shall: 10.00%. The Performance Guarantee shall be acceptable in the form of: Pay Order, Call at Deposit, Bank Guarantee
21.	45.1	Arbitrator shall be appointed by mutual consent of the both parties.

G. Review of Procurement Decisions

22.	37	Grievance against this procurement shall be submitted online on EPADS v2.0.
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Eligibility Criteria

Bidder's Type	Required Registration
Individual / Individual Consultant	NADRA CITIZENSHIP (CNIC/NICOP)
Sole Proprietorship	FBR (NTN)
Partnership Firm	FBR (GSTN)
Company (Private Limited)	PEC
Company (Public Limited)	
Company (Holding Company)	
Company (Limited by Guarantee)	
State Owned Enterprise (Private Limited)	
State Owned Enterprise (Public Limited)	

Eligibility Criteria	Document
Registration with PEC: Bidders must possess valid registration certificate of PEC in the category C-5 or above with specialization code CE09, CE10, CE11 Single Entity: Must Meet	Yes
Registration with Revenue Board: Bidders must possess valid registration certificate from FBR and Sindh Revenue Board. Single Entity: Must Meet	Yes
Registration with FBR (NTN)	Yes
Registration with FBR (GSTN)	Yes
Bid Security in the name of 'Federal Government Employees Housing Authority, Islamabad'	Yes

Evaluation Criteria

Least Cost Based Selection (LCBS)

Weightage

Technical Evaluation %	
100	
Technical Marks	100
Passing Marks	50
Financial Soundness:	
Available Bank Credit Line (50 million or above) Provide Original Bank Credit Line Letter duly certified by regional Branch of Bank. (Qualitative)(Doc Required)	5
Average Working Capital in last 5 years (100 million or above) Provide Firm Audited Financial Reports for the last 5 years. (Qualitative)(Doc Required)	10
Average Annual Financial Turnover in last 5 year - (50 million or above) Provide Firm Audited Financial Reports for the last 5 years. (Qualitative)(Doc Required)	5
Litigation History where decision went against the Firm. (Affidavit on Rs.100 Stamp Paper) (Qualitative)(Doc Required)	5
Blacklisting from any Agency (Affidavit on Rs.100 Stamp Paper) (Qualitative)(Doc Required)	5
Work Experience:	

Similar nature of works Completed in last 5 years: 1 Project (50 million or above) = 5 Points Or 2 Projects (25 million or above) = 5 Points (Provide Work Orders and Completion Certificate) (Qualitative)(Doc Required)	20
Similar nature of works in Hand: 1 Project (50 million or above) = 5 Points Or 2 Projects (25 million or above) = 5 Points (Provide Work Orders) (Qualitative)(Doc Required)	15
Status of enlistment with Government Organizations and other agencies. 1 Enlistment x 1 Point (Qualitative)(Doc Required)	5
Key Personnel:	
Engineers Registered with PEC a. B.Sc Engr (Civil) with 5+ years' experience (2 marks for one engineer) b. B.Sc Engr (Civil) with 3+ years' experience (1 mark for one engineer) (Qualitative)(Doc Required)	9
Diploma Engineers in Employment of the Firm a. Site Supervisor (DAE Civil) with 5+ years' experience (1 mark for one DAE Civil) b. Surveyor (DAE Civil) with 3+ years' experience (1 mark for one DAE Civil) (Qualitative)(Doc Required)	6
Plant & Equipment:	
Front End Loader (3CM) - Min 01 No (Qualitative)(Doc Required)	2
Excavator (0.3CM) - Min 02 No (Qualitative)(Doc Required)	2
Concrete Mixer Machine (One Bag Capacity) - Min 02 No (Qualitative)(Doc Required)	2
Generator (100KVA) - Min 01 (Qualitative)(Doc Required)	2
Plate Compactors - Min 02 (Qualitative)(Doc Required)	1
Water Browser - Min 02 (Qualitative)(Doc Required)	2
HDPE Pipe Joiner - Min 01 (Qualitative)(Doc Required)	2
Thrust Boring Machine - Min 01 (Qualitative)(Doc Required)	2

Jobs/Lots

Lot Title : WATER CONNECTION WORKS OF SECTOR 4C, 18C, 19C, 24B & 25BATKDASCHEME-33,GULZAR-E-HIJRI,KARACHI

Bid Security : 1504140 PKR

Job	Delivery Schedule	Quantity
Sector 4-C	Address: 2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi. Schedule: 180 Days Quantity: 1/job	1/job
Sector 18-C	Address: 2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi. Schedule: 180 Days Quantity: 1/job	1/job
Sector 19-C	Address: 2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi. Schedule: 180 Days Quantity: 1/job	1/job
Sector 24-B & 25-D	Address: 2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi. Schedule: 180 Days Quantity: 1/job	1/job

Related Services :

No



Work Specifications and Market Rates

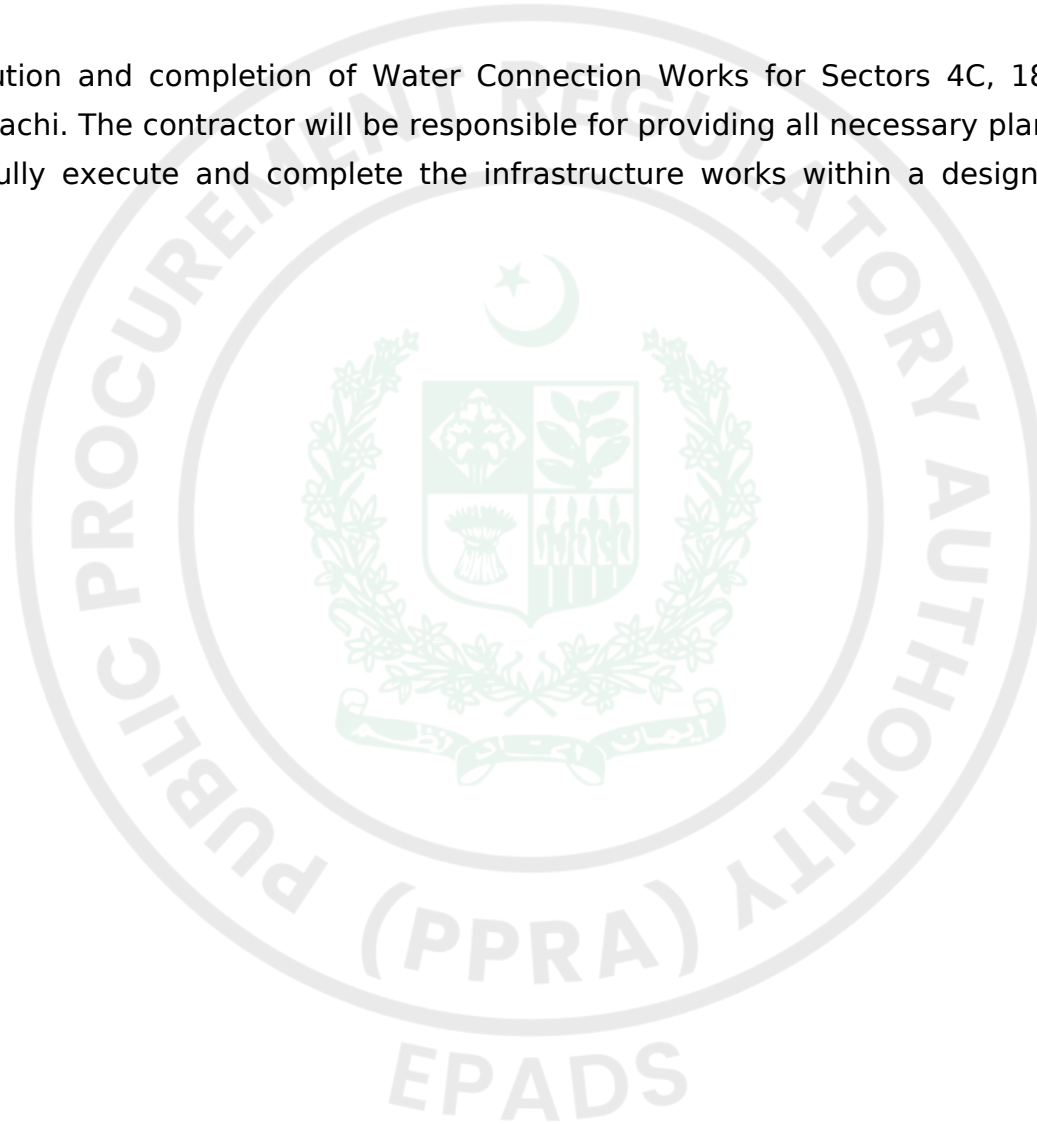
Lot Title: WATER CONNECTION WORKS OF SECTOR 4C, 18C, 19C, 24B & 25BATKDAScheme-33,GULZAR-E-HIJRI,KARACHI

Specifications / Requirements:

Sr. No	Ref. No.	Description	Unit	Qty	Rate		Amount
1		Sector 4-C Water Works (Detailed BOQ attached as Annexs)	Rs	1	2572313	(Rupees Two million, five hundred seventy-two thousand, three hundred thirteen)	2572313
2		Sector 18-C Water Works (Detailed BOQ attached as Annexs)	Rs	1	5109421	(Rupees Five million, one hundred nine thousand, four hundred twenty-one only)	5109421
3		Sector 19-C Water Works (Detailed BOQ attached as Annexs)	Rs	1	5412374	(Rupees Five million, four hundred twelve thousand, three hundred seventy-four only)	5412374
4		Sector 24-B & 25-B Water Works (Detailed BOQ attached as Annexs)	Rs	1	32763816	(Rupees Thirty-two million, seven hundred sixty-three thousand, eight hundred sixteen only)	32763816
						GRAND TOTAL:	Rs45,857,924.00

Scope of Work

The project entails the execution and completion of Water Connection Works for Sectors 4C, 18C, 19C, 24B, and 25B at KDA Scheme-33, Gulzar-E-Hijri, Karachi. The contractor will be responsible for providing all necessary plant, labor, supervision, materials, and equipment required to fully execute and complete the infrastructure works within a designated completion period of 180 calendar days



Price Schedule

For Individual Jobs

#	Job Title	Quantity	Unit Price (PKR)	Total Price (PKR)	Delivery Location	Delivery Period / Year	Country of Origin
1							
2							

For Lots

#	Lot Title	Total Lot Price (PKR)	Country of Origin
1	[Lot 1 Title]		





General Conditions of Contract

A. General

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract shall have the same meaning and shall be interpreted as indicated

1.1.1. “Applicable Law” means the laws and any other instruments having the force of law in the Government’s Country, or in such other country as may be specified in the Special Conditions of the Contract (SC), as they may be issued and in force from time to time;

1.1.2. “The Contract” means an agreement enforceable by law;

1.1.3. “The Contract Price” means the price payable to the Contractor under the Contract for the full and proper performance of its contractual obligations;

1.1.4. “The Services” means the work to be performed by the Contractor pursuant to this Contract and as prescribed in the Specifications and Schedule of Activities included in the Contractor’s Bid;

1.1.5. “Ancillary Services” means those services ancillary to the provision of Services, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Contractor covered under the Contract;

1.1.6. “GCC” means the General Conditions of Contract contained in this section;

1.1.7. “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented;

1.1.8. “Day” means calendar day unless indicated otherwise;

1.1.9. “Effective Date” means the date on which this Contract comes into force and effect;

1.1.10. “The Contractor” means the individual or corporate body whose Bids to provide the Services has been accepted by the Procuring Agency;

1.1.11. “The Project Site,” where applicable, means the place or places named in Bid Data Sheet and technical Specifications;

1.1.12. “Government” means the Government of Pakistan;

1.1.13. “Local Currency” means the currency of Pakistan;

1.1.14. “In Writing” means communicated in written form with proof of receipt;

1.1.15. “Completion Date” means the date of completion of the Services by the Contractor as certified by the Procuring Agency;

1.1.16. “Foreign Currency” means any currency other than the currency of the country of the Procuring Agency;

1.1.17. "Party" means the Procuring Agency or the Contractor, as the case may be, and "Parties" means both of them;

1.1.18. "Service" means any object of procurement other than goods or works;

1.1.19. "Subcontractor" means any entity to which the Bidder subcontracts any part of the Services.

2. Applicable Law

2.1. The contract shall be governed and interpreted in accordance with the laws of Pakistan, unless otherwise specified in SCC.

3. Language

3.1. The Contract as well as all correspondence and documents relating to the Contract exchanged between the Contractor and the Procuring Agency, shall be written in the **English language** unless otherwise stated in the SCC. Supporting documents and printed literature that are part of the Contract may be in another language provided these are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Contract, this translation shall govern.

4. Notices

4.1. Any notice, request, or consent made pursuant to this Contract shall be in writing and shall be deemed to have been made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram, or facsimile to such Party at the address specified in the SCC.

5. Location

5.1. The Services shall be performed at such locations as the Procuring Agency may approve and as specified in SCC.

5.2. A {DOCUMENTS}

6. Authorized Representatives / Authority of Member in charge

6.1. Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Procuring Agency or the Contractor may be taken or executed by the officials specified in the SCC.

B. Commencement, Completion, Modification, and Termination of Contract

7. Effectiveness of Contract

7.1. This Contract shall come into effect on the date the Contract is signed by both parties and such other later date as may be stated in the SCC.

8. Commencement of Services

8.1. The Contractor shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the SCC.

9. Program schedule

9.1. Before commencement of the Services, the Contractor shall submit to the Procuring Agency for approval a Program showing the general methods, arrangements, order and timing for all activities. The Services shall be carried out in accordance with the approved Program as updated.

10. Starting Date/Expiration Date

10.1. The Contractor shall start carrying out the Services Five (05) days after the date the Contract becomes effective, or at such other date as may be specified in the SCC.

10.2. Unless terminated earlier pursuant to Clause **GCC 14** hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the SCC.

11. Entire Agreement

11.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

12. Modification

12.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any modification(s) or variation(s) made by the other Party.

12.2. In cases of any modification(s) or variation(s), the prior written consent of the Procuring Agency is required.

13. Force Majeure

13.1. Definition

For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Contractor and which makes a Contractor's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

13.2. No Breach of Contract

The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under, this Contract in so far as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative

measures in order to carry out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.

13.3. Extension of Time

Any period within which a Contractor shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

13.4. Payments

During the period of their inability to perform the Services as a result of an event of Force Majeure, the Contractor shall be entitled to continue to be paid under the terms of this Contract, as well as to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Service after the end of such period.

14. Termination

14.1. By the Procuring Agency

The Procuring Agency may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (e) of this Clause. In such an occurrence the Procuring Agency shall give at least thirty (30) calendar days' written notice of termination to the Contractor in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e);

14.1.1. If the Contractor fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension;

14.1.2. If the Contractor becomes (or, if the Contractor consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

14.1.3. If the Contractor fails to comply with any final decision reached as a result of arbitration proceedings;

14.1.4. If, as the result of Force Majeure, the Contractor is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

14.1.5. If the Procuring Agency, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

14.2. By the Contractor

The Contractor may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Procuring Agency, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

14.2.1. If the Procuring Agency fails to pay any money due to the Contractor pursuant to this Contract and not subject to dispute within forty-five (45) calendar days after receiving written notice from the Contractor that such payment is overdue;

14.2.2. If, as the result of Force Majeure, the Contractor is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

14.2.3. If the Procuring Agency fails to comply with any final decision reached as a result of arbitration;

14.2.4. If the Procuring Agency is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Bidder may have subsequently approved in writing) following the receipt by the Procuring Agency of the Contractor's notice specifying such breach.

C. Obligations of the Contractor

15. General

15.1. Standard of Performance

15.1.1. The Contractor shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Contractor shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Procuring Agency, and shall at all times support and safeguard the Procuring Agency's legitimate interests in any dealings with the third parties;

15.1.2. The Contractor shall employ and provide such qualified and experienced Experts and Sub-Contractors as are required to carry out the Services.

15.2. Law Applicable to Services

The Contractor shall perform the Services in accordance with the Contract and in accordance with the Law of Pakistan and shall take all practicable steps to ensure that any of its Experts and Sub-Bidders, comply with the Applicable Law.

16. Conflict of Interests

16.1. Contractor Not to Benefit from Commissions and Discounts

The remuneration of the Contractor shall constitute the Contractor's sole remuneration in connection with this Contract or the Services, and the Contractor shall not accept for their own benefit any trade commission, discount, or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations under the Contract, and the Contractor shall use their best efforts to ensure that the Personnel, any Subcontractors, and agents of either of them similarly shall not receive any such additional remuneration.

16.2. Contractor and Affiliates Not to be Otherwise Interested in Project

The Contractor agree that, during the term of this Contract and after its termination, the Contractor and its affiliates, as well as any Subcontractor and any of its affiliates, shall be disqualified from providing Services (other than the Services and any continuation thereof) for any project resulting from or closely related to the Services.

16.3. Prohibition of Conflicting Activities

Neither the Bidder nor its Subcontractors nor the Personnel shall engage, either directly or indirectly, in any of the following activities:

16.3.1. during the term of this Contract, any business or professional activities in the Government's country which would conflict with the activities assigned to them under this Contract;

16.3.2. during the term of this Contract, neither the Contractor nor their Subcontractors shall hire public employees in active duty or on any type of leave, to perform any activity under this Contract;

16.3.3. after the termination of this Contract, such other activities as may be specified in the **SCC**.

17. Insurance to be Taken Out by the Contractor

17.1. The Contractor(a) shall take out and maintain, and shall cause any Subcontractors to take out and maintain, at its (or the Sub-contractors', as the case may be) own cost but on terms and conditions approved by the Procuring Agency, insurance against the risks, and for the coverage, as shall be specified in the **SCC**; and (b) at the Procuring Agency's request, shall provide evidence to the Procuring Agency showing that such insurance has been taken out and maintained and that the current premiums have been paid.

18. Contractor's Actions Requiring Procuring Agency's Prior Approval

18.1. The Contractor shall obtain the Procuring Agency's prior approval in writing before taking any of the following actions:

18.1.1. appointing such members of the Personnel not provided by the Contractor;

18.1.2. changing the Program of activities; and

18.1.3. any other action that may be specified in the **SCC**.

19. Reporting Obligations

19.1. The Contractor shall submit to the Procuring Agency the reports and documents in the numbers, and within the periods as prescribed by the Procuring Agency.

20. Liquidated Damages

20.1. Payments of Liquidated Damages

The Contractor shall pay liquidated damages to the Procuring Agency at the rate per day stated in the **SCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the **SCC**. The Procuring Agency may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

20.2. Correction for Over-payment

If the Intended Completion Date is extended after liquidated damages have been paid, the Procuring Agency shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The

Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in **SCC**.

20.3. Lack of performance penalty

If the Contractor has not corrected a Defect within the time specified in the Procuring Agency's notice, a penalty for Lack of performance will be paid by the Contractor. The amount to be paid will be calculated as a percentage of the cost of having the Defect corrected, assessed as specified in the Contractor

21. Performance Guarantee

21.1. Within the time stipulated in the acceptance letter from the Procuring Agency, the successful Bidder shall furnish the Performance Guarantee in shape and amount **specified in SCC**.

21.2. The proceeds of the Performance Guarantee shall be payable to the Procuring agency as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

21.3. The Performance Guarantee shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Procuring agency and shall be in the acceptable form as specified in **SCC**.

21.4. The Performance Guarantee will be discharged by the Procuring agency and returned to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless otherwise **specified in SCC**.

22. Sustainable Procurement

22.1. The Contractor shall conform to the sustainable procurement contractual provisions, if and as specified in the **SCC**.

D. Contractor's Personnel

23. Description of Personnel

23.1. The titles, agreed job descriptions, minimum qualifications, and estimated periods of engagement in the carrying out of the Services of the Contractor's Key Personnel. The Key Personnel listed by title as well as by name are hereby approved by the Procuring Agency.

24. Removal and / or Replacement of Personnel

24.1. Except as the Procuring Agency may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Contractor, it becomes necessary to replace any of the Key Personnel, the Contractor shall provide as a replacement a person of equivalent or better qualifications.

24.2. If the Procuring Agency finds that any of the Personnel have (i) committed serious misconduct or have been charged with having committed a criminal action, or (ii) have reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Contractor shall, at the Procuring Agency's written request specifying the grounds thereof, provide as a replacement a person with qualifications and experience acceptable to the Procuring Agency.

24.3. The Contractor shall have no claim for additional costs arising out of or incidental to any removal and/or replacement of Personnel.

E. Obligations of the Procuring Agency

25. Change in the Applicable Law

25.1. If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost of the Services rendered by the Contractor, then the remuneration and reimbursable expenses otherwise payable to the Contractor under this Contract shall be increased or decreased accordingly by agreement between the Parties, and corresponding adjustments shall be made to the amounts referred in the SCC.

26. Services and Facilities

26.1. The Procuring Agency shall make available to the Contractor and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference, at the times and in the manner specified in the Terms of Reference.

26.2. In case that such services, facilities and property shall not be made available to the Contractor, the Parties shall agree on (i) any time extension that it may be appropriate to grant to the Contractor for the performance of the Services, (ii) the manner in which the Contractor shall procure any such services, facilities and property from other sources, and (iii) the additional payments, if any, to be made to the Contractor as a result thereof.

F. Payments to the Contractor

27. Contract Price

27.1. The price payable shall be in Pakistani Rupees unless otherwise specified in the SCC.

28. Terms and Conditions of Payment

28.1. Payments will be made to the Contractor according to the payment schedule stated in the SCC and as per actual invoice submitted by the Contractor.

28.2. Unless otherwise stated in the SCC, the advance payment shall be made against the provision by the Contractor of a bank guarantee for the same amount, and shall be valid for the period stated in the SCC. Any other payment shall be made after the conditions listed in the SCC for such payment have been met, and the Contractor have submitted an invoice to the Procuring Agency specifying the amount due.

29. Quality Control Identifying Defects

29.1. The principle and modalities of Inspection of the Services by the Procuring Agency shall be as indicated in the SCC. The Procuring Agency shall check the Contractor's performance and notify him of any Defects that are

found. Such checking shall not affect the Contractor's responsibilities. The Procuring Agency may instruct the Contractor to search for a Defect and to uncover and test any service that the Procuring Agency considers may have a Defect. Defect Liability Period is as defined in the SCC.

29.2. A {INSPECTION}

30. Correction of Defects, and Lack of Performance Penalty

30.1. The Procuring Agency shall give notice to the contractor of any Defects before the end of the Contract. The Defects liability period shall be extended for as long as Defects remain to be corrected.

30.2. Every time notice a Defect is given; the contractor shall correct the notified Defect within the length of time specified by the Procuring Agency's notice.

30.3. If the contractor has not corrected a Defect within the time specified in the Procuring Agency's notice, the Procuring Agency will assess the cost of having the Defect corrected, the contractor will pay this amount, and a Penalty for Lack of Performance.

31. Settlement of Disputes Amicable Settlement

31.1. The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.

32. Dispute Settlement

32.1. Arbitration

If any dispute of any kind whatsoever shall arise between the procuring agency and the contractor in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the contract, the parties shall seek to resolve any such dispute or difference by mutual consultation. If the parties fail to resolve such a dispute or difference even after negotiations or mediation, then the dispute shall be referred within fourteen (14) days in writing by either party to the Arbitrator, with a copy to the other party.

Any dispute in respect of which a notice of intention to commence arbitration has been given, in accordance with **GCC sub-clause 32.1**, shall be finally settled by arbitration. Arbitration may be commenced prior to or after completion of the Contract. Arbitration proceedings shall be conducted in accordance with Arbitration Act 1940. Notwithstanding any reference to arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless otherwise agreed. The Procuring Agency shall continue to pay the Contractor any undisputed amounts due under the Contract during the resolution of any dispute.



Special Conditions of Contract

SECTION VIII. SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

Number of GC Clause

Amendments of, and Supplements to, Clauses in the General Conditions of Contract

Number of GC Clause 1

Definitions

The Procuring Agency is: Ministry of Housing and Works (Federal Government Employees Housing Authority), Project Director Karachi 2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi.

The Supplier is:

The title of the subject procurement is: WATER CONNECTION WORKS OF SECTOR 4C, 18C, 19C, 24B & 25BAT KDA SCHEME-33, GULZAR-E-HIJRI, KARACHI

Number of GC Clause 2

Applicable/Governing Law:

The Contract shall be interpreted in accordance with the laws of Islamic Republic of Pakistan

Number of GC Clause 3

Language:

The language of the Contract, all correspondence and communications to be given, and all other documentation to be prepared and supplied under the Contract shall be in **English**.

Number of GC Clause 4

Notices:

The addresses for the notices are:

Procuring Agency:

Ministry of Housing and Works (Federal Government Employees Housing Authority), Project Director Karachi
2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi.
+92-334-650-0373
pd-karachi@fgeha.gov.pk

Contractor/ Bidder:

[Name, address and telephone number]

The Contractor/ Bidder's Representative(s)

[Name, address, telephone number and e-mail address]

Number of GC Clause 6.1

The Authorized Representatives are:

For the Procuring Agency:

Ministry of Housing and Works (Federal Government Employees Housing Authority), Project Director
Karachi

2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi.

+92-334-650-0373

pd-karachi@fgeha.gov.pk

For the Bidder:

Name:

Designation:

Address:

Number of GC Clause 7

Effectiveness of the contract

The Contractor/Bidder shall be effective within days from the date of signature of the Contract by both parties

Number of GC Clause 8

Commencement of Contract:

The Contractor/Bidder shall provide Non-Consultancy Services from the effective date of contract.

Number of GC Clause 10.2

Expiration of Contract:

The time period shall be

Number of GC Clause 14

Termination

In the event of termination of the contract due to any reason as already defined in the General Conditions of Contract, the Bidder shall be responsible for providing to the Authority the Goods till the time of alternate arrangements.

Number of GC Clause 16

Conflict of Interest:

The Procuring Agency reserves the right to determine on a case-by-case basis whether the Bidder should be disqualified from providing goods or services due to a conflict of a nature described in Clause GCC 17.

Number of GC Clause 20

Liquidated Damages

If the Bidder fails to provide services as required under the contract or in case of any data loss/data breach or any incident compromising the data security or other such failures related to any services, the Bidder shall pay to the Procuring Agency as Liquidated Damages at a rate of **0.10% to 10.00%** of the Contract value, in accordance with the extent of performance failure & the cost of investigating such incidents as judged by the Authority.

Number of GC Clause 21

Performance Guarantee:

The amount of performance guarantee shall be **10.00%** of the contract price in acceptable form of **Pay Order, Call at Deposit, Bank Guarantee**

Number of GC Clause 27

Currency of Payment:

All the payment to be released to the contractor/Bidder shall be in Pakistani Rupees.

Number of GC Clause 28

Payment terms:

Payment will be made to the Bidder against the procured Goods and services according to the actual invoice or running bills submitted by the Bidder against the services provided within the time given in the conditions of the contract.

Number of GC Clause 29

Identifying Defects:

The Authority reserves the right at any time to inspect the premises of the provider to inspect the goods and monitor the goods being provided.

Inspections & Tests Requirements

For being Brand New, bearing relevant reference numbers of the equipment (Certificate from supplier)

For Physical Fitness having No Damages (Certificate from supplier)

For conformance to specifications and performance parameters, through Prior to delivery inspection (Inspection Report by Procurement Committee / Inspection Team)

For successful operation at site after complete installation, testing and commissioning of the equipment (Installation, Testing and Commissioning Report by Procurement Committee / Inspection Team)

ONE YEAR DLP PERIOD

Number of GC Clause 31

Following is the guidance for Dispute Resolution

- i. If any dispute of any kind whatsoever shall arise between the Authority and the Bidder in connection with or arising out of the Contract... (full clause unchanged)
- ii. At future of negotiation the dispute shall be resolved through mediation...
- iii. At failure of mediation, arbitration under Arbitration Act 1940...
- iv. Cost sharing equally...
- v. Proceedings may commence before/after completion...

Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the Contract.

Rules of procedure for arbitration proceedings:

Any dispute between the Authority and a Bidder shall be referred to arbitration under the laws of Pakistan including Arbitration Act 1940.

Place of Arbitration and Award:

The arbitration shall be conducted in English language and place shall be Islamabad. The award shall be final and binding.



Bid Securing Declaration

Form 9: Bid Securing Declaration

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

Bid No.: **P135111**

To: **Ministry of Housing and Works (Federal Government Employees Housing Authority), Project Director Karachi 2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi.**

We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid Securing Declaration.

We accept that we will be blacklisted and henceforth cross debarred for participating in respective category of public procurement proceedings for a period of (not more than) six months, if fail to abide with a bid securing declaration, however without indulging in corrupt and fraudulent practices, if we are in breach of our obligation(s) under the Bid conditions, because we:

1. have withdrawn or modified our Bid during the period of Bid Validity specified in the Form of Bid;
2. Disagreement to arithmetical correction made to the Bid price; or
3. having been notified of the acceptance of our Bid by the Procuring Agency during the period of Bid Validity, (i) failure to sign the contract if required by Procuring Agency to do so or (ii) fail or refuse to furnish the Performance Security or to comply with any other condition precedent to signing the contract specified in the Bidding Documents.

We understand this Bid Securing Declaration shall expire if we are not the successful

Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight (28) days after the expiration of our Bid.



Contract Form

SECTION IX: CONTRACT FORMS

THIS AGREEMENT made the ____ day of _____ 20____ between **Ministry of Housing and Works (Federal Government Employees Housing Authority), Project Director Karachi 2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi.**

(hereinafter called “the Procuring Agency”) of the one part and [name of Bidder] of [city and country of Bidder] (hereinafter called “the Bidder”) of the other part:

WHEREAS the Procuring Agency invited Bids for provision of goods, viz., **WATER CONNECTION WORKS OF SECTOR 4C, 18C, 19C, 24B & 25BAT KDA SCHEME-33, GULZAR-E-HIJRI, KARACHI (P135111)** and has accepted a Bids by the Bidder for the provision of Goods in the sum of [contract price in words and figures] (hereinafter called “the Contract Price”).

NOW THIS CONTRACT WITNESSETH AS FOLLOWS:

1. In this Contract words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Contract, In the event of any ambiguity or conflict between the Contract Documents listed below, the order of precedence shall be the order in which the Contract Documents are listed below:-

1. This form of Contract;
2. the Form of Bids and the Price Schedule submitted by the Bidder;
3. the Schedule of Requirements;
4. the Technical Specifications;
5. the Special Conditions of Contract;
6. the General Conditions of the Contract;
7. the Procuring Agency’s Letter of Acceptance; and
8. [add here: any other documents]

3. In consideration of the payments to be made by the Procuring Agency to the Bidder as hereinafter mentioned, the Bidder hereby covenants with the Procuring Agency to provide the Goods related services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Procuring Agency hereby covenants to pay the Bidder in consideration of the provision of Goods and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Contract to be executed in accordance with their respective laws the day and year first above written.

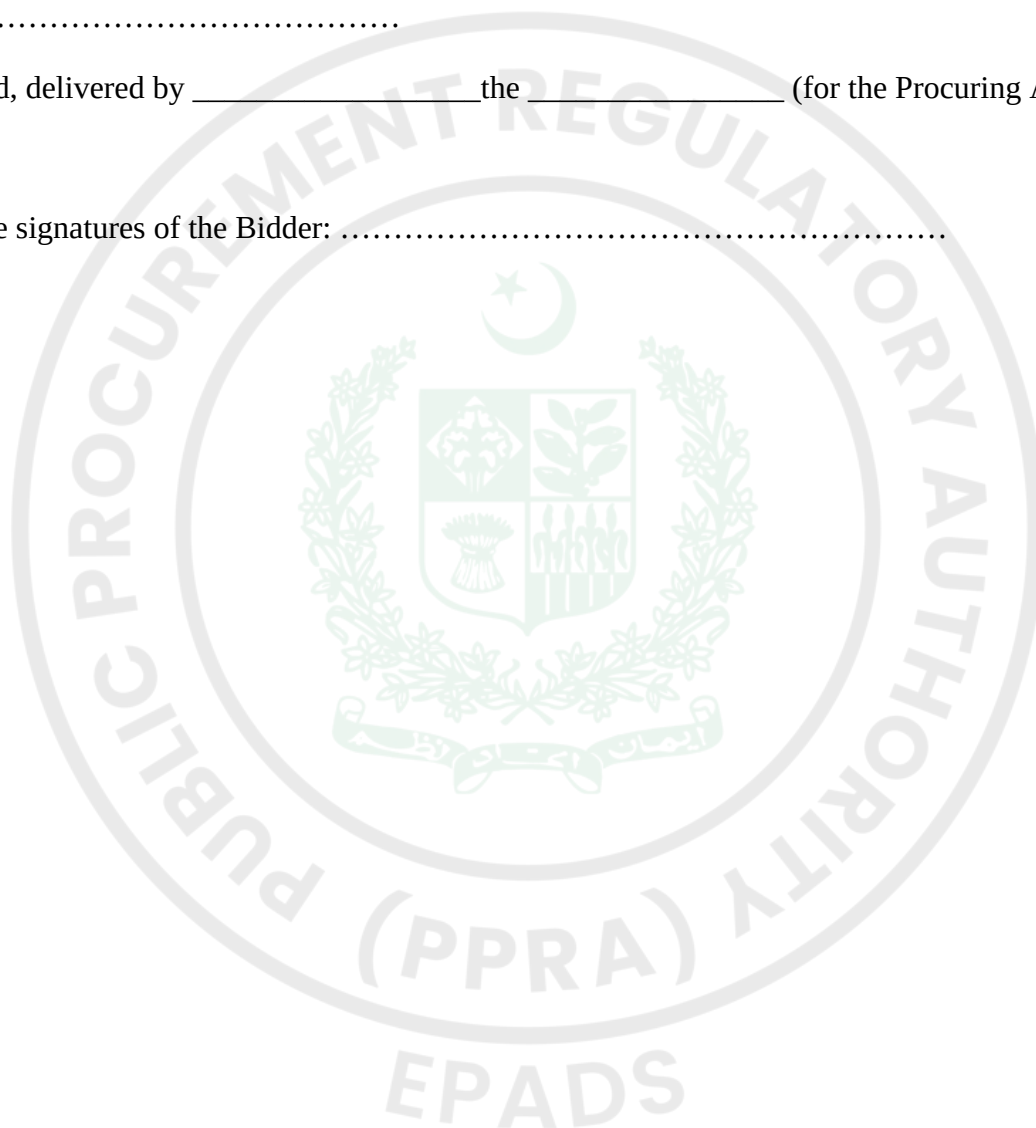
Signed, sealed, delivered by _____ the _____ (for the Procuring Agency)

Witness to the signatures of the Procuring Agency:

.....

Signed, sealed, delivered by _____ the _____ (for the Procuring Agency)

Witness to the signatures of the Bidder:





Integrity Pact

Integrity Pact

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS WORTH RS.10.00 MILLION OR MORE

Contract

Number: Contract

Value: Contract Title:

Dated:

[Name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoP) through any corrupt business practice.

Without limiting the generality of the foregoing [Name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fee etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultations fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Supplier] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representative or warranty.

[Name of Supplier] accepts full responsibility and strict liability for making and false declaration, not making full disclosure, misrepresenting fact or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, [Name of Supplier] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.



Performance Guarantee Form

Performance Guarantee Form

To: **Ministry of Housing and Works (Federal Government Employees Housing Authority), Project Director Karachi 2nd Floor, Working Women Hostel, Opposite Garden, Police Headquarters, Agha Khan-III Road, Karachi.**

WHEREAS *[name of Bidder]* (hereinafter called “the Bidder”) has undertaken, in pursuance of Contract No. *[reference number of the contract]* dated *[insert date]* for provision of Goods (hereinafter called “the Contract”).

AND WHEREAS it has been stipulated by you in the said Contract that the Bidder shall furnish you with a Bank Guarantee by a reputable bank for the sum specified therein as security for compliance with the Bidder’s performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Bidders guarantee:

THEREFORE, WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Bidder, up to a total of *[amount of the guarantee in words and figures]*, and we undertake to pay you, upon your first written demand declaring the Bidder to be in default under the Contract 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 or the sum specified therein.

This guarantee is valid until the: *[insert date]*

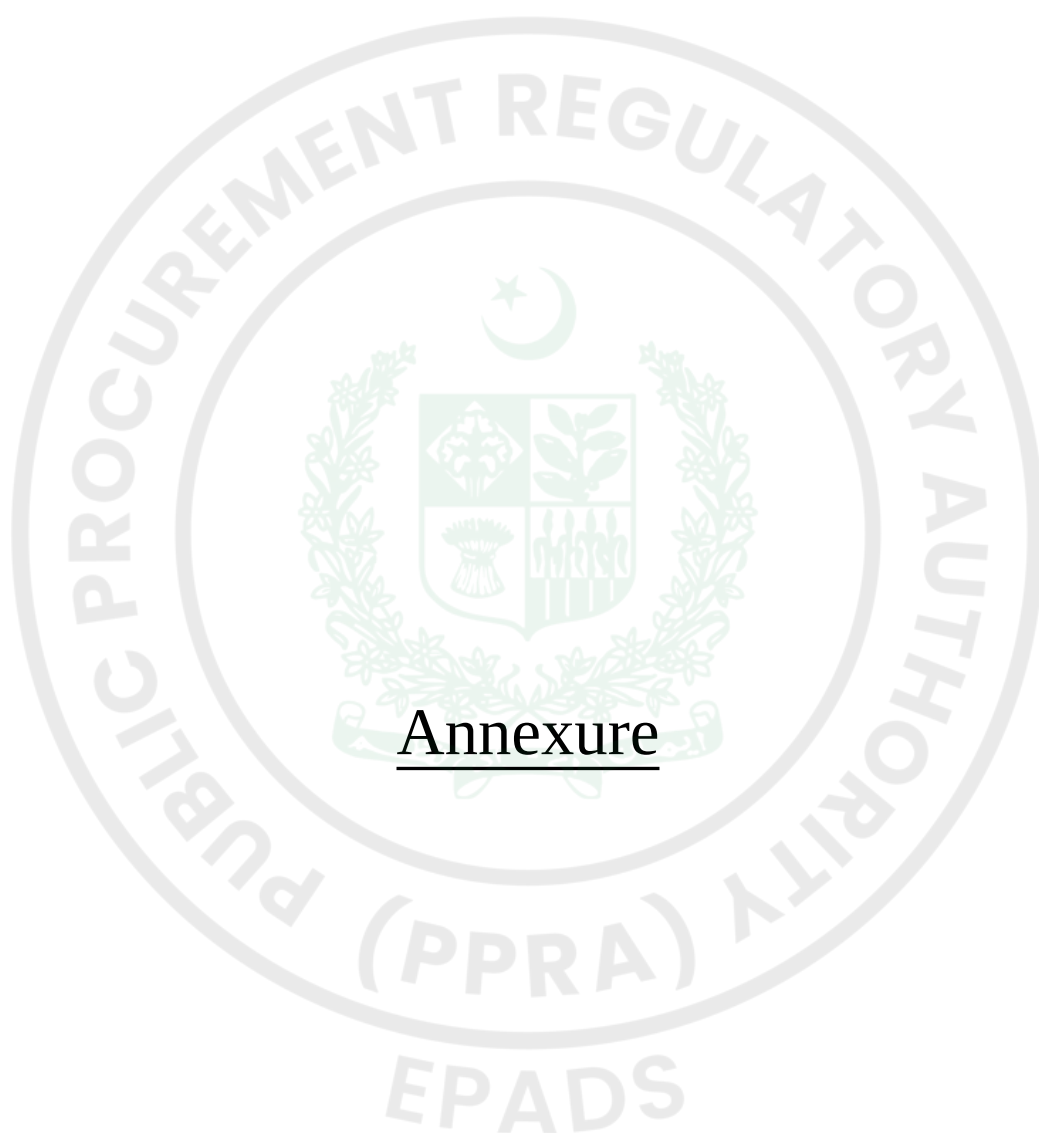
Signature and seal of the Guarantors

[name of bank or financial institution]

[address]

[date]





Annexure

List of Drawings

Information (Read-Only)

See Form Under Additional Forms and Documents: **List of Drawings** (page number: 76)

Technical Specification V-II

Information (Read-Only)

See Form Under Additional Forms and Documents: **Technical Specification V-II** (page number: 95)

Price Bid -Vol 4

Information (Read-Only)

See Form Under Additional Forms and Documents: **Price Bid -Vol 4** (page number: 150)

Special Provisions

Information (Read-Only)

See Form Under Additional Forms and Documents: **Special Provisions** (page number: 169)

Condition of Contract - Vol I

Information (Read-Only)

See Form Under Additional Forms and Documents: **Condition of Contract - Vol I** (page number: 184)



Procurement Forms







Additional Forms and Documents

LIST OF DRAWING

" FEDERAL GOVERNMENT EMPLOYEES HOUSING AUTHORITY "		
S.NO	DRAWING TITLE	DRAWING NO.
01	LIST OF DRAWING	EA-1057-GEH-U-LS01
02	GENERAL NOTES	EA-1057-GEH-U-GN01
" PACKAGE -1 "		
" WATER SUPPLY SYSTEM "		
LAYOUT DRAWINGS		
03	WATER SUPPLY CONNECTION LAYOUT FORM MAIN LINE TO PROPOSED U.G.W.T (SECTOR- 24B-1 & 25B-1)	EA-1057-GEH-S-24,25B-1-U-W102
04	WATER SUPPLY CONNECTION LAYOUT FORM MAIN LINE TO PROPOSED U.G.W.T (SECTOR- 24B-2 & 25B-2)	EA-1057-GEH-S-24,25B-1-U-W103
DETAILS DRAWINGS		
05	WATER SUPPLY SYSTEM MISCELLANEOUS DETAILS 180mmØ	EA-1057-GEH-U-W400
06	PLAN & SECTION UNDER GROUND PUMP ROOM	EA-1057-GEH-U-W401
" PACKAGE -2 "		
" WATER SUPPLY SYSTEM "		
LAYOUT DRAWINGS		
07	WATER SUPPLY CONNECTION LAYOUT FORM MAIN LINE TO PROPOSED U.G.W.T (SECTOR- 4C)	EA-1057-GEH-S-4C-U-W100
08	WATER SUPPLY CONNECTION LAYOUT FORM MAIN LINE TO PROPOSED U.G.W.T (SECTOR- 18C & 19C)	EA-1057-GEH-S-18,19C-U-W101
DETAILS DRAWINGS		
09	WATER SUPPLY SYSTEM MISCELLANEOUS DETAILS 125mmØ	EA-1057-GEH-U-W402
10	INTAKE PUMPING ARRANGEMENT (PLAN, SECTION)	EA-1057-GEH-U-W403

Client :

FEDERAL GOVERNMENT
EMPLOYEES HOUSING
AUTHORITY

Consultant :

EA Consulting Pvt. Ltd.
AL-9,15th Lane, Off
Khayaban-e-Hilal, DHA Phase 7,
Karachi, Pakistan 75500
PABX : +92-21-111-111-584,
FAX : +92-35841825
WEB : www.eaworld.com

Project :

INFRASTRUCTURE
DEVELOPMENT WORKS OF SECTOR 24-B,
SECTOR-25-B, SECTOR-18-C, SECTOR 19-C
AND SECTOR 4-C AT KDA SCHEME-33,
GULZAR-E-HIJRI, KARACHI

00	FEB, 2025	ISSUED FOR REVIEW
No.	DATE	DESCRIPTION

REVISIONS	
Date of Issue	FEB, 2025
Issued For	REVIEW

PUBLIC HEALTH

Status:

REVIEW

Drawing Title :

LIST OF DRAWING

Designed :	Checked :	Approved :
FAROOQ	FAHAD	FAHAD
Drawn :	Date :	Scale / Sheet :
FURQAN	FEB, 2025	A1
Project Code :	Rev. :	
01057	00	
Drawing No. :	EA-1057-GEH-U-LS01	

GENERAL NOTES FOR ALL SECTORS :

A site inspection was conducted in coordination with the Water Board representative to determine the intake points for water supply to each sector from the main line. The following observations were made during the inspection:

Sector 4C:

- During the inspection, the Water Board representative identified a 36-inch water supply line located six feet underground along the shoulder of the 200-foot-wide road, positioned opposite the sector.
- It was noted that the supply operates on a 7-day continuous cycle, followed by a 5-day break.
- Additionally, the inspection confirmed that the existing line maintains sufficient water pressure, eliminating the need for additional pumps for water extraction.

Sector 18C & 19C:

- During the inspection, a water supply line was observed running along the shoulder of the 200-foot-wide road on the Sector 19C side
- The supply operates for 8 to 10 hours daily, with alternate day-offs
- However, it was noted that the existing line lacks sufficient pressure, necessitating the installation of additional pumps to ensure adequate water extraction and efficient supply to the storage tanks serving both sectors.

Sector 24B & 25B:

- During the inspection, it was observed that the main water supply line is located at the median of Gulzar-e-Hijri Road, adjacent to Punjabi Sodagran Society.
- According to the Water Board representative, this line does not rely on pumps for water supply but functions as a reserve pipe, allowing nearby societies and buildings to extract water during allocated time slots.
- The diameter of the line is 33 inches, and Sectors 24B and 25B will source their water from this line.
- Additional pumps are required for water extraction, and during the visit, the pump room location was finalized in coordination with the representative.

Client :



FEDERAL GOVERNMENT
EMPLOYEES HOUSING
AUTHORITY

Consultant :



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AL-9, 15th Lane, Off
Khayaban-e-Hilal, DHA Phase 7,
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Project :

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GULZAR-E-HIJRI, KARACHI

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No.	DATE	DESCRIPTION
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REVISIONS

Date of Issue	FEB, 2025
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Issued For	REVIEW
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PUBLIC HEALTH

Status:

REVIEW

Drawing Title :

GENERAL NOTES

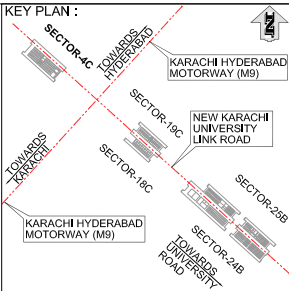
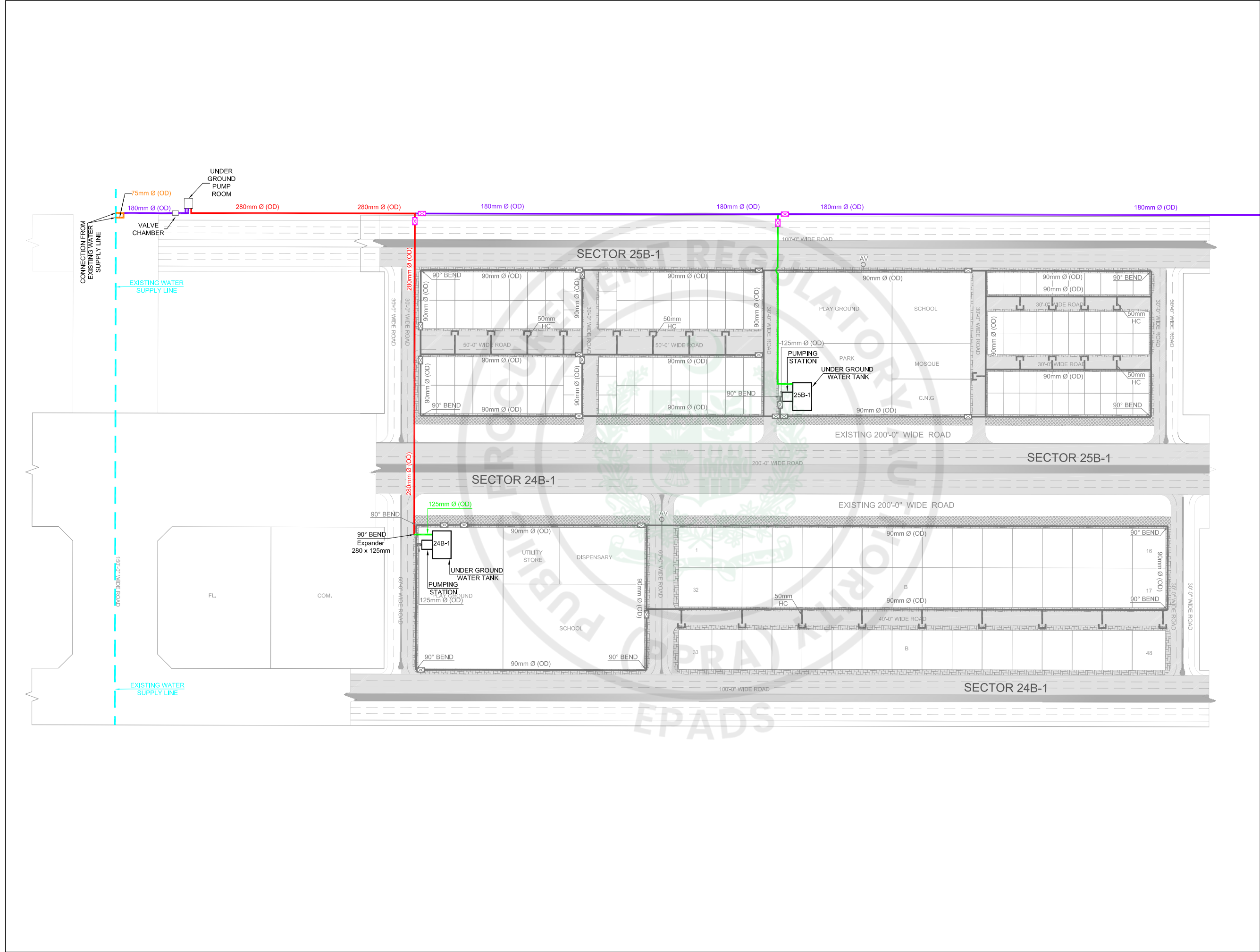
Designed :	Checked :	Approved :
FAROOQ	FAHAD	FAHAD
Drawn :	Date :	Scale / Sheet :
FURQAN	FEB, 2025	A1
Project Code :	01057	Rev. : 00
Drawing No. : EA-1057-GEH-U-GN01		



WATER SUPPLY SYSTEM

LAYOUT PLAN





- NOTE:
1. ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON SITE.
 2. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED. DO NOT SCALE ANY DRAWING.
 3. ALL DIMENSIONS ARE IN FEET UNLESS SPECIFIED.
 4. WATER SUPPLY SYSTEM MISCELLANEOUS DETAILS 180mmØ REFER DRAWING NO. EA-1057-GEH-U-W400.
 5. PLAN & SECTION UNDER GROUND PUMP ROOM REFER DRAWING NO. EA-1057-GEH-U-W401.

- LEGENDS:
- EXISTING WATER SUPPLY LINE
 - 75mm Ø (OD) Water Line
 - 180mm Ø (OD) Water Line
 - 125mm Ø (OD) Water Line
 - 280mm Ø (OD) Water Line
 - GATE VALVE CHAMBER
 - UNDER GROUND WATER TANK AND PUMPING STATION
 - VALVE CHAMBER
 - UNDER GROUND PUMPROOM

Client :

FEDERAL GOVERNMENT
EMPLOYEES HOUSING
AUTHORITY

Consultant :

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AL-9, 15th Lane, Off
Khayaban-e-Hilal, DHA Phase 7,
Karachi, Pakistan 75500
PABX : +92-21-111-111-584,
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Project :

INFRASTRUCTURE
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SECTOR-25-B, SECTOR-18-C, SECTOR 19-C
AND SECTOR 4-C AT KDA SCHEME-33,
GULZAR-E-HIJRI, KARACHI

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No.	DATE	DESCRIPTION
REVISIONS		
Date of Issue	FEB, 2025	
Issued For	REVIEW	

PUBLIC HEALTH

Status:

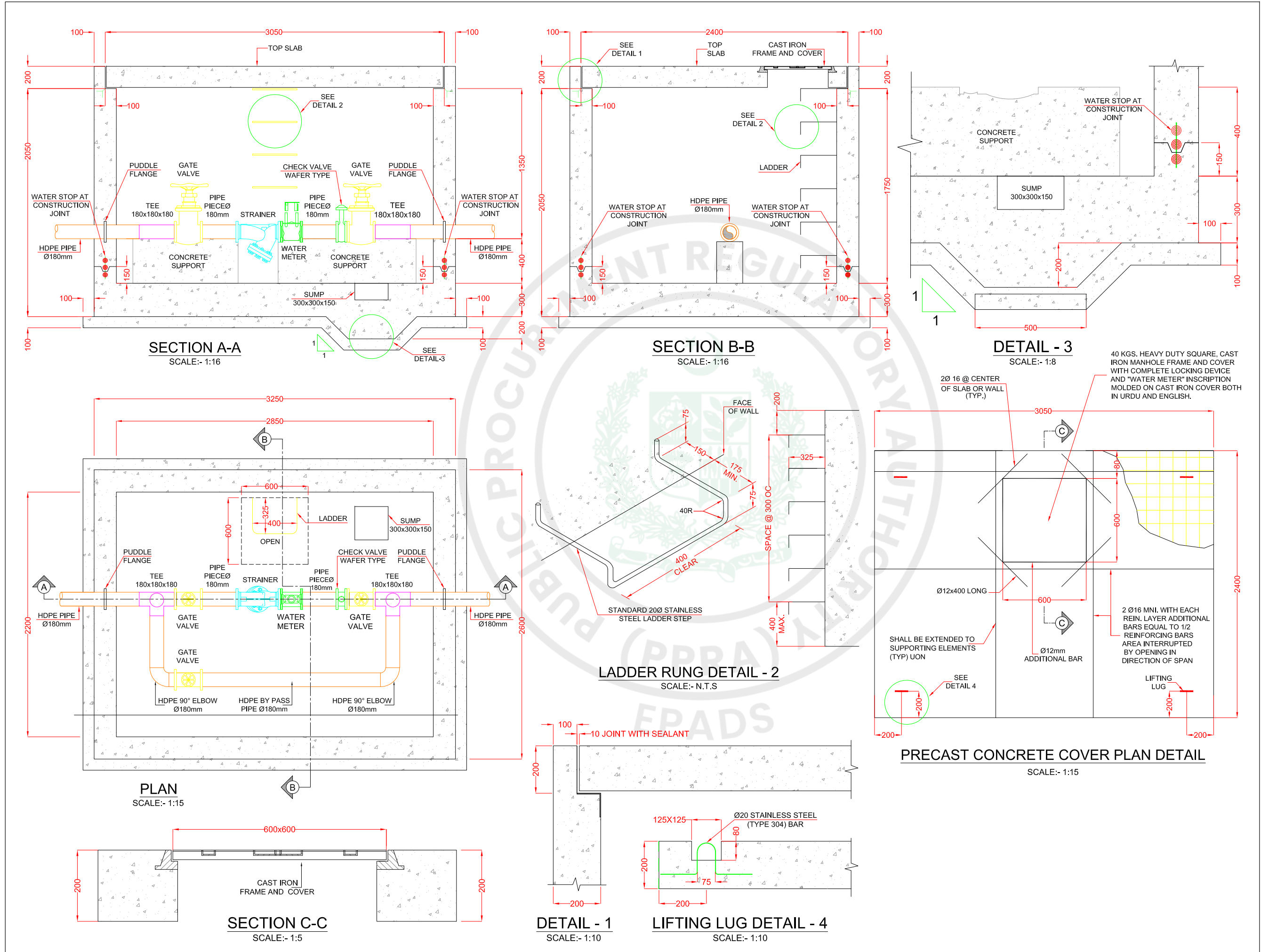
REVIEW

Drawing Title :

**WATER SUPPLY
CONNECTION LAYOUT
FORM MAIN LINE TO
PROPOSED U.G.W.T
(SECTOR- 24B-1 & 25B-1)**

Designed :	Checked :	Approved :
FAROOQ	FAHAD	FAHAD
Drawn :	Date :	Scale / Sheet :
FURQAN	FEB, 2025	1/80"=1'-0" A1
Project Code :	Rev. :	
	01057	00

DETAIL DRAWINGS



KEY PLAN :

- NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
 2. METER BOXES ARE NOT SUITABLE FOR INSTALLATION ROADS PARKING LOTS AND OTHER AREAS SUBJECTED TO VEHICULAR TRAFFIC. METER BOXES SUBJECTED TO VEHICULAR TRAFFIC SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINISTRY OF COMMUNICATION (MOC), HIGHWAY DESIGN MANUAL VOLUME 3 UNLESS OTHERWISE SPECIFIED IN THE CONTRACT.
 3. THE EMBOSSED ARROW OF THE WATER METER BODY MUST ALWAYS POINT TO THE DIRECTION OF FLOW.
 4. WATER METER SHALL NOT BE CONNECTED UNLESS THE PIPE LINE IS DISINFECTED BACTERICIDAL TESTED AND FLUSHED.
 5. FOR LOCATION OF VALVE CHAMBER REFER DRAWING NO. EA-1057-GEH-S-24-25B-1-U-W102.

Client :

FEDERAL GOVERNMENT
EMPLOYEES HOUSING
AUTHORITY

Consultant :

EA Consulting Pvt. Ltd.
AL-9, 15th Lane, Off
Khayaban-e-Hilal, DHA Phase 7,
Karachi, Pakistan 75500
PABX : +92-21-111-111-584,
FAX : +92-35841825
WEB : www.eaworld.com

Project :

INFRASTRUCTURE
DEVELOPMENT WORKS OF SECTOR 24-B,
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AND SECTOR 4-C AT KDA SCHEME-33,
GULZAR-E-HIJRI, KARACHI

00 FEB, 2025 ISSUED FOR REVIEW

No. DATE DESCRIPTION

REVISIONS

Date of Issue FEB, 2025

Issued For REVIEW

PUBLIC HEALTH

Status: REVIEW

Drawing Title :

**WATER SUPPLY SYSTEM
MISCELLANEOUS DETAILS
180mmØ**

Designed : FAROOQ Checked : FAHAD Approved : FAHAD

Drawn : FURQAN Date : FEB, 2025 Scale / Sheet : AS SHOWN A1

Project Code : 01057 Rev. : 00

Drawing No. : EA-1057-GEH-U-W400

KEY PLAN :

NOTE:
1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED,
2. FOR LOCATION OF UNDER GROUND PUMP ROOM REFER DRAWING NO. EA-1057-GEH-S-24,25B-14-J-W102.

Client :
 FEDERAL GOVERNMENT
EMPLOYEES HOUSING
AUTHORITY

Consultant :
 **EA Consulting Pvt. Ltd.**
AL-9,15th Lane, Off
Khayaban-e-Hillal, DHA Phase 7,
Karachi, Pakistan 75500
PABX : +92-21-111-111-584,
FAX : +92-35841825
WEB : www.eaworld.com

Project :
INFRASTRUCTURE
DEVELOPMENT WORKS OF SECTOR 24-B,
SECTOR-25-B, SECTOR-18-C, SECTOR 19-C
AND SECTOR 4-C AT KDA SCHEME-33,
GULZAR-E-HIJRI, KARACHI

No.	DATE	DESCRIPTION
00	FEB, 2025	ISSUED FOR REVIEW

Date of Issue	REVISIONS
FEB, 2025	REVIEW

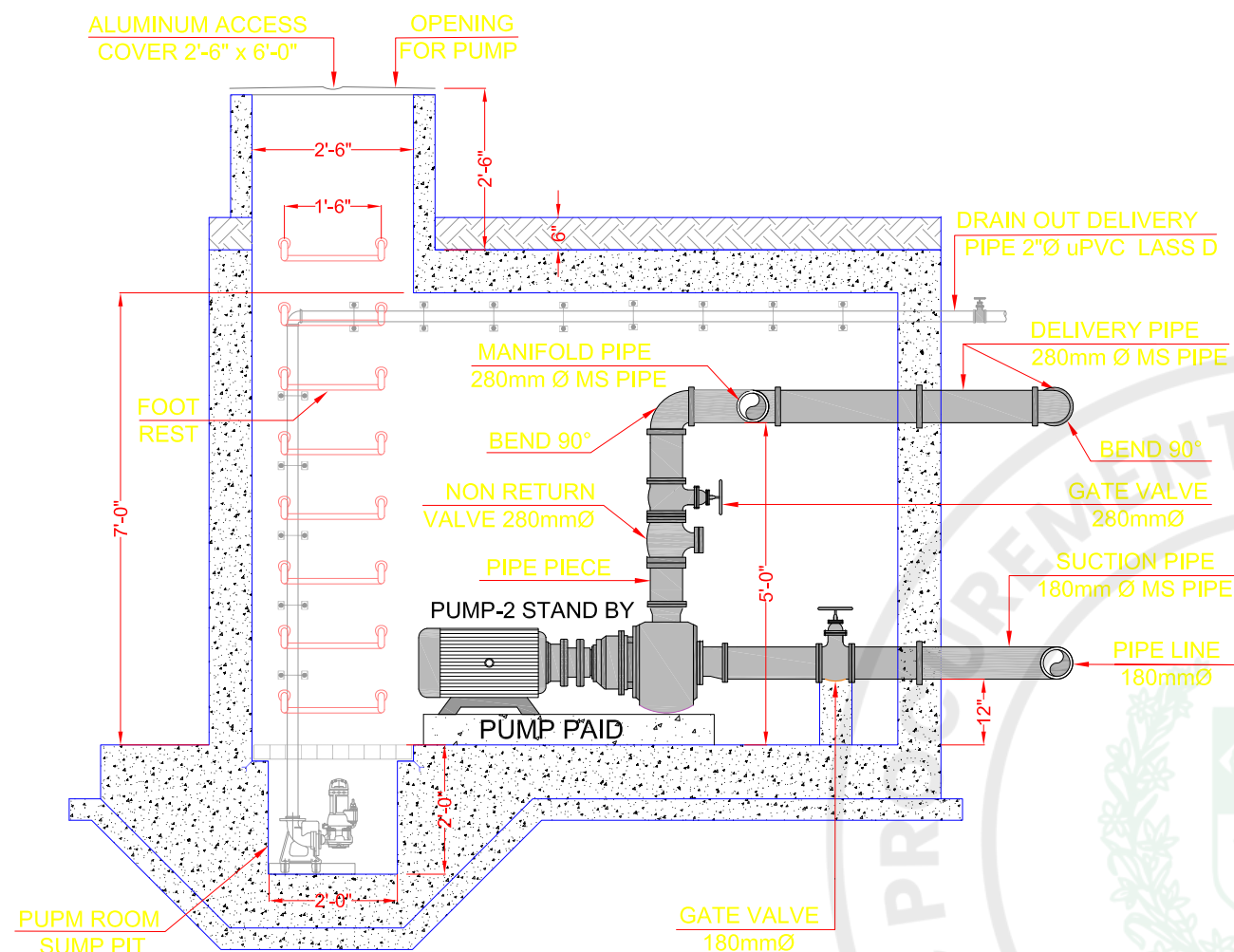
PUBLIC HEALTH

Status: **REVIEW**

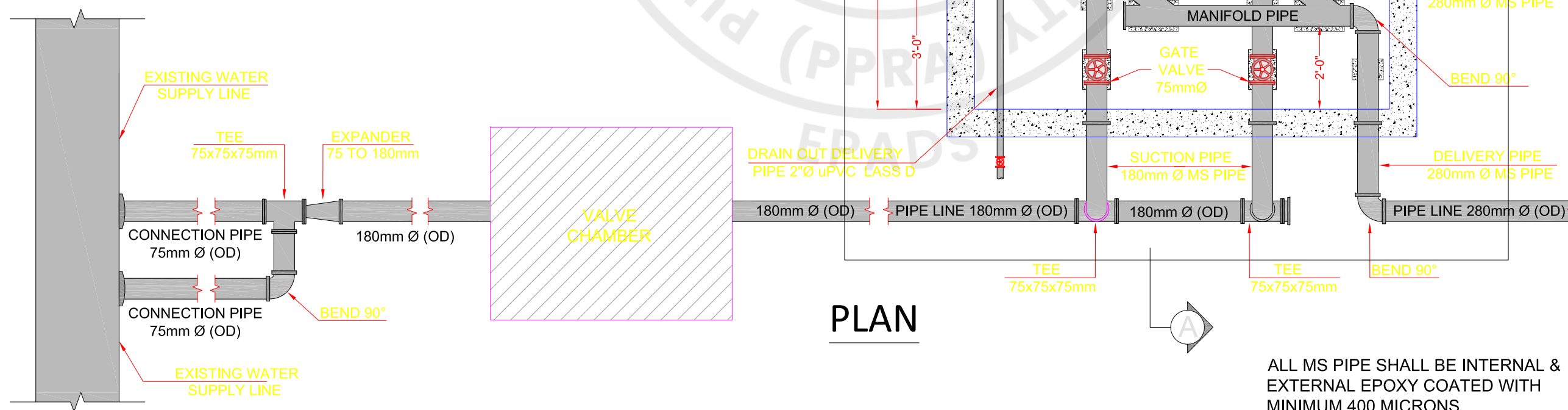
Drawing Title :
**PLAN & SECTION UNDER
GROUND PUMP ROOM**

Designed : FAROOQ	Checked : FAHAD	Approved : FAHAD
Drawn : FURQAN	Date : FEB, 2025	Scale / Sheet : NTS A1
Project Code : 01057	Rev. : 00	

Drawing No. :
EA-1057-GEH-U-W401



SECTION-A



PLAN

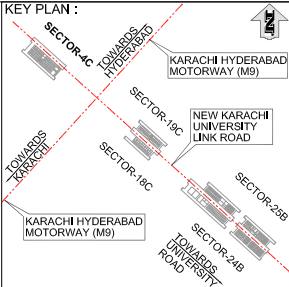
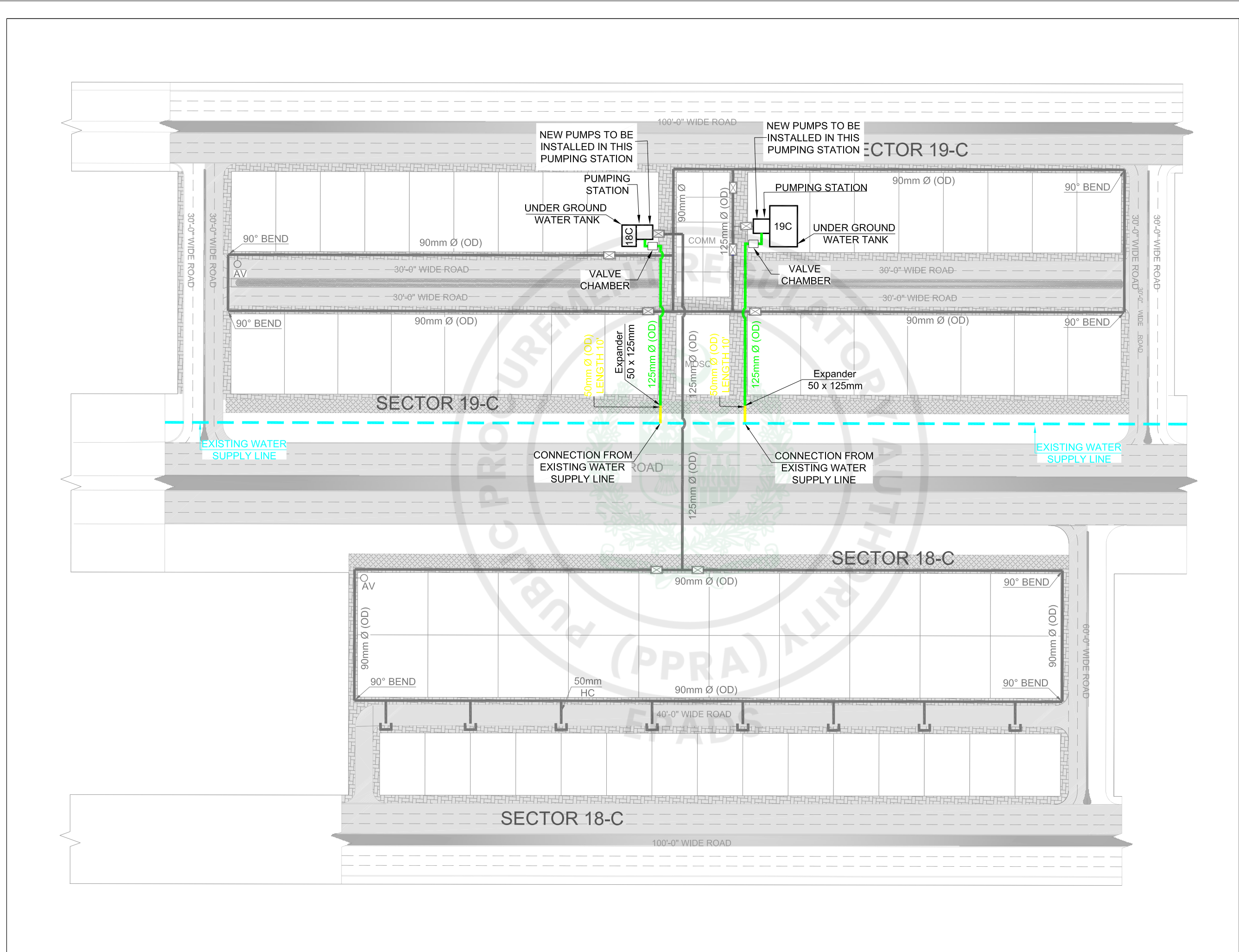
ALL MS PIPE SHALL BE INTERNAL &
EXTERNAL EPOXY COATED WITH
MINIMUM 400 MICRONS



WATER SUPPLY SYSTEM

LAYOUT PLAN





- NOTE:
1. ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON SITE.
 2. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED. DO NOT SCALE ANY DRAWING.
 3. ALL DIMENSIONS ARE IN FEET UNLESS SPECIFIED.
 4. WATER SUPPLY SYSTEM MISCELLANEOUS DETAILS 125mmØ REFER DRAWING NO. EA-1057-GEH-U-W402.
 5. INTAKE PUMPING ARRANGEMENT (PLAN, SECTION) REFER DRAWING NO.EA-1057-GEH-U-W403.

- LEGENDS:
- EXISTING WATER SUPPLY LINE
 - 50mm Ø (OD) Water Line
 - 125mm Ø (OD) Water Line
 - UNDER GROUND WATER TANK AND PUMPING STATION
 - VALVE CHAMBER

Client :

FEDERAL GOVERNMENT
EMPLOYEES HOUSING
AUTHORITY

Consultant :

EA Consulting Pvt. Ltd.
AL-9,15th Lane, Off
Khayaban-e-Hilal, DHA Phase 7,
Karachi, Pakistan 75500
PABX : +92-21-111-111-584,
FAX : +92-35841825
WEB : www.eaworld.com

Project :

INFRASTRUCTURE
DEVELOPMENT WORKS OF SECTOR 24-B,
SECTOR-25-B, SECTOR-18-C, SECTOR 19-C
AND SECTOR 4-C AT KDA SCHEME-33,
GULZAR-E-HIJRI, KARACHI

00	FEB, 2025	ISSUED FOR REVIEW
No.	DATE	DESCRIPTION
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Date of Issue		FEB, 2025
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Status:

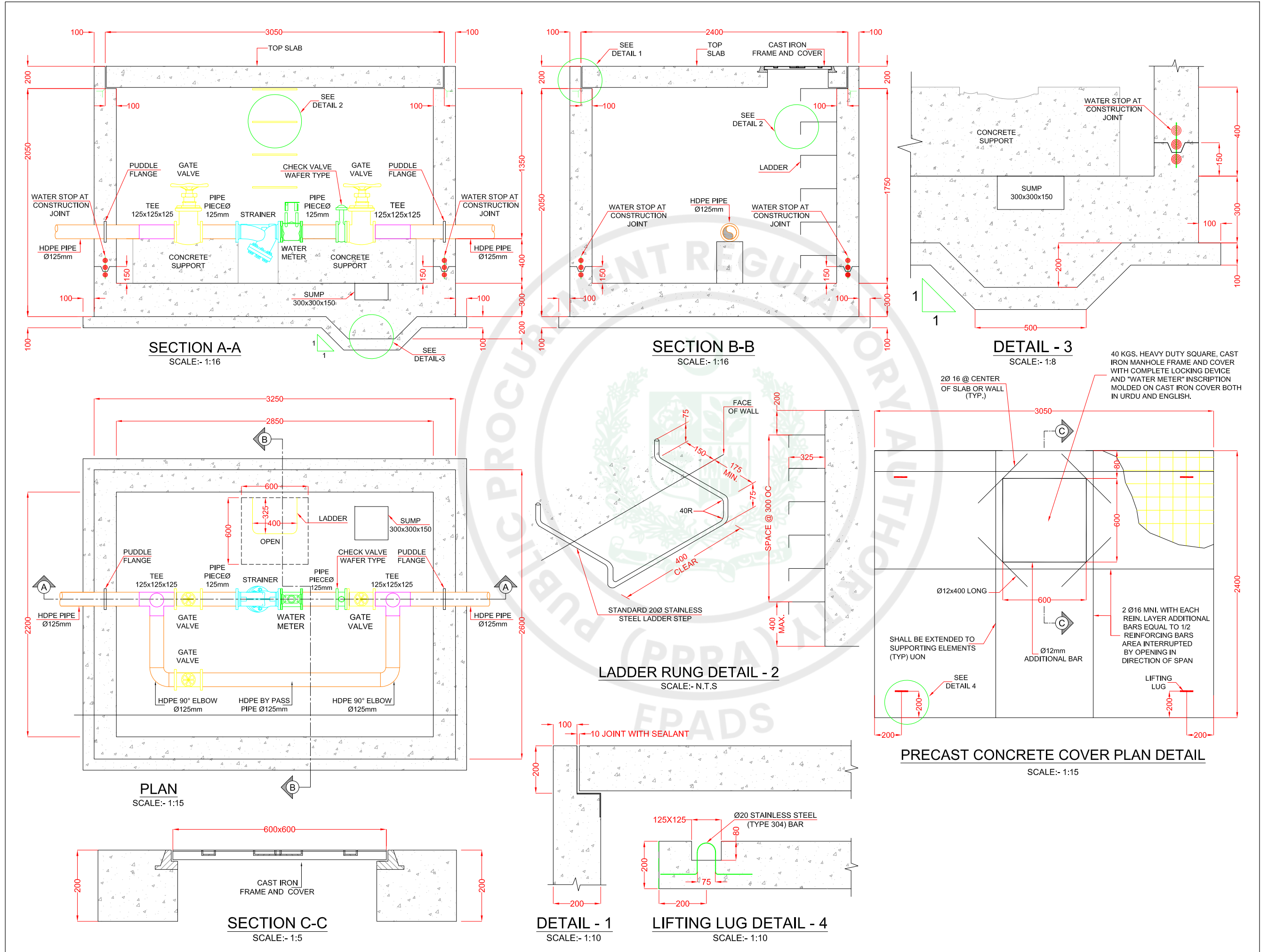
REVIEW

Drawing Title :

**WATER SUPPLY
CONNECTION LAYOUT
FORM MAIN LINE TO
PROPOSED U.G.W.T
(SECTOR- 18C & 19C)**

Designed :	Checked :	Approved :
FAROOQ	FAHAD	FAHAD
Drawn :	Date :	Scale / Sheet :
FURQAN	FEB, 2025	1/50"=1'-0" A1
Project Code :	Rev. :	
	01057	00
Drawing No. : EA-1057-GEH-S-18,19C-U-W101		

DETAIL DRAWINGS



KEY PLAN:

- NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
 2. METER BOXES ARE NOT SUITABLE FOR INSTALLATION ROADS PARKING LOTS AND OTHER AREAS SUBJECTED TO VEHICULAR TRAFFIC. METER BOXES SUBJECTED TO VEHICULAR TRAFFIC SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINISTRY OF COMMUNICATION (MOC), HIGHWAY DESIGN MANUAL VOLUME 3 UNLESS OTHERWISE SPECIFIED IN THE CONTRACT.
 3. THE EMBOSSED ARROW OF THE WATER METER BODY MUST ALWAYS POINT TO THE DIRECTION OF FLOW.
 4. WATER METER SHALL NOT BE CONNECTED UNLESS THE PIPE LINE IS DISINFECTED BACTERICIDAL TESTED AND FLUSHED.
 5. FOR LOCATION OF VALVE CHAMBER REFER DRAWING NO.EA-1057-GEH-S-4C-U-W100, AND EA-1057-GEH-S-18,19C-U-W101.

Client :

 **FEDERAL GOVERNMENT
EMPLOYEES HOUSING
AUTHORITY**

Consultant :

 **EA Consulting Pvt. Ltd.**
AL-9,15th Lane, Off
Khayaban-e-Hilal, DHA Phase 7,
Karachi, Pakistan 75500
PABX : +92-21-111-111-584,
FAX : +92-35841825
WEB : www.eaworld.com

Project :

INFRASTRUCTURE
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AND SECTOR 4-C AT KDA SCHEME-33,
GULZAR-E-HIJRI, KARACHI

No.	DATE	DESCRIPTION
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	REVIEW

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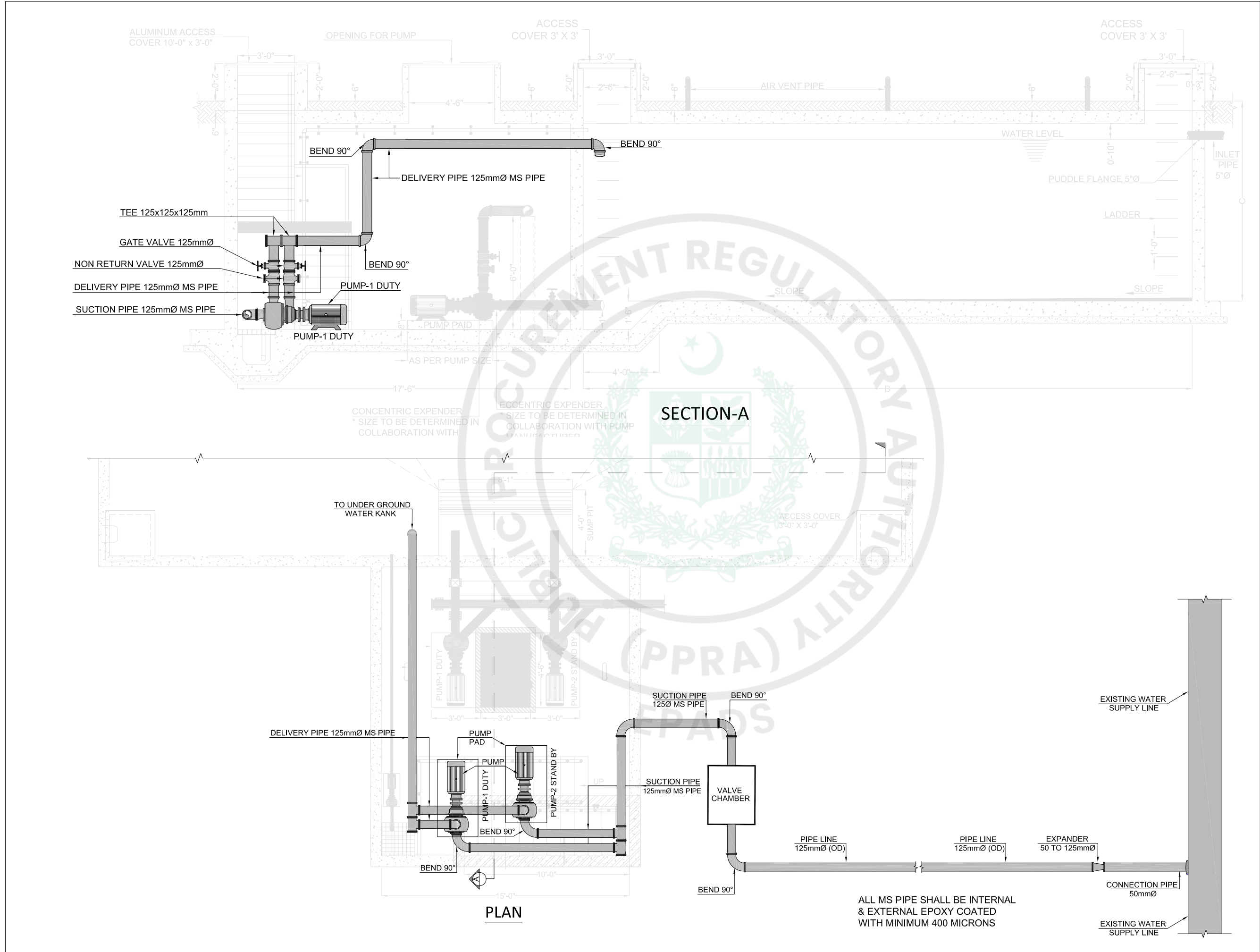
Status:

REVIEW

Drawing Title :

**WATER SUPPLY SYSTEM
MISCELLANEOUS DETAILS
125mmØ**

Designed :	Checked :	Approved :
FAROOQ	FAHAD	FAHAD
Drawn :	Date :	Scale / Sheet :
FURQAN	FEB, 2025	AS SHOWN A1
Project Code :	01057	Rev. :
01057		00
Drawing No. :	EA-1057-GEH-U-W402	



NOTE:
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3. ALL DIMENSIONS ARE IN FEET UNLESS SPECIFIED.
4. FOR LOCATION OF PLAN UNDER GROUND WATER TANK AND PUMP ROOM REFER DRAWING NO. EA-1057-GEH-S-4C-UW100 AND EA-1057-GEH-S-18,19C-U-W101.

Client :
 **FEDERAL GOVERNMENT
EMPLOYEES HOUSING
AUTHORITY**

Consultant :
 **EA Consulting Pvt. Ltd.**
AL-9,15th Lane, Off
Khayaban-e-Hilal, DHA Phase 7,
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PABX : +92-21-111-111-584,
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AND SECTOR 4-C AT KDA SCHEME-33,
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Date of Issue		FEB, 2025
Issued For		REVIEW

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Status: **REVIEW**

Drawing Title :
**INTAKE PUMPING
ARRANGEMENT
(PLAN, SECTION)**

Designed : FAROOQ	Checked : FAHAD	Approved : FAHAD
Drawn : FURQAN	Date : FEB, 2025	Scale / Sheet : A1
Project Code : 01057		Rev. : 00
Drawing No. : EA-1057-GEH-U-W403		



MINISTRY OF HOUSING AND WORKS
FEDERAL GOVERNMENT EMPLOYEES
HOUSING AUTHORITY, ISLAMABAD

INFRASTRUCTURE DEVELOPMENT WORK OF
PACKAGE I & II (SECTOR **25B, 24B**, 18C, 19C
& 4C) AT KDA SCHEME-33, GULZAR-E-HIJRI,
KARACHI

TECHNICAL
SPECIFICATION
VOLUME-II

OCTOBER, 2025



EA Consulting Pvt Ltd

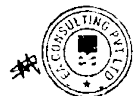
(Formerly Engineering Associates)

Engineering, Architecture & Project Management

Head Office: AL-9, 15th Lane, Khayaban-e-Hilal,

Phase VII, D.H.A., Karachi-75500.,

Tel: UAN: 111-111-584, Fax: (021) 3584-1825



SECTION - 1

1. GENERAL

- 1.1. This General Specification is to be taken as applying to all the works in this Contract. Figured dimensions on the working drawings shall be followed in preference to the scale.
- 1.2. Until and unless specified otherwise, all goods and materials are to be Pakistan manufactured and to be of the best quality, and where not otherwise specified shall be according to latest engineering practice and conforming to Pakistan Standards (P.S) or British Standard Specifications (B.S.S) or Standard of American Society of Testing Materials (ASTM). The Engineer or the Consultants may also supplement such specifications during the progress of work.
- 1.3. All materials and goods used for such and other items shall be subjected to standard testing and if found below the specified standard such as PS or BSS or ASTM or their equivalent shall be removed from the site immediately at Contractor's own expense. All testing of materials finished and unfinished, shall be carried out by the Contractor at his cost, in the presence of Engineer or Engineer or his Representative for which the Contractor shall maintain a reasonably well equipped laboratory of his own, close to the site of work or make any other additional arrangement to the satisfaction and convenience of the Engineer. The Contractor shall include testing charges in his quotations and shall not be entitled to any reimbursement on this account for routine testing.
- 1.4. The Contractor must give early attention to the submission of samples of materials for approval of the Engineer, indicating the names of the manufacturing firms where applicable especially of cement, sand, aggregates, steel, water, tiles, hard-core and all fittings. Whenever practicable, samples shall be submitted at least three weeks before it is proposed to use the materials. Until and unless specified otherwise and whenever materials are ordered to be forwarded to a testing laboratory other than site laboratory for check/ testing, the Contractor will be reimbursed the cost of fees for such tests if proved satisfactory, by the Employer. The Contractor, however, will be required to bear the cost of the fees for tests, which proved unsatisfactory.
- 1.5. The Contractor must take all steps necessary to prevent damage or interference with all supply lines such as water, electric power, fuel, telephones, drains, buried cables and any construction designed for the use of the public, government or semi government authorities or the Employer. The Contractor shall be responsible for any damage caused to such services or constructions and settle all claims in respect of such damage.
- 1.6. The Contractor shall protect from injury by covering all work, internally and externally needing protection including new concrete, Formwork, surface renderings, floors, etc., to the satisfaction of the Engineer, including the work of his sub-contractors at his own cost.
- 1.7. The whole work shall be carried out in the best manner in accordance with the instructions contained in these documents and those given by the Engineer from time to time during the progress of the work. The work shall be carried out in conformity with the best of the standard construction practices preferably the British Codes of Practices.
- 1.8. The Contractor shall submit to the Engineer for his approval before beginning the work, a complete plan of the proposed sequence and methods of operations for the execution of the works. Detailed



drawings showing the location and construction of dumping and working platforms, cranes, building and all other structures in connection with the Contractor's plant and material storage sheds shall also be submitted to the Engineer for his approval before construction.

- 1.9. Orders and directions may be given orally by the Engineer or his Representative, and shall be received and promptly obeyed by the Contractor or his Representative or any superintendent or foreman or any supervisor of the Contractor whosoever may have charge of the particular part or section of work in relation to which the orders or directions are given, and a confirmation in writing of such order or directions will be given to the Contractor by the Engineer, if so requested. The Contractor shall provide and maintain at his own expense during the performance of the work an office in the vicinity of work. Orders or directions, written or oral, from the Engineer or his Representative delivered at such office shall be considered as delivered to the Contractor. The Contractor's office shall be fitted with a telephone connected to the local Telephone Exchange.
- 1.10. The Contractor shall not use the site for any other purpose than that of carrying out this Contract work. The operations of the Contractor shall be confined to the area immediately adjoining the buildings and the works included in this Contract but site clearance shall be kept to the satisfaction of the Engineer to permit carrying out of other works by other Contractors. The Contractor shall not affix advertisements; neither shall he permit advertisements to be displayed without the written consent of the Engineer.
- 1.11. The contract drawings are the working drawings to guide the Contractor generally about the shape and size of all the structures and fittings. Before proceeding to make preparations, fabrication, execution, erection of any such fittings and other details of any temporary works, scaffolds, railings, shuttering, details of doors, windows, partitions, iron mongers work, etc; the Contractor shall be under obligation to prepare and submit all detailed shop drawings to the satisfaction and the approval of the Engineer, before doing any or all of that described above or as directed. Approval of the contractor's drawings shall not relieve the Contractor for any part of his obligation to meet all the requirements of the specifications or correctness of his drawings.
- 1.12. No cement work shall be permitted during extreme cold weather when unless otherwise authorized by the engineer.

2. PAYMENT

Contractor shall not be entitled to any separate or additional payment on account of all these general requirements and any other arrangement or action Contractor has to undertake under the direction of the Engineer for a proper carrying out of the works and meeting all obligations of the Contract.



SECTION – 2

MS PIPES AND SPECIALS

1. MILD SECTION SPECIFICATIONS

The pipes shall be made of Steel plate / coil X-42 of API standard No. 5 D Grade or PSS-0014-84.

1.1. CHEMICAL PROPERTIES AND TESTS

The chemical composition of the steel shall fall within the following limits:

Carbon	-	0.28% max.
Manganese	-	1.25% max.
Phosphorous	-	0.04% max.
Sulphur	-	0.05% max.

1.2. MECHANICAL PROPERTIES AND TESTS

- Yield Stress - 42000 psi (min. psi)
- Ultimate Tensile Strength - 60000 psi (min. psi)
- Elongation on Gauge - 27 (min. %)

1.3. STANDARD SPECIFICATIONS

For sampling testing & tolerances limits, specifications No. AWWAC-200-80 shall be followed.

1.4. THICKNESS OF PLATES / COIL

Thickness of plate / coil shall be as specified in the respective items in the BOQ. All plates used shall be free of surface defects.

1.5. PIPE

The term pipe signifies a hollow cylinder made of M.S. Steel plate / coil of uniform internal dia. & having a uniform thickness of wall throughout its length.

1.6. DIAMETER

The internal diameter of the pipes shall correspond to the net specified diameter after protective lining.

The outside diameter of the body of the pipe as measured by taping the circumference shall be uniform.



1.7. LENGTHS

Pipes shall be finished in uniform lengths.

1.8. STRAIGHTNESS

The pipe shall be straight.

1.9. ENDS

The ends of the pipe shall be so formed that when pipes of the same class and diameter are welded or jointed together to form a continuous straight conduit with a smooth & uniform interior surface.

1.10. JOINTS

Joints shall be welded as per AWWA specifications.

1.11. MANUFACTURE OF PIPES

Before starting production of M.S. pipes the contractor shall furnish the following manufacturing procedure. This procedure shall include but not limited to the following information.

- i) Material quality, full details and checks analysis including residual elements.
- ii) Material manufacturing details.
- iii) Method of plate / coil forming.
- iv) Welding procedures, including procedures for skelp welding.
- v) Method & degree of coil expansion where applicable.
- vi) Method of straightening, sizing and hydrostatic testing.
- vii) Inside diameter.
- viii) Quality control and Inspection procedures. The submitted procedures and any agreed modifications shall be strictly followed in the production of pipes. The pipes shall be spirally welded with at least two welding passes, one of which shall be on the inside. The Contractor may propose straight welding for pipe manufacturing. This should be clearly mentioned in the tender submitted by the Contractor.

The Contractor shall submit all manufacturing procedures and qualification tests result to the Engineer for approval before the total production has exceeded 20 pipes. In the event test results are not available before production has exceeded 20 pipes, the contractor shall stop production and not restart until all test results have been approved by the Engineer.

The Engineer shall witness the manufacture and testing operation of desired quantity of pipes to verify compliance with the agreed procedure.

1.12. INTERNAL PROTECTION OF PIPES – CEMENT MORTAR LINING

The internal cement mortar lining shall be applied in-situ of cement, sand, mortar 1:3 after completion of laying and backfilling of pipeline in trench, in continuity, in one course or more, by electronically driven lining machine traveling through pipe and centrifugally distributing the mortar.

uniformly across the pipe. The discharge shall be from the rear of the machine so that machine will be continuously fed with mortar by train of intermediate loading machine fed by Power Loader and high speed electric mixers, to achieve desired standard of lining.

The rate of travel of machine and rate of mortar discharge shall be mechanically regulated to produce a smooth surface and uniform thickness throughout. The lining machine shall have electronically controlled rotary trowels for smoothing of the lining so as to obtain William Hazel Coefficient in range 130-140. The mortar shall be densely packed and adhere wherever applied, there shall be no injurious rebound.

2. LINING MATERIAL

a) Sand

Sand shall consist of inert granular material. The grains shall be strong, durable and uncoated. The sand shall be well graded and shall pass a No. 16 mesh screen, with not more than five percent passing a No. 100 Sieve.

Graded sand will be bagged to ensure 1:1 mix while feeding the mixer.

Sand shall be clean and free from injurious amount of dust, clay, lumps, shale, soft or flaky particles, mica, loam, oil, alkali and other deleterious substances. The total weight of such substances shall not exceed three percent of the combined weight of the substances and the sand that contains them.

b) Portland Cement

Portland cement shall conform to type I or type II of ASTM C150 or shall be as otherwise specified by the Engineer.

c) Water

Water for mixing mortar shall be clean and free of mud, oil and injurious amounts of organic materials or the deleterious substances. Potable water shall be used.

2.1. MIX FOR LINING

a) Composition

Mortar for lining shall be composed of cement, sand and water that have been well mixed by the concrete mixer and shall be such consistency as to produce a dense, homogeneous lining.

b) Proportions

The approximate proportions of cement and sand in the mortar for the lining shall be 1 part of Portland cement to 1 part of sand by volume. The exact proportions shall be determined by the characteristics of the sand used as approved by the Engineer.

c) Water Content

The water content shall be the minimum that produces a workable mixture, with full allowance made for moisture collecting on the interior of the pipe surface.



d) Mixing

Mortar shall be mixed long enough to obtain maximum plasticity. The mortar shall be used well before initial set.

2.2. THICKNESS OF LINING

The lining shall be uniform in thickness within the allowable tolerance, except at joints or deformations in the pipeline, at which places also the thickness shall be as uniform as possible to the satisfaction of the Engineer. Cement Mortar Lining thickness shall be as specified by AWWA C602-83 and approved by the Engineer.

2.3. CURING

Curing operations shall begin immediately following completion of the machine placement of the mortar lining in a section of pipeline. The selection of pipe shall be closed with airtight cover over all openings and shall be maintained in a moist condition.

When a section of pipeline has been completed, the Contractor shall be responsible for careful curing of the mortar lining until the Engineer fills the section with water, or until the lining work has been accepted by the Engineer, but in no case for less than seven days.

2.4. CLEANING OF PIPE FOR LINING

The interior surface of pipe to be lined shall be cleaned to remove corrosion products, chemicals or other deposits, loose and deteriorated remains of old coating materials, oil, grease and accumulations of water, dirt and debris. Shot or sand blasting is not required to prepare surface for lining.

2.5. MACHINE APPLICATION OF MORTAR LINING

The lining shall be applied in one course or more by machine traveling through the pipe and distributing the mortar uniformly across the pipe. The discharge shall be from the rear of the machine so that the newly applied mortar is not marked. The rate of travel of the machine and the rate of mortar discharge shall be mechanically regulated to produce a smooth surface and uniform thickness throughout to the satisfaction of the Engineer. The mortar is density packed and adheres wherever applied; there shall be no injurious rebound.

2.6. GUARANTEE AND PERFORMANCE CRITERIA

Internal Cement Mortar Lining should be got done by an approved and specified firm, who must have proven past experience in machine application of cement mortar lining. During the warranty period if any damage occurs because of lining defect it shall be got rectified by the specialist company at no cost to the Employer. 15 years written warranty would be required to be provided by the specialist company with proven record. The Contractor will be allowed cement lining for individual pipes and specials in case of inclined or vertical length or for start length of pipes.



2.7. PAYMENT

Payment for the internal cement lining and external protection of the MS pipeline shall be made for the acceptably completed work as per specifications at the approved tender rates, which shall include all costs for labor, material and equipments etc.

3. MILD STEEL SPECIALS

3.1. GENERAL

The specials like bends; tees etc. to be used shall be manufactured with MS plates of specified thickness. Internal diameters shall be as given on the drawings or as directed by the Engineer. The Contractor shall submit shop drawing for all special before the manufacturing of special

3.2. QUALITY OF STEEL

a) Chemical Properties

All collars and specials shall be made from steel, the analysis of which shows not more than 0.06% of sulphur or phosphorous.

b) Physical Properties

The steel shall comply with the requirements as described for M.S. Pipes.

3.3. DIAMETER

The internal diameter of the specials and collars shall be as specified for pipes or as approved and directed by the Engineer.

3.4. JOINTS

The specials shall have standard flanges with holes at both ends and nuts and bolts with matching flanges provided with pipes. Plain ended bends shall be provided where specified for making weld joints or as approved and directed by the Engineer.

3.5. LENGTH / WIDTH

Length of each special and the width of the collar shall be as shown in drawing or approved and directed by the Engineer.

3.6. COATING

The internal and external coating for specials for rising main shall be same as provided for M.S. Pipes.

3.7. TESTS

The specials and the pipes shall withstand a pressure of 61 meters.



3.8. PAYMENT

The rates quoted for M.S. specials shall include cost of providing for material, labour, equipment including cost of cutting, rolling, levelling, chamfering, welding, drilling holes in flanges etc. complete including internal and external protection similar to M.S. Pipes mentioned in these specification cement lining. Payment shall be made as per tendered rates.



SECTION – 3

HDPE PIPES AND FITTINGS

1. HDPE PIPES FITTINGS AND ACCESSORIES

1.1. DESCRIPTION

The PS 3580:1984 PN-8, 10 & 12.5 & in trenches to correct alignment and grade, as indicated in the drawing and specifications including all other accessories and equipment.

1.2. SCOPE

This material specification details the minimum requirements for the design, manufacture, testing, inspection and supply of High Density Polyethylene (HDPE) or High Performance Polyethylene (HPPE) pipe material and fittings to be used for transport and potable water.

This specification is intended to be used for PN-08 and pipe series SDR 21. Contractor has to substantiate the reason when he is deviating from SDR 21 and has to get approval from the Engineer.

1.3. APPLICABLE STANDARDS AND CODES

The following codes and standards, to the extent specified herein, form a part of this specification. The latest edition of these codes and standards shall govern the work.

ISO 4427	Polyethylene (PE) pipes for water supply –specifications
ISO 161-1	Thermoplastic pipes for conveyance of fluids – nominal outside diameter and nominal pressure- part 1: Metric series
ISO 1167-1to4	Thermoplastic pipes, fittings and assemblies for the conveyance of fluids
ISO 3126	Plastic pipes – Measurement of dimensions
ISO 4065	Thermoplastic pipes – Universal wall thickness table
ISO 6964	Polyolefin pipes and fittings – Determination of carbon black content by calcination and pyrolysis – Test method and basic specification.
ISO 9080	Thermoplastic pipes for the transport of fluids – Method of extrapolation of hydrostatic stress rupture data to determine the long-term hydrostatic strength of thermoplastic pipe materials.
ISO 11922-1	Thermoplastic pipes for the conveyance of fluids – Dimensions and tolerances Part: 1: Metric series.



ISO 12162	Thermoplastic materials for pipes and fittings for pressure applications – Classification and designation – overall service (design) coefficient.
ISO 13761	Plastic pipes and fittings – pressure reduction factors for polyethylene pipeline systems for use at temperatures above 200 C.
ISO 7005 – 3	Metallic flanges – Part 3, Copper alloy and composite flanges
BS EN 12201	Plastic piping systems for water supply - polyethylene
ISO 974	Determination of the brittleness temperature by impact
ISO 2505	Thermoplastics pipes - Longitudinal reversion
ISO 6259	Determination of tensile properties

2. TECHNICAL REQUIREMENTS

2.1. MATERIAL

The CONTRACTOR shall identify the manufacturer of the resin, the resin type and classification. In addition, the CONTRACTOR shall provide evidence that the resin proposed is suitable for use at the design temperature and under the design pressures.

Any change in the material, the material specification, or the manufacturer's location shall be subject to prior approval of the ENGINEER.

Pipes and fittings shall be homogenous throughout and free from visible cracks, holes, foreign inclusions, blisters, dents or other damaging defects.

Material shall be uniform in opacity, density, interior smoothness, and other physical properties.

It shall have adequate resistance to weathering and other ageing from storage for a minimum of two years after manufacture.

The material of the polyethylene pipes and fittings which is in contact with or likely to come in contact with drinking water shall not constitute a toxic hazard, shall not support microbial growth and shall not give rise to unpleasant taste or odour, cloudiness or discoloration of the water.

The concentration of substances, chemical and biological agents leached from materials in contact with drinking water, and measurement of the relevant organoleptic / physical parameters, shall not exceed the maximum values recommended by the World Health Organisation in its "Guidelines for Drinking Water Quality" or the EEC Council Directive on the "Quality of Water Intended for Human Consumption", whichever is more stringent in each case.

For the manufacturing of pipes & fittings new materials to be used only (Rework material is not acceptable).



Pipe manufacturer shall confirm that all fittings to be provided for the pipe systems shall meet the same quality requirements as for the pipes to ensure the same performance for design life cycle.

The pipes and fittings shall be manufactured from polyethylene containing only those antioxidants, UV stabilisers and pigments necessary for the manufacturing process to fulfil the requirements of the specification.

All pipes and fittings shall be suitable for butt fusion or electro fusion techniques.

Contractor shall provide PE manufacturers guideline for the applicability of the material used. If required PE manufacturers shall provide assistance and training.

2.2. PHYSICAL PROPERTIES

Pipes and fittings shall be made of high density polyethylene (HDPE) and shall comply with the requirements of ISO 4427 PE 100. The material shall be produced by a member of the PE 100 + Association.

The material used for the manufacturer of pipes and fittings shall be in accordance with Table 1 and Table 2 of clause 4.4 of ISO 4427-1

The minimum required strength (MRS) of the material compound shall be 10 MPa at 20 oC.

The design stress shall be 8 MPa.

Lifecycle durability of 80 years is to be confirmed.

For design calculation, pressure, reducing coefficients 4427-1, Annex A are applicable. The thermal stability of polyethylene material shall meet the requirements of ISO 4427.

2.3. PIPE DIMENSIONS (GEOMETRICAL CHARACTERISTICS)

The pipe dimensions for water systems shall be based on standard dimensions according to ISO 4427 and measured in accordance with ISO 3126.

Straight pipe shall be supplied in standard lengths measured at $23^{\circ} \text{C} \pm 2^{\circ} \text{C}$. unless otherwise specified; coil lengths shall not exceed 100 m (328 ft.).

Coiled pipes shall be coiled such that localized deformation is voided and the minimum internal diameter of the coil shall not be less than 18 dn.

2.4. PIPE APPEARANCE

When viewed without magnification the internal and external surfaces of pipes shall be smooth, clean and free from scoring, cavities and other surface defects. The pipe ends shall be cut cleanly and square to the axis of the pipe.

All polyethylene pipes to be used for the transmission and distribution of potable water shall be black and have blue stripes.



The carbon black content in the compound shall be 2.25 ± 0.25 % by mass when measured in accordance with ISO 6964. The dispersion of carbon black when determined in accordance with ISO 11420 shall be equal to or less than grade 3.

2.5. FITTINGS

The fittings shall be injection moulded or formed from material compatible to that of the pipe and shall be as resistant to the external and internal environments as the other demands' of the pipe system.

At locations where HDPE to metal connections are specified, Nylon based polyamide 11 coating system complying with the requirement of AWWC224 or epoxy coated backing rings shall be used, or special restrained transition fittings subject to approval by the ENGINEER. The flanges shall be drilled to ISO 7005-2, as per the design requirements.

2.5.1. Fittings Appearance

When viewed without magnification the internal and external surfaces of pipes shall be smooth, clean and free from scoring, cavities and other surface defects. The fitting shall be blue or black.

2.5.2. Fittings Dimensions

The dimensions shall be measured in accordance with EN/ISO 3126

2.5.3. Wall Thickness Of Fittings

The wall thickness of the body of the fitting at any point shall be equal to or greater than the minimum wall thickness of the corresponding pipe.

3. PIPE INSTALLATION

- a) Trench excavation shall be carried out in accordance with Excavation of the specification.
- b) Install pipe, fittings, and accessories in accordance with manufacturer's instructions.
 - Provide qualification details of the manufacturer's technical expert to be assigned to the Contract. The technical expert shall have expertise, experience and skills necessary for advising and monitoring all aspects of transport, storage, handling, installation and testing of pipes as appropriate.
 - The technical expert shall provide comprehensive technical assistance to the Contractor throughout
 - Contract and regularly monitor the Contractor's activities and report on shortcomings.
- c) The pipeline shall be within 1 inch of the specified line and the invert level shall be within 6mm of the specified value and shall be such that there is no back fall at any point on a gravity pipeline.



- d) Install bedding, surround and backfill in accordance with the pipe manufacturer's requirements.
- e) Install appurtenant facilities on the pipeline such as manholes, valve chambers as specified of the specification.
- f) Lay pipes from downstream to upstream unless agreed otherwise with the Engineer.
- g) HDPE pipelines can accommodate gradual changes of direction in the vertical and horizontal plane. However the pipe should not normally be bent to a radius less than 25 times the outside diameter of the pipe.
- h) When cut pipe is required, ensure that the cutting is done by a machine, leaving a smooth cut at right angles to the axis of the pipe.
 - Ensure that all pipes and fittings are sound and clean before laying. When pipe lying is not in progress, ensure that the pipe ends are at all times fitted with watertight plugs or caps. The plugs or caps shall only be removed for the purposes of making a connection of the pipe end or testing the pipeline. The plugs or cap shall be replaced immediately on completion of the test.

3.1. BUTT FUSION JOINTING

- a) Butt fusion jointing shall only be used to join pipes of the same PE material with compatible MFR and with the same nominal wall thickness and outside diameter. The following procedures shall serve as a general guide only. The Contractor shall obtain detailed jointing instructions from the manufacturer who shall have a technical representative available at the Engineer's request during the jointing process.
 - i. The butt fusion machine should be sited within a shelter and the ends of the pipe being joined should be covered or plugged to prevent through drafts.
 - ii. Each component that is to be fused should be held in position in the purpose built clamping jig. The lengths of pipe hanging outside the jig should be supported by means of roller cradles.
 - iii. The pipe ends should be faced so that the finished surfaces are perfectly smooth free of visible ridges, valleys or other surface imperfections.
 - iv. The outside diameters of the pipe ends should match closely without the offset exceeding 10%
 - v. The pipe ends should be heated to the pipe manufacturer's recommended temperature and interfacial pressure. The Contractor should use a pyrometer or other surface temperature measuring device to confirm and record the actual surface temperature for each weld. Temperature indicating crayons should not come into contact with the surface to be welded.
 - vi. After the pipe ends have been properly melted, the heater tool should be removed within the specified time. The molten pipe ends should be brought together and allowed to cool without disturbance to form the permanent weld. The proper bead size and geometry



specified for the pipe being welded should be formed.

4. INSPECTION AND TESTING

4.1. CERTIFICATION AND DOCUMENTATION

CONTRACTOR shall supply the ENGINEER with copies of certificate and test documents. Such documentation shall be subject to the Engineers' approval prior to shipping.

4.2. TEST RESULTS AND FREQUENCIES

The MANUFACTURER shall establish and maintain a current record of test results according to the requirements of the applicable standards and this specification. The MANUFACTURER shall perform all the tests required by ISO 4427 to demonstrate the characteristics and quality of the resin material and the dimensional tolerances of the pipe. The MANUFACTURER shall document all the tests, with frequencies and results as indicated in ISO 4427. The records shall

4.3. INSPECTION AND AUDIT REQUIREMENTS

Pipe shall comply fully with ISO 4427, the requirements of the PE 100 + Association and all the additional requirements of this specification.

To verify compliance with this specification, the ENGINEER shall reserve the right to appoint an independent third party inspector to witness the applicable qualification tests, review production records, and inspect general handling and shipping procedures. The third party inspector shall have full access to the testing and production facilities and will be a fully authorized representative of the ENGINEER.

4.4. ACCEPTANCE CRITERIA

The order shall meet the following criteria:

A copy of the raw material MANUFACTURER's "Certificate of Quality Control Testing" covering each batch of raw material used for pipes purchased under this specification, shall be available for inspection by the ENGINEER on request.

Pipe wall thickness shall be controlled by continuous scanning using ultra- sound or other qualified devices. These devices shall be regularly calibrated for accuracy by certificated agency.

Successful test performance and acceptable results for the testing program outlined in this specification.

An acceptable inspection report from an independent third party inspection company according in the manufacturer's country.

When performed, acceptable results from an independent test audit of any portion of the tests noted in ISO 4427 and this specification.



4.5. DEFECTS

When the rejected item is a length or coil of pipe, the lengths or coils manufactured immediately before and after the defective lengths or coils shall be carefully examined. If further defects are found, this is sufficient cause for rejecting the entire batch. This will not apply to local damage that did not occur during manufacture, such as gouges or cuts during handling or transit.

4.5.1. Quality Assurance/Quality Control

A copy of the MANUFACTURER's QA/QC plan shall be submitted to the ENGINEER with its quotation for review and concurrence prior to award. If MANUFACTURER's facility is ISO certified, QA audit requirements shall be waived in favour of ISO 9000 registrar audits, unless the ENGINEER'S trend analysis program indicates areas of concern

4.5.2. Packing, Marking And Vendor Documentation

Pipe Identification and Packing

The marking information and sequence shall comply with ISO 4427. All pipes and fittings, including test samples shall be clearly and permanently marked using indent printing in a colour that contrasts with the pipe.

All pipes shall be indelibly marked at maximum intervals of 1m

The marking shall indicate at least the following information:

- The manufacturer's name and/or trademark
- The dimensions (nominal outside diameter x nominal wall thickness)
- Material and designation
- The nominal pressure (PN) in bar
- The pipe series (S or SDR) (optional)
- The production period (date or code)
- The number of this International Standard.

The word "water" shall also be included if the pipe is intended for potable water.

- The maximum quantity of pipe to have the same coil/length number is one silo (coiled pipe) or one bundle (straight lengths). The maximum combined length of pipe in the silo or bundle with the same coil/length number shall not exceed the maximum allowable coil length as specified.
- When pipe material is boxed, the coil number shall be clearly marked on the outside edge of the box or silo. Invoices and packing lists shall include the date of manufacture and coil/length numbers for all material in the shipment.
- The fittings shall be packaged in bulk or individually protected where necessary in order to prevent deterioration and contamination. The package shall have at least one label with



manufacturer name, type and dimension of the fittings and number of units.

4.5.3. Packaging and Transportation

The CONTRACTOR/SUPPLIER shall provide packing and transportation procedures for approval by the ENGINEER and shall comply with the following requirements.

4.5.4. Delivery

Delivery of the plastic pipes and fittings to site, shall be no later than six months after the stamped manufacture date.

4.5.5. Weathering

A certificate from the pipe/fitting manufacturers shall be provided, confirming that the products may be stored in the open for minimum of 2 years without any adverse effect.

4.5.6. Tie-downs

Tie-downs shall be at least 100 mm (4.0 inch) wide and be clean and free from sand, gravel and other such materials. For straight length pipe (up to 12 m (39 ft.)), a minimum of 6 tie-downs are required.

4.5.7. Pallets

The pallets shall be suitable for transporting the material from the place of manufacture to the designated receiving location without causing any damage to the pipe. The pallets shall not contain any broken planks or extremities that may damage the coiled pipe or straight lengths. They shall be durable enough to prevent loose pallet nails from gouging the bottom coil/straight length.

4.5.8. Overhang

Pipe shall not overhang at either end of the trailer.

4.5.9. Stacking

The CONTRACTOR/MANUFACTURER shall not ship small coils stacked inside silos of larger coils. Frames manufactured for the containment of straight lengths of polyethylene pipe during transport and storage shall not contain nails or other fastening devices that may damage the pipe.

5. TRUCKING

Where pipes are transported by vehicles, the vehicles should have a flat bed and be free from sharp edges or projections. During transport, polyethylene pipes shall be protected from diesel fumes and be continuously supported to prevent movement between the material and its support.



6. SILO'S

Silo packs of coiled pipes shall be squarely stacked and well supported on pallets. Coils shall not overhang the pallets and, shall not be stacked higher than 2.3 m (8.0 ft.)

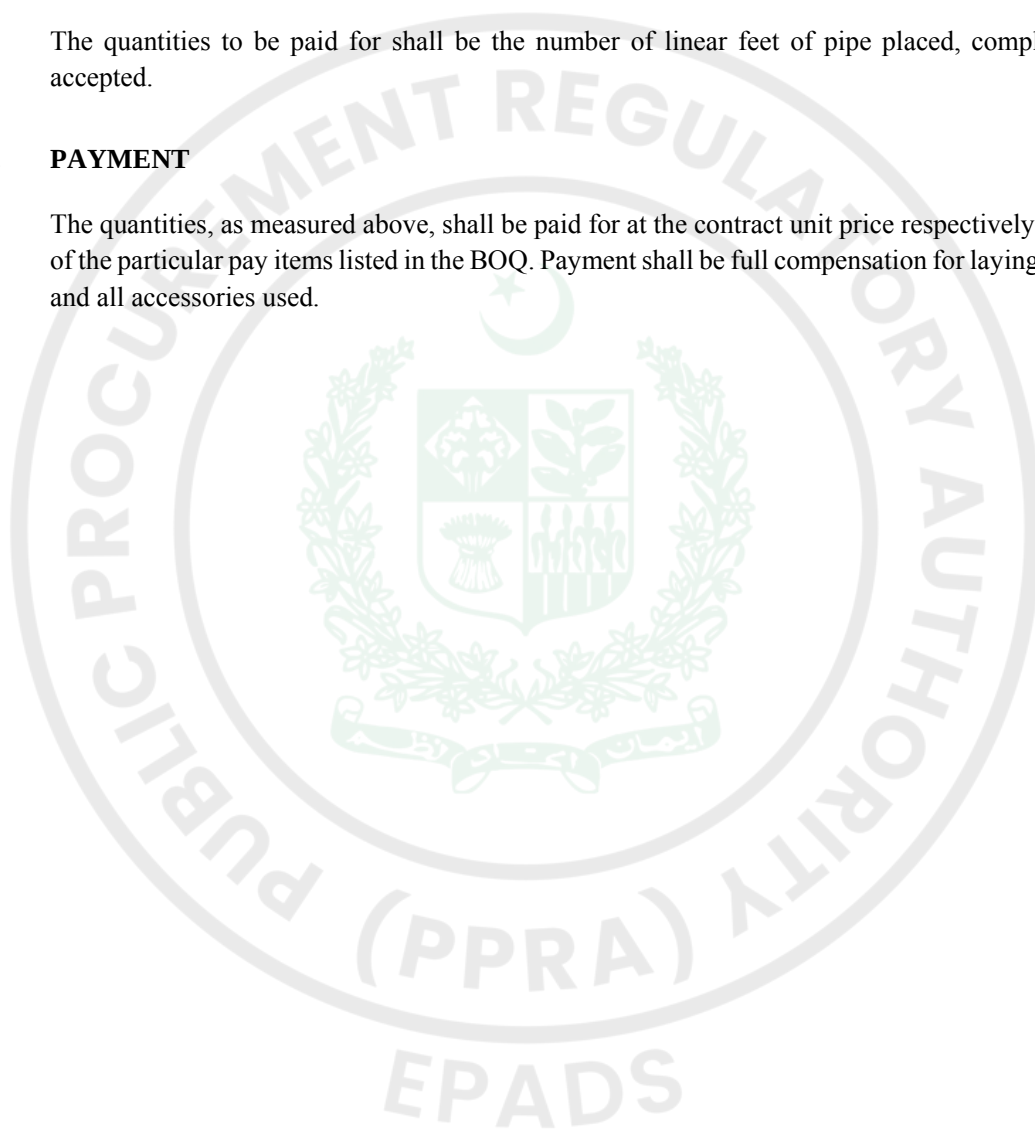
7. MEASUREMENT AND PAYMENT

7.1. MEASUREMENT

The quantities to be paid for shall be the number of linear feet of pipe placed, completed and accepted.

7.2. PAYMENT

The quantities, as measured above, shall be paid for at the contract unit price respectively, for each of the particular pay items listed in the BOQ. Payment shall be full compensation for laying, jointing and all accessories used.



SECTION -4

UNPLASTICISED POLYVINYL CHLORIDE (uPVC) PIPES AND PIPE FITTINGS

1. SCOPE

The work under this section of the specifications includes furnishing all plant, labour, equipment, appliances, materials and in performing all operations required in connection with supply, installation, testing, flushing and commissioning of uPVC Pressure Pipes and Pipe fittings as specified herein, bill of quantities and as shown on the drawings and/or as directed by the Engineer.

2. APPLICABLE CODES AND STANDARDS

All works and materials under this section shall conform to the latest edition of the following applicable codes and standards. When the requirements of these specifications or the drawings exceed the code requirements, the Contractor shall be bound by the specifications and/or drawings for that requirement.

B.S. 2494	"Materials for Elastomeric Joint Rings for Pipe works and Pipelines"
B.S. 4346	"Joints and Fittings with Unplasticised PVC Pressure Pipes"
B.S. 3505	"Unplasticised PVC Pipe for Cold Water Services"
AWWA Manual M23	"PVC-Pipe – Design and Installation"
AWWA C651	"Disinfecting Water Mains"
ASTM D 792	"Density & Specific Gravity (Relative Density) of Plastics by Displacement."
ASTM D 1784	"Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds."
ASTM D 1785	"Poly (Vinyl Chloride) (PVC) Plastic Pipe Schedules 40, 80 and 120."
ASTM D 2564	"Solvent Cement for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings."
ASTM D 2665	"Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste and Vent Pipe and Fittings."
ASTM D 2000	"Rubber Products in Automotive Applications."
USCS	"Unified Soil Classification System"

Other authoritative codes and standards which ensure equal or higher quality than those references may also be acceptable subject to satisfaction and approval of the Engineer.

Any conflict between the requirements of this specification and those on the figures herein or in the codes, standards and specifications referred to herein shall be brought to the attention of the Engineer for resolution whose decision will be final and binding.



3. APPLICABLE SECTIONS OF TECHNICAL SPECIFICATIONS

The following specification sections shall be followed for carrying out associated works mentioned herein below.

Section No.	Description
1100	Earthwork
2100	Formwork
2200	Reinforcement
2300	Plain and Reinforced Concrete

4. GENERAL REQUIREMENTS

- 4.1 Pipes and fittings shall be new and unused.
- 4.2 Where manufacturers of pipes and fittings are specified, they shall be of the same manufacturers unless otherwise approved by the Engineer.
- 4.3 Where more than one manufacturer of pipes is specified, then their fittings shall be of the same manufacturer.
- 4.4 If a large diameter pipe is procured from local manufacturers and its fittings are not produced locally then the manufacturer should import quality fittings.

5. SUBMITTALS

- A. Product Data and Samples: Submit manufacturer's technical product data, including installation instructions, and dimensioned drawings for each type of manufactured piping specialty. Submit samples as may be required by the Engineer.
- B. The Contractor shall submit to the Engineer for approval the following information regarding the specified/ proposed items of pipes and fittings.
 - (i) Name and address of the manufacturers
 - (ii) Country of origin, make and model
 - (iii) Dimensions and wall thicknesses of pipes and fittings
 - (iv) Factory test certificate from the manufacturers
 - (v) Warranty, if so provided by the manufacturers
 - (vi) Method of jointing, testing and commissioning
- C. Approval by the Engineer shall not be construed as authorizing any deviation(s) from the specifications unless they are specifically brought to notice of the Engineer.
- D. Approval by the Engineer shall not relieve the Contractor from any of his contractual responsibility



regarding satisfactory performance and other requirements of the pipes and fittings.

6. SPECIAL REQUIREMENTS

- 6.1 Pipes and fittings shall be suitable for the intended use.
- 6.2 Pipe samples shall be randomly selected from each batch or as directed by the Engineer for hydraulic test. Pipe shall be tested at the manufacturer's works to specified hydraulic test pressure. The test pressure shall be maintained for sufficiently long time for proof and inspection.
- 6.3 Each pipe and fitting shall be permanently marked or engraved giving the following information:-
- (i) Make and Size
 - (ii) Class, Duty or Pressure Rating
 - (iii) Standards according to which the pipe and fitting have been manufactured.
- 6.4 Unless otherwise specified diameters of pipes and fittings shall be nominal. Actual inside and outside diameters and tolerances in diameters of pipes and fittings shall be according to the specified standards.
- 6.5 Unless otherwise specified, service ratings of pipes and fittings shall not be less than the maximum pressure to which they will be subjected to.
- 6.6 Unless otherwise specified, wall thicknesses of the pipes shall be according to the class, schedule or duty of the pipes. The wall thicknesses shall be measured at locations excluding the jointing ends. The tolerances in wall thicknesses shall be according to the specified standards. Wall thicknesses of fittings shall not be less than those of corresponding pipes to which they are joined together.
- 6.7 Pipes and fittings ends shall be matching and compatible with each other and with the ends of valves and appurtenances to which they are joined.
- 6.8 The quality of pipe and fitting shall be checked through approved equipment's/ gauges.
- 6.9 Unless otherwise approved by the Engineer, fittings, jointing materials such as rubber rings, gaskets, nuts & bolts and jointing compound etc. shall be from the approved manufacturers.

7. MATERIALS

7.1. GENERAL

Materials shall conform to the latest referred standard specifications and other provisions stipulated



herein and shall be new and unused. Prior to procurement of the materials, the Contractor shall be required to prepare and submit to the Engineer for his approval a complete schedule of materials to be used in the works together with a list of the names and addresses of the manufacturers and the trade names of the materials. The schedule shall include diagrams, drawings and such other technical data as may be required by the Engineer to satisfy himself as to the suitability, durability, quality and usefulness of the material intended to be purchased. The material from which the pipe is produced shall consist substantially of virgin polyvinyl chloride, to which may be added only those additives that are needed to facilitate the manufacture of the polymer, and production of sound, durable pipe of good surface finish, mechanical strength and opacity. PVC scrap, old and recycled PVC shall not be allowed to be used under any circumstances. None of these additives shall be used separately or together in quantities sufficient to constitute a toxic hazard or to impair the fabrication of welding properties of the pipe or to impair its chemical and physical properties. The pipe material shall not have any detrimental effect on composition of the water flowing through them. The quantities of lead, dialectal tin C4 and higher homologues and any other toxic substances extracted from the internal wall of the pipes shall not exceed the values specified in B.S 3505.

7.2. PIPES

uPVC Pressure Pipes shall conform to specified or appropriate class of B.S. 3505 or ASTM D 1785.

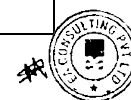
7.3. FITTINGS

uPVC fittings and specials shall be of the appropriate class and shall conform to B.S. 4346. Fittings and specials shall have the required shapes, and dimensions of turned ends to be joined with the uPVC pressure pipes.

7.4. GENERAL PROPERTIES OF UPVC PIPES

The general properties of uPVC pipes are as under:

Test	Unit	Value at 20° C	Remarks	Design Data
Specific Gravity		1.42 – 1.46	Model.43	1.44 ₋ +/-0.02
Inflammability		Self-extinguishing	Ignites when flame approaches but the fire extinguishers by itself when brought away from flame.	
Weather Resistance		Color fading but no decrease in strength	Tensile strength increases slightly and elongation decreases.	
Primary Softening Point	C	75 - 80	Softening initiates at this point	



Welding temperature	C	180 - 185	Becomes slightly viscous	
Molding temperature	C	190 - 200	Becomes paste like to collapse pipe shape	
Decomposition point	C	205 - 210	Scorching by carbonization And ehydrochloriation.	
Specific Volume Resistivity	- Ω-cm	35 x 10 (15)	High Electric Insulator Non-Magnetizing.	
Di - electric	KV/m m	23 -28		

7.5. JOINTS

uPVC pressure pipes and fittings shall be joined with elastomeric rubber ring (gasket). uPVC pressure pipes and fittings shall also be joined together with thermogun, doing hot welding or shall be solvent welded as specified herein, in bill of quantities, as shown on the drawings and/or as directed by the Engineer and shall conform to B.S. 4346. The elastomeric rubber rings shall conform to B.S. 2494.

8. FACTORY TESTS

The Contractor shall inform the Engineer the schedule of pipe manufacturing in the factory for this particular project. The Engineer may visit pipe factory to inspect the pipe manufacturing process. The Engineer may assign his representative to supervise the manufacturing and testing of pipes. The Contractor shall assign his representative at factory to supervise the pipe manufacturing and quality control test. All test equipments should be calibrated. The tests shall be conducted while the equipment has the test validity which is normally one year from the date of calibration.

The Contractor shall arrange the following tests at factory in the presence of Engineer or his representative on selected pipe samples:

- Methylene Chloride test
- Longitudinal reversion & resistance to delamination test
- Hydrostatic pressure test
- Impact strength test
- Fracture toughness test
- Specific Gravity Test
- Vernier Calliper for thickness & diameter

8.1. METHYLENE CHLORIDE TEST

This is a basic quality control test carried out on uPVC pipe sample during production. Meth



Chloride Test gives more accurate idea of homogeneity and uniformity of gelation of the uPVC melt in the machine and the die in 20 minutes only.

Test Description:

uPVC pipe samples from each production line is immersed in Methylene Chloride at 20°C for 20 minutes. Length of sample can be between 75 to 100 mm and immersion may be between 40 to 50 mm... Immediately after this time limit the test piece is taken out and inspected for any indication of attack of Methylene Chloride on:

- Inside and outside surfaces of immersed pipe sample.
- Across the full cross section of pipe wall.
- Disintegration/ dissolution of pipe or portion of it.

This test is recommended to be done on both pressure and non-pressure pipes.

8.2. LONGITUDINAL REVERSION & RESISTANCE TO DELAMINATION TEST

This test is carried out regularly on each extrusion line during the production run. The objective of this test is to measure shrinkage of uPVC pipe due to stresses. The shrinkage at any point around uPVC pipe circumference should not be more than 5%. Further when test sample is cut at four places there should be no delamination, cavities, bubbles and cracks when viewed with naked eye along the 150 mm length of cut portions. Passing this test gives indication of long term strength and durability of uPVC pipe in applications.

Test Description:

Test is carried out in temperature controlled Glycerin bath at 150°C by immersing the test pieces. One of the pieces has two marks at 100 mm part along the full circumference and the other piece has not mark. Immersion time in the bath is as per following table.

Pipe Wall Thickness (mm)	Minimum Immersion Period (Minutes)
8.6 or less	15
From 8.6 to 14.1	30
More 14.1	60

After the set times the two pieces are taken out and the piece with two marks is allowed to cool to room temperature and shrinkage is measured. The second piece is given four longitudinal cuts when hot and the piece is examined for the defects. If pipe is found not meeting the requirements this is deemed to have failed the test. This test is recommended to be done on both pressure and non-pressure pipes.

8.3. HYDROSTATIC PRESSURE TEST

This is an important and very critical test on uPVC Pipes and is regularly carried out during the production run on pipe sample from each extrusion line. It is suggested that it would be helpful



practice if before this test, the pipe sample have passed both longitudinal reversion and delamination tests.

Test Description:

Test samples are collected from each extrusion line and given hydrostatic (water) pressure at 20°C in a constant temperature water bath of suitable size. Tests are regularly carried out on the pipes from each line. Time of test is one hour and pressure is controlled as per the following table.

S.No.	Class & Pressure	Minimum 1 Hour Failure Pressure
i)	Class B 6 bar	21.6 bar
ii)	Class C 9 bar	32.4 bar
iii)	Class D 12 bar	43.2 bar
iv)	Class E 15 bar	54.0 bar
1 bar = 1.02 kilogram force / cm ² = 14.50 pound force / inch ²		

8.4. IMPACT STRENGTH TEST

Good impact strength is one of the important characteristics of uPVC Pipes. P.S.3051 (1991) for uPVC Pipes which are based on B.S.3505 (1986) of U.K. specify complete procedure with set of conditions for this impact test on uPVC Pipes.

Test Description:

Testing of uPVC Pipes specimen is done under set conditions at 20°C and according to a program detailed in P.S. 3051 (1991). The testing equipment for impact on uPVC Pipes is falling ball type, is very simple, low cost and can be fabricated locally. Testing of uPVC Pipe samples is carried out during production run.

Target value for standard uPVC Pipe is to achieve a True Impact Rate (TIR) of less than 10% and with a 90% confidence limit.

8.5. FRACTURE TOUGHNESS TEST

This test is carried out in accordance with Pakistan Standards P.S.3051 (1991) which is based on B.S.3505 (1986) of U.K.

Test Description:

The initial test piece shall be a pipe at least 200 mm long. Draw a reference line along the complete length of the test piece. Cut two pipe rings one of length 30±5 mm for Fracture Toughness and the other of 170±5 mm approximately in such a manner that cut surfaces are perpendicular to the longitudinal axis of the pipe.



Perform Methylene Chloride test first and note the response in accordance with Clause C.2.3.4 of P.S. 3051 identify the response as type 1, 2 or as type 3. With the help of reference line, locate the corresponding area on the test piece (pipe ring of length 30 ± 5 mm which was initially separated from initial test sample 200 mm) where measured attack of Methylene Chloride has occurred, cut a notch in the bore of the 30 mm test ring at this point. Notch would be across the complete width of the ring a depth of 25% of the wall thickness ± 0.1 mm at that point. Just opposite the notch, cut a segment of 20 ± 2 mm out of that ring, such that the distance between the ends is 20 ± 2 mm. The remaining segment shall be the test piece.

Test Procedure:

Condition the test pieces, with clamps at $23 \pm 2^\circ\text{C}$ for the period specified below:

Pipe Wall Thickness (mm)	Conditioning Time (Min)
< 8.6	15
> 8.6 < 14.1	30
> 14.1	60

Calculate the required mass of the test weight piece using applicable method Clause 3.4 and tables # 9 & 10 given in P.S.3051 (1991). Support the test piece on the cut out section opposite the notch and apply force to the test piece in the form of hanging weight piece. Maintain the force on the test piece in air at $23 \pm 2^\circ\text{C}$ for 15 min or until the test fails at the notch by breaking or by developing cracks visible without magnification, which ever period is the shorter.

Note:

The test piece for fracture toughness test is the pipe ring of length 30 ± 5 mm which was initially separated from sample of 200 mm length.

This test is recommended to be done on both pressure and non-pressure pipes.

8.6. SPECIFIC GRAVITY TEST

This test shall be carried out in accordance with ASTM Standard D 792. All the manufacturing pipes shall be individually checked for cracks and other defects before transportation to the site. All pipes shall be properly marked at factory by embossing that number to identify the project consignment. Factory Test Certificates for the above shall be submitted by the manufacturer.

9. TRANSPORTATION, HANDLING & STORAGE

The Contractor shall be responsible for proper transportation, handling (loading and unloading) and storage of pipes and fittings as per the manufacturer's recommendations and direction of the Engineer.



9.1. TRANSPORTATION

Transportation of pipes shall be done in such a way that they are secure and that no more than an absolute minimum of movement can take place on the vehicle during transit. The same care is needed if pipes are to be transferred from one vehicle to another, how short the final journey may be. Ends of the pipes would be provided with end caps to ensure that foreign materials and rodents etc. do not enter the pipe.

9.2. RECEIVING

When receiving the pipes and/ or fittings shipment at the job site, the Contractor should be inventoried and inspected each shipment with care. It is the carrier's responsibility to deliver the shipment in good condition. The receiver has the responsibility to ensure that there has been no loss or damage. The following procedures for acceptance of delivery are recommended:

- Examine the load. If the load is intact, inspection while unloading should be sufficient to ensure that the pipe has arrived in good condition.
- If the load has shifted, has broken packaging, or shows rough treatment, then each piece should be carefully inspected for damage.
- Check total quantities of each item against shipping records.
- Note any damaged or missing items on the delivery receipt.
- Notify carrier immediately of any damage or loss and file a claim in accordance with their instructions.
- Do not dispose of any damage material. Ask the pipe manufacturer for instructions in case of disposal off or replacement.

9.3. UNLOADING

The means by which pipes and fittings are unloaded in the field is the decision and responsibility of the receiver. Preferred unloading is in package units using mechanical equipment; however the pipe can be unloaded individually by hand.

The following instructions should be carefully followed, when unloading package units:

- Remove restraints from the top of unit loads. These may be fabric or steel straps, ropes, or chains with padded protection.
- If there are boards across the top and down the sides of the load, which are not part of the pipe packaging, remove them.
- Use a forklift (or front-end loader equipped with forks) to remove each top unit from



the truck, one at a time.

- If a forklift is not available, use a spreader bar with fabric straps capable of carrying the load. Space straps approximately 2.4 meter (8 ft.) apart. Loop straps under the load. Cables may also be used if cushioned with rubber hose sleeves or other material to prevent abrasion of the pipe.
- To unload lower units, repeat the unloading process described above.
- **CAUTION:**
 - During the removal and handling, ensure that the bundles of pipes do not impact anything (especially in cold weather).
 - Do not handle units with individual chains or single cables, even if padded.
 - Do not attach cables to unit frames or banding for lifting.
 - Store and place pipe package units on level ground. Do not stack units more than 2.4 meter (8 ft.) high. Units should be protected by damage in the same way as they were protected while loaded on the truck. If unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to ensure that pipe is not dropped or damaged. Handling methods considered acceptable for warm weather and unacceptable during very cold weather to prevent impact damage.

9.4. STORAGE

The following procedures and practices are recommended to prevent to damage to the pipe during storage:

- Pipes should be carefully stored at site in unit packages (bundles) provided by the manufacturer. Avoid compression, deformation or damage to bell ends of the pipe.
- Store the pipe with supports that prevent the bells, spigots, couplings or any other joint surface from any contact. Use chocks (with or without fabric or rope tie downs) to prevent the pipe from rolling down due to high winds, sloping ground, wash outs, flash flooding or mischief-makers.
- When unit packages of the pipe are stacked, ensure that weight of upper units should not cause deformation to pipe in lower units.
- Support pipe units at 2.4 meter (8 ft.) intervals (1.2 meter (4 ft.) from each end) on wood blocking to prevent damage to the bottom surfaces during storage.
- When pipe/ fittings are being stored for a prolonged period (more than 2 years), the pipe units should be covered with a translucent cover, to protect against exposure to direct sunlight. Adequate air-circulation above and around the pipes should be provided to prevent



excessive heat accumulation.

- Do not store the pipe close to heat sources or hot objects, such as heaters, boilers, steam lines, or engine exhaust.
- When unit packages are stacked, ensure that the stack remains stable to avoid pipe damage or personal injury.
- Protect the interior and sealing surface of pipe & fittings from dirt and foreign material. Cover ends to ensure rodents & foreign materials do not enter the pipe.
- Store lubricant in tightly sealed containers under cover. Do not store pipes & fittings where gaskets may be exposed to UV radiations, or contamination (i.e. grease, oil, ozone etc.).

9.5. TRANSFERRING PIPE

When it's necessary to transfer pipe from one area to another, handle it carefully, observing the guide lines you followed to unload it. Do not slide or drop the pipe onto the truck as protrusions or other irregularities in the truck bed could damage it. Pipes, and fittings damaged during transportation, handling or storage or lowering shall be rejected and replaced at the Contractor's expense. Storage of uPVC pipes, fittings, rubber rings, jointing compound shall be under shade to prevent damage by sunlight and extreme heat.

10. INSTALLATION

10.1. ABOVE GROUND (UNBURIED)

Above ground pipe should be protected against ultraviolet degradation i.e. external painting etc. The manufacturer shall take prior approval of the Engineer before application of this ultraviolet protection system. Pipelines shall be erected true to the location, alignment and grade as shown on the drawings and/or as directed by the Engineer. All vertical pipelines shall be erected plumb and shall be parallel to wall and other pipelines. All horizontal pipelines shall be kept close to walls and shall be parallel to floor, ceiling or roof and other pipelines. If any deviation is required from the route and arrangement as shown on the drawings, the Contractor shall obtain approval from the Engineer before installation.

Solvent welded joints shall be made water tight with use of jointing compound. The jointing compound shall be spread liberally over the external surface of the spigot end and the internal surface of the socket end. Solution shall be applied axially on the surface. The sockets and spigots shall be joined as quickly as possible after application of jointing compound. The joints shall not be disturbed for at least 30 minutes and the pipeline shall not be subjected to testing at least for 24 hours tape Elastomeric joints shall be made with rubber ring. The ring shall be inserted in the groove of the socket end and then the spigot end shall be pushed into the socket end welding. Flanged joints shall be made water tight with gasket, nuts and bolts. Pipelines passing through wall, floor or roof shall be provided with black steel pipe sleeve. The annular space between the pipe sleeve and the outside diameter of the pipe shall not be less than 12mm. The space shall be filled with approved packing and sealant. Pipelines passing through water retaining structure shall be provided with black steel puddle (anchor) flange. The Contractor shall submit to the Engineer for approval of shop drawings showing the dimensions and thicknesses of the sleeves and puddle (anchor) flanges.



installation.

10.2. BELOW GROUND (BURIED)

10.2.1. Trenching

Trenches can be hazardous, so be sure to observe all safety regulations designed to protect workers and public. Pipe trenches shall be excavated up to required depth as indicated in the drawing. The excavated soil should be placed on one side of the trench leaving the other side clear for equipment and pipe handling. The bottom shall be carefully leveled. In-situ field density of trench bottom shall be determined. The bottom shall be compacted if insitu density is less than 60% of relative density as determined by ASTM D 2043. The test shall generally be carried out at spacing of 200 meters. If in some portion soft clayey material or loose material is encountered 300 mm of this material shall be replaced by specified bedding material in that reach. If excavation is carried below required depth, the excess excavated part shall be refilled with bedding material at no extra cost to the owner. (No bedding material shall be placed nor any permanent work commenced until the trench has been inspected by the Engineer and his permission to proceed to the work is given).

10.2.2. Flotation, Line & Grade

Where conditions are such that running or standing water occurs in the trench bottom, the water should be removed by pumps and other suitable means until the pipe has been installed and the backfill has been placed to a sufficient height to prevent pipe flotation.

If the standing water cannot be removed, hold the pipe at grade with a soil cover about twice the diameter of the pipe, to prevent floating the pipe. Try to schedule pipe installation as soon after excavating as possible. Undercut the trench bottom by machine and bring it to proper grade by using selected backfill of excavated material; be sure that the soil is free of large stones (larger than 1-1/2" [38 mm] in diameter), hard lumps, organic matter and debris and can be properly compacted by tamping. Selected backfill (not exceeding 3/4" [19 mm] in size to a depth of 4" to 6" [100 mm to 150 mm]) should be placed beneath the pipe to cushion it, but do not deposit such a thick or soft layer that pipe will settle and lose grade. Contour the bedding to allow for the projecting bells. The goal should be to provide firm, stable, uniform support for the pipe. If it sits on the rock, it is subject to breakage under the weight of backfill load, surface load or earth movements, so it will need to excavate deeper and fill with the approved material, compacted to at least 85% Proctor density.

10.2.3. Trench Bedding

Bedding material for pipe shall be of aggregate such as coarse sand, crushed stone or shale, free from large stones, rock, boulders, clay, cinder, ashes and rubbish etc. If heavy equipment is used to place bedding material into the trench, shape the material by hand afterwards to eliminate any pockets and above all, to ensure that the pipe is supported uniformly along its entire length. Concrete may be specified for use in specific spots for pipe support and anchorage.

10.2.4. Embedment Materials

There are a number of processed materials plus the soil types listed under USCS Soil Classification



System (FHA Bulletin No. 373 or ASTM D2487), which are grouped into five broad categories according to their suitability for this application.

10.2.5. Selection of Embedment Materials

Bedding material and its placement is of critical importance to installation and performance of both water and sewer pipes. It is essential that resident and imported materials are properly classified before use in bedding. Proper selection of bedding material is essential to PVC pipes' ability to support vertical loads and is frequently a special material with sizes not exceeding 19 mm (3/4"). Many jurisdictions have their own bedding specifications which call for special material to completely cover the pipe, care must be taken to clarify these requirements. Soil to be placed for bedding and used in pipe zone must maintain the specified soil density. If a coarse, granular Class I material is used for bedding the pipe, it should also be used for haunting to, at least, the spring line of the pipe. Otherwise, side support may be lost due to the migration of Class II, III or IV material into the bedding. When selecting embedment materials, make sure the native soil migration from the trench walls cannot occur. A well-graded compacted granular material will prevent this. In trenches subject to ground water inundation, the granular material should be compacted to a minimum of 85% Proctor density.

10.2.6. Preparation of Trench Bottom

- The trench bottom should be continuous, relatively smooth and free of rocks.
- The trench bottom should be constructed to provide a firm, stable and uniform support for the full length of the pipe.
- Bell holes should be provided at each joint to permit proper joint assembly and pipe support. Any part of the trench bottom excavated below grade should be backfilled to grade and should be compacted as required to provide firm pipe support.
- When an unstable sub-grade condition which will provide inadequate pipe support is encountered, additional trench depth should be excavated and refilled with a suitable foundation material as recommended by the project's Geotechnical Engineer. Large rock, boulders and large stones should be removed to provide 100 mm (4") of soil cushion on all sides of the pipe and accessories.

10.2.7. Inspection

Pipe and fittings shall be visually inspected for any evidence of damage, ovality or hair cracks. The turned ends of pipes and fittings shall be inspected for any local irregularities which could affect the water tightness of the joint. Damaged pipes and fittings shall be rejected and replaced at the Contractor's expense.

10.2.8. Laying of Pipe

Laying of pipe shall start at the lowest point in the area in which work is being done, pipe sections shall be laid with socket upstream. Each length of uPVC Pipe between manholes shall be in a straight line and to the true alignment, position, gradient, and the inverts as shown on the Drawings.



unless otherwise directed in writing and set out by the Engineer. The Contractor shall check and satisfy himself as to the correctness of the final gradient, position, and slope of the complete trenches before commencing the laying operation.

At all times when the work of laying the pipe is not in progress, all openings into the pipe and the ends of the pipe in trenches shall be kept tightly closed to prevent entrance of ground water, dirt, animals and foreign materials. The Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source, and shall assume full responsibility for any damage due to this cause and shall, at his own expense, restore and replace the pipe to its specified position and grade if it is displaced due to floating.

The Contractor shall maintain the inside of the pipe free from foreign materials and in a clean condition until the work is completed and approved by the Engineer. Pipe joints should be assembled with care.

Pipe and accessories shall be carefully lowered into the trench by means of derricks, ropes, belt slings, or other suitable methods. Under no circumstances shall any of the pipe and other materials be dropped or dumped into the trench. Care shall be taken to avoid abrasion of the pipe. The full length of each section of pipe shall rest solidly up on the prepared bed of trench. Pipes that have the alignment, grades or joints disturbed after laying, shall be removed and re-laid by the Contractor at his own cost. Pipe shall not be laid in water or when trench conditions are unsuitable for the work.

10.2.9. Assembly of Gasket Joints

- i. Except where otherwise detailed on the drawings, all pipes and joints shall be of flexible type. Joints shall be flexible UPVC machine made coupling type having two rubber rings gaskets.
- ii. All joints shall be capable of withstanding the various tests specified for the appropriate class of pipe. Joints shall withstand while maintaining the specified test pressure at a deflection of not less than the values specified in the relevant specification No.. BS 4346.
- iii. Rubber rings shall meet the requirements of the appropriate parts of BS 2494.
- iv. Clean the gasket, bell interior and spigot area with a dry, clean rag, brush or paper towel to ensure all debris is removed from bell and spigot ends of the pipe.
- v. Check the gasket position. Inspect the gasket, pipe spigot bevel and sealing surfaces for damage or deformation. Be sure that gasket is installed properly. Do not remove gasket as it is locked in during manufacturing.
- vi. Use only recommended lubricant with the pipe. Lubricant shall be applied axially on pipe joints. Longitudinal application of lubricants should be strictly prohibited. Liberally apply lubricant to the entire circumference of spigot, especially the beveled end. Do not lubricate the gasket or the gasket groove in the bell because the lubrication could cause gasket displacement. After the spigot end has been lubricated, it must be clean and free of dirt and sand.
- vii. Align the spigot and the bell and insert the spigot into the bell until it contacts the gasket uniformly. Do not suspend the pipe and “stab” it on to the bell.



- viii. The spigot end of pipe should be marked by the pipe manufacturer to indicate the proper depth of insertion. The insertion line should be exposed in front of the face of the bell. Do not over insert the joint.
- ix. If pipe is not supplied with a reference mark or if pipe has been cut, the reference mark can be reestablished by measuring the distance from the spigot end to the factory-installed insertion mark on another length of PVC Pressure Pipe of the same.
- x. In placing the pipe and making the joints care shall be taken to avoid disturbance of bedding underneath the pipe barrel. If the joints cannot be made manually, mechanical pulling devices will be needed.

NOTES:

- For small diameters, the assembly effort should be able to be delivered by hand using a block and bar. Never push directly against the pipe.
- Always keep a piece of wood between the face of the pipe bell and the bar used for pushing.
- For large diameters, mechanical assembly methods may be required such as jacks, pulleys and even the backhoe bucket. Of all the methods, backhoe bucket is the least preferred.
- A backhoe bucket cannot feel the resistance to the spigot entering the bell and therefore cannot tell if the joint is going together correctly.
- Over insertion by the backhoe will damage the fitting joint and may also damage other joints previously installed.

10.2.10. Solvent Cement Jointing Method

Handling of PVC Cement

Keep PVC cement containers covered while not in use. Prior to use an unopened can of cement, it is well to shake it vigorously to insure proper dispersion of the resin and solvents. The solvent contained in PVC cements are highly flammable and should not be used near an open flame. The area in which the cement is being used should be well ventilated and prolonged breathing of the fumes should be avoided.

Jointing of Pipes and Fittings

- Cut ends of the pipe square as possible provides the surface of the pipe with a maximum bonding area. If any indication of damage or cracking is evident, cut off at least 50 mm (2 inches) beyond any visible crack. Burrs and filings should be removed using a chamfering tool or file.
- A slight bevel shall be placed at the end of the pipe to ease entry of the pipe into the socket and minimized the chances of wiping solvent cement from the fitting. Place a 10° to 15° bevel approximately 1/16" to 3/32" in width on the end of the pipe.
- The pipe should enter the pipe/ fitting socket easily one-quarter to three-quarter of the



If the pipe bottoms in the fitting/ pipe with little interference, use extra solvent cement in making the joint.

- Measure the socket depth of the fitting and mark this distance on the pipe end. This reference mark can be used when joining to ensure the pipe is completely bottomed into the fitting during assembly.
- Position the pipe and fitting for alignment.
- Primer must be applied to both the pipes and fittings. Use a proper applicator- a natural bristle brush or roller (approximately 1/2 the size of the pipe diameter). A rag must not be used.
- Apply primer to the fitting socket, then to the outside of the pipe end, then a second coating to the fittings socket, re-dipping applicator as necessary to ensure entire surface is wet. Repeat applications may be necessary.
- The solvent cement shall be applied to the joining surfaces while primer is still tacky.
- Apply a heavy, even coat of cement to the outside pipe end to equal to the depth of the fitting socket. The amount should be more than sufficient to fill any gap.
- Apply a medium coat to the fitting socket. Avoid puddling. If there was little or no interference when the dry fit was checked, a second application of cement should be made to the pipe end.
- While the surfaces are still wet with solvent cement, immediately insert the pipe into the fitting/ pipe socket while rotating the pipe ¼ turn.
- Pipe must bottom completely to the fitting stop. Properly align the fitting for installation at this time.
- Hold the assembly for approximately 30 seconds to ensure initial bonding. Due to the taper on the interference fit, the pipe can backoff the fitting stop if steady pressure is not held on the joint during initial bonding.
- A bead of cement should be evident around the pipe and fitting junction. If this bead is not continuous around the socket shoulder, the joint must be cut out, discarded and begun again. Cement in excess of the bead can be wiped off with a rag.
- The assembly must be allowed to set, without any stress on the joint, for 1 to 5 minutes depending on the pipe size and temperature.

10.2.11. Haunching

Loose material should be placed in the trench alongside and in particular, under the haunches of the pipe, in layers not exceeding 100 mm (4"). This material should be well laid and consolidated between the pipe and trench wall. Proceed upwards in 100 mm (4") increments to the spring line of the pipe.



10.2.12. Initial Backfill

Follow pipe assembly with backfilling to protect the pipe from flooding, shifting or damage due to temperature extremes. Tamp the embedment materials using tamping bars under the haunches and around the pipe to the spring line of the pipe to provide effective support for the pipe. Consolidate the bedding by tamping layers around the pipe barrel to a height of 300 mm (12”) only above the crown of the pipe. After testing, cover the exposed joints in exactly the same way.

10.2.13. Final Backfill

Backfill materials free of rocks should be used to surround the pipe with 150 mm (6”) or 200 mm or (8”) of cover or as specified in the drawings. It should be placed in layers. Each soil layer should be sufficiently compacted to uniformly develop lateral passive soil forces during the backfill operation. Vibratory methods are preferred when compacting sand or gravels. Best results are obtained when the soils are in a nearly saturated condition. Where water flooding is used, the initial backfill should be sufficient to insure complete coverage of the pipe. The remainder of the backfill should be placed and spread in uniform layers in such a manner to fill the trench completely so that there will be no unfilled space under or about rocks or lumps of earth in the backfill.

After placement and compaction of pipe embedment materials, the balance of backfill material may be machined placed. The final backfill should contain no large stones or large rocks, frozen material or debris. Proper compaction procedures should be exercised to provide required soil densities. Rolling equipment or heavy tampers should only be used to consolidate the final backfill.

10.2.14. Supports for online Valves/ Appurtenance

The full weight of valves, hydrants and fittings should not be carried by the pipe. Valves, hydrants and fittings should be provided with individual support, such as treated timbers, crushed stone, concrete pads, or wellcompacted trench bottom. Valves should connect directly to PVC pipe using elastomeric gaskets supplied by the valve manufacturers.

11. INSPECTION AND TESTING

Before testing, the pipeline must be backfilled and braced sufficiently to prevent movement under pressure.

The following three points should be considered when testing:

- The pipe to be tested must be sufficiently backfilled to prevent movement while under test pressure.
- Thrust resistant at fittings should be permanent and constructed to withstand test Pressure. If concrete thrust blocks are used, sufficient time must be allowed before testing to permit the concrete to cure.
- Test ends should be capped and braced to withstand the thrusts that are developed under test pressure.



11.1. PRESSURE AND HYDROSTATIC TEST

A combined pressure and hydrostatic test is recommended. The test pressure should be specified in the drawings or be carried out as per manufacturer's recommendation. Tests are necessary to verify that the pipeline can withstand normal pressures, occasional excesses, functioning of automatic relief valves, slow closing, opening of valves, slow pump starting and other controls. It is recommended that large and/or complex systems be tested in segments as they are installed to permit evaluation and correction of improper installation techniques or other deficiencies as the project progresses. Hydrostatic testing is to be carried out at the direction of the Engineer. Before carrying out the tests, following checks have to be carried out:

- Check pressure ratings of all fittings.
- Never use air pressure.
- Backfilling should be enough (a minimum of one and one-half pipe diameters) to prevent pipe movement during the test (try using a plumb bob over the pipe to detect movement as the pressure builds).
- During testing of buried lines, fittings and joints should be left exposed for visual inspection for leakages.
- Minimum three days be allowed for concrete thrust blocks curing.
- Necessary precautions shall be carried out in the installation of pressure gauge. If it's too high in the line, it may give false low reading, as the actual pressure will be higher and it may accidentally subject too much pressure on line during testing.
- Pipe line should be filled at the preferred rate of 300 mm (1') per second (but not in excess of 600 mm [2'] per second), as an overly-aggressive filling rate could cause water hammer effects from any available low pressure source.
- Test pressure should be 150% of the maximum stated system design/ working pressure. The test pressure selected must not exceed the working pressure rating of the lowest pressure rated components in the system (i.e. threaded components, flanges, union, valves etc.).
- Air vent valves shall be installed at the high points in the pipe line. Necessary steps should be taken to ensure all entrapped air is released from the line while filling. Entrapped air can lead to very unsafe explosive failures. Entrapped air causes excessive surge pressures which results in failure of piping systems.
- The piping system shall be filled slowly with water by venting air from valves at higher elevations during the filling process. Whether a hydraulic hand pump or available water line pressure is used. Rapidly fluctuating gauge needle on a completely liquid filled system is a strong indication that entrapped air is present within the system. Should this occur, pressure should be immediately released and the line be re-bled. Failure to do so can lead to a catastrophic failure.
- The pipeline should be filled 24 hours before conducting the pressure tests.



- Appropriate pressure relief, air release and vacuum release valves should be installed prior to testing.
- Necessary shop drawings shall also be provided showing exact locations of air/ vacuum release valves.
- Provision for air escape from the upper part of the line be provided during water filling. Test cap be block or plug adequately.
- Duration of test pressures should be in accordance with the pipe standards or as specified by the Engineer.
- Leakages should be repaired prior to completing the backfilling.
- If a leakage is found, the pressure must be relieved. The failed section should be cut-out and replaced and be allowed to cure properly prior to recharging and retesting the system.

Table 11-1 summarizes allowable leakage for a range of test pressures and pipe diameters.

Normal Pipe Size inches.	Average Test Pressure in Line – P.S.I.				
	50	100	150	200	250
	Allowable Leakage Per 1,000 Ft. or 50 Joints				
4	★ 0.19 (0.72)	0.27 (1.02)	0.33 (1.25)	0.38 (1.44)	0.43 (1.63)
6	0.29 (1.10)	0.41 (1.55)	0.50 (1.89)	0.57 (2.16)	0.64 (2.42)
8	0.38 (1.44)	0.54 (2.04)	0.66 (2.50)	0.76 (2.88)	0.85 (3.22)
10	0.48 (1.82)	0.68 (2.57)	0.83 (3.14)	0.96 (3.63)	1.07 (4.05)
12	0.57 (2.16)	0.81 (3.07)	0.99 (3.75)	1.15 (4.35)	1.28 (4.84)
14	0.67 (2.54)	0.95 (3.60)	1.16 (4.39)	1.34 (5.07)	1.50 (5.68)
16	0.76 (2.88)	1.08 (4.09)	1.32 (5.00)	1.53 (5.79)	1.71 (6.47)
18	0.86 (3.26)	1.22 (4.62)	1.49 (5.64)	1.72 (6.51)	1.92 (7.27)
20	0.96 (3.63)	1.35 (5.11)	1.66 (6.28)	1.91 (7.23)	2.14 (8.10)
24	1.15 (4.35)	1.62 (6.13)	1.99 (7.53)	2.29 (8.67)	2.56 (9.69)
30	1.43 (5.41)	2.03 (7.62)	2.48 (9.39)	2.87 (10.86)	3.20 (12.11)
36	1.72 (6.51)	2.43 (9.20)	2.98 (11.28)	3.44 (13.02)	3.85 (14.57)

If the make-up water required for filling the line the second time is significantly less than required for the first filling, air is present in the line. If no significant difference is measured, a leak is probable.



11.2. ACCEPTANCE TESTING

If portions of the pipeline are tested as they are completed, and if the joints are to be exposed during testing, centre loading of pipe to resist movement of the pipe during testing is recommended. After testing, the pipe embedment requirements are to be followed in placing the initial backfill around the exposed joints prior to completing the final backfill.

11.3. CLEANING OF PIPELINE

- The pipe must be cleaned before disinfecting the water main. Mud, sand, dirty water, or a variety of debris left in the water main during construction will shield bacteria from contact with the chlorine solution resulting in incomplete disinfection and possibly delivery of contaminated water to consumers. Water mains may be successfully cleaned by flushing or swabbing.
- Water mains should be filled slowly with potable water at a rate that allows air to leave the line at the same rate as the water entering the line. All air should be vented from the pipe and fittings to prevent entrapment of air in the main.
- For flushing of the pipeline, it is suggested that sufficient flow in the system be created to cause the pipeline flow velocity to be equal to or greater than 0.91 m/sec (3.0 ft/sec). The duration of the initial flushing procedure should be continued until the discharge appears clean.

11.4. DISINFECTION OF PIPE LINES

- The pipeline shall be placed in service only after it has been cleaned and disinfected. Disinfection should comply with AWWA C651.
- Water from the existing system is allowed to flow into the section of water main to be disinfected at a controlled rate.
- All chlorinated water used for testing, flushing or disinfecting water mains should be disposed of safely. High chlorine residuals may cause significant negative health effects on wildlife and humans. Confirm acceptable levels of chlorine with local, state or federal authorities.
- If the chlorine residual in the water main under disinfection remains relatively high, then usually there are no impurities in the systems creating a chlorine demand. However, if the chlorine applied to the section is gone, it can be concluded there are impurities in the system.
- After the water main has been recharged after successful chlorination, samples should be taken for bacteriological test according to C651 24 hour after refilling.



12. MEASUREMENT AND PAYMENT

12.1. GENERAL

Except otherwise specified herein or elsewhere in the Contract Documents, no separate measurement and payment will be made for the under mentioned items of works and the cost thereof shall be deemed to have been included in the quoted unit rate of the respective items of the Bills of Quantities.

12.1.1 Fittings and specials

12.1.2 Cutting, jointing and laying including jointing materials such as rubber rings, nuts, bolts and gaskets and jointing compound etc.

12.1.3 Pipe work supports such as clamps, brackets, concrete supports and hangers etc.

12.1.4 Testing, cleaning, flushing, disinfection and commissioning

12.1.5 Ultraviolet protection for above ground uPVC pipes

12.1.6 Arranging water required for flushing, testing and disinfection including disposal of water after completion of works.

12.2. MEASUREMENT

Measurement of acceptably completed works of uPVC pressure pipes including fittings will be made on the basis of actual length in linear meter of pipes provided, installed in position, tested, flushed, disinfected and commissioned as specified herein, in bill of quantities, as shown on the drawings, and/or as directed by the Engineer.

12.3. PAYMENT

Payment will be made for the acceptable measured quantity of uPVC pressure pipes including fittings at the unit rate per linear feet quoted in the Bills of Quantities and shall constitute full compensation for all the works related to the item.



SECTION – 5

LAYING AND JOINTING OF PIPES, VALVES AND FITTINGS

1. SCOPE OF WORK

The work covered by this section of the specifications consists of providing Pipes and Specials including furnishing of all plants, equipments, appliances labour and materials in performing all operations in connection with construction of water works.

2. ALIGNMENT AND GRADE

The Contractor shall follow the alignment and grade as given in the drawings approved by the Engineer.

3. PIPE LAYING

3.1 All pipes shall be examined for defects before lowering in the trench. Defective or damaged pipes shall not be used. Pipes shall be handled carefully so as not to damage them in any way. Wide slings shall be used. The pipe shall be laid as per instruction of the manufacture and directions given below.

3.2 Each pipe immediately before being laid shall be carefully brushed out and tested for soundness. Each pipe shall be laid accurately to line and levels so that except where horizontal and vertical deflection is required as per drawings or directions of the Engineer, the finished pipeline shall be in a straight-line both in horizontal and vertical planes. Pipes shall be laid upon an even bed of well compacted bed of granular material as shown in the drawing and specified for the full length of each pipe, extending for the full width of the trench and with sufficient material at the sides to permit the pipes being marked on the bed and firmly supported to true line and level. Sufficient space should be left to enable the field joints, tested and inspected but the Contractor shall ensure that at least three quarters of the pipe length is fully supported. After the pipeline has been tested and approved by the Engineer or his representative, the space left out at the joints should be carefully filled with granular or concrete bedding. Each pipe shall be laid in such a manner as to prevent the in-grass of sand, mud or other deleterious materials. The open ends of pipes shall be suitably protected at the end of each day work or whenever a pipe end is left unattended, to prevent any foreign matter gaining access to the pipes.

4. GRANULAR BEDDING FOR PIPES

4.1 Where directed by the Engineer, the pipes shall be laid by the Contractor on granular bedding. This bedding material shall consist of broken stone or gravel mixed with coarse sand. The material shall be graded from 20mm to 5mm, all passing 20mm sieve and not more than 20% passing 5mm B.S. sieve. The thickness of the bedding material below the pipe shall be 150mm or as specified and directed by the Engineer. It shall be laid in full width of the trench in layers not exceeding 150mm



in thickness and shall be thoroughly compacted with an approved type of vibrating plate or light vibrating roller. After pipe laying and if directed by the Engineer, further granular bedding material shall be placed and compacted in a similar manner to fill the entire space between the pipe and the undisturbed sides of the trench up to specified depth.

- 4.2 If the granular bedding material is contaminated by water, sewage or collapse of the sides of the trench, it shall be removed and replaced with new material before the pipes are laid or re-laid.

5. CONCRETE SURROUND AND BEDDING FOR PIPES

- 5.1 The pipes shall be encased in reinforced cement concrete of nominal mix 1:2:4 at Nullah or road crossings as per directions of the Engineer. The minimum thickness for the concrete surround shall be as shown in the drawings.

- 5.2 The pipes shall be laid on a reinforced cement concrete bed of nominal mix 1:2:4 at locations where directed by the Engineer. The concrete shall be laid on well-compacted and leveled bed. The reinforcement steel shall consists of 10 bars of 12mm diameter as shown in drawing to the entire length of pipe to be encased and cross stirrups of 10 mm at 1000 mm centre to centre.

The material used in the concrete, method used in mixing, laying and curing etc. of the concrete shall be as described under the section 5 “Concrete”. The reinforcement steel has confirmed to the requirements given to Section 6 of reinforcement steel.

6. VALVES

All valves shall be laid and jointed as shown on the drawings or as per manufacturer’s specifications.

7. VALVE CHAMBERS

Valves shall be housed in R.C.C. chambers to be constructed by the Contractor. These valve chambers and method of assembly shall be as shown in the drawings or as directed and approved by the Engineer. All manhole covers and frames in the slab of chambers of appropriate sizes (As per drawing) shall be of cast iron of robust construction and suitable for heavy duties and provided with locking arrangements.

8. CONCRETE THRUST BLOCKS / ANCHORAGES

Concrete thrust blocks and cradles shall be constructed of 1:2:4 cement concrete with strength of 3000 psi or as directed by the Engineer. Concrete thrust blocks of adequate sizes shown in drawing or directed by the Engineer shall be provided at all tees and bends. Thrust blocks shall be poured against proper formwork or against undisturbed earth where possible and approved by the Engineer. The concrete shall be cured for minimum 7 days by keeping the surface wet. All forms shall be removed prior to backfilling.

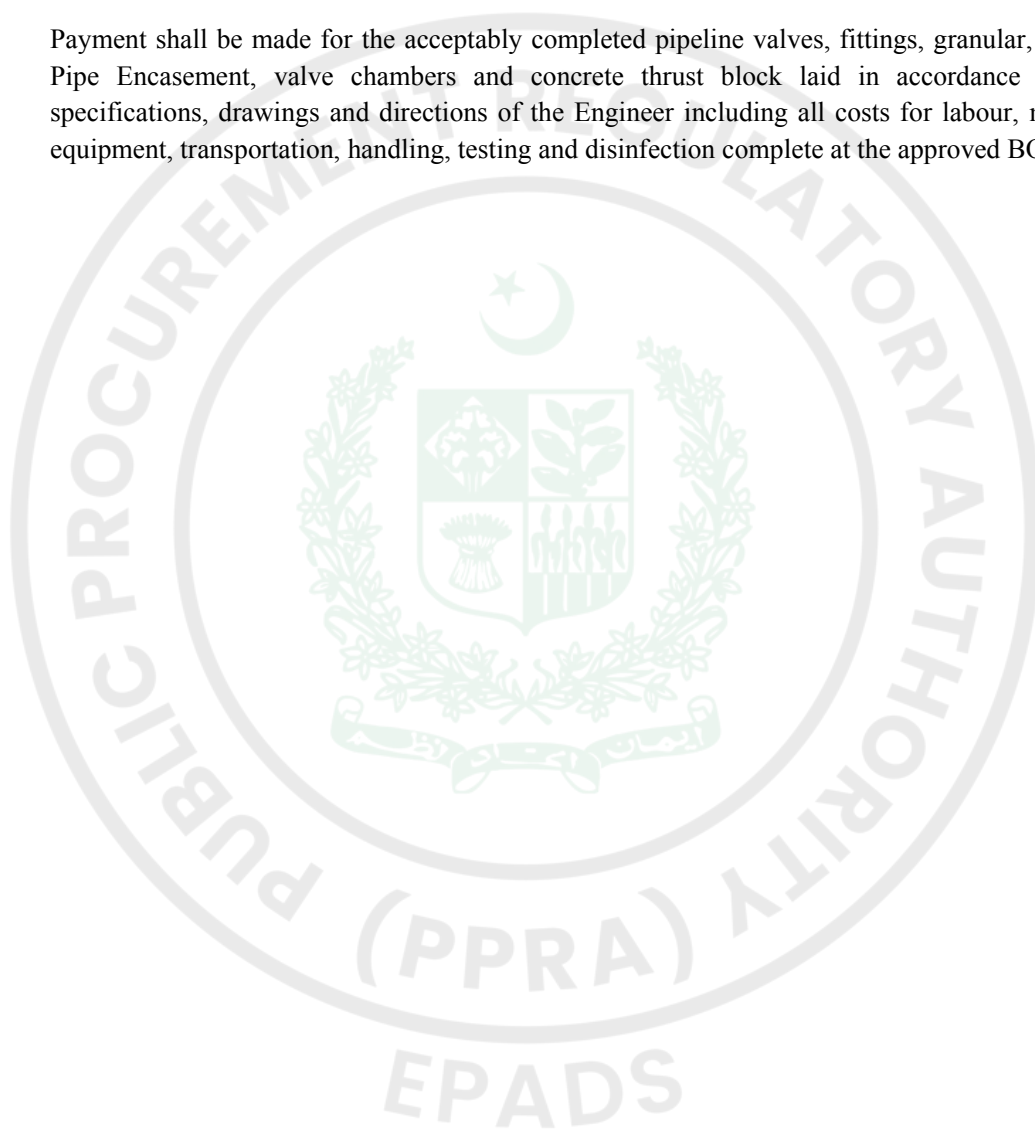


9. MEASUREMENT

Pipes shall be measured in linear feet, their lengths the net length of the pipe as laid, after deduction of the length of overlap at any joint to be made with the pipe. Plain ended pipe shall be measured and paid by effective length as laid.

10. PAYMENT

Payment shall be made for the acceptably completed pipeline valves, fittings, granular, bedding, Pipe Encasement, valve chambers and concrete thrust block laid in accordance with the specifications, drawings and directions of the Engineer including all costs for labour, materials, equipment, transportation, handling, testing and disinfection complete at the approved BOQ rates.



SECTION – 6

BITUMEN COATING

1. SCOPE

The work under this section of the Specifications consists of furnishing all plant, labour, equipment, appliances and materials and in performing all operations for bitumen coating treatment to foundations, complete in strict accordance with this section of the specifications and the applicable drawings and subject to the terms and conditions of the Contract.

2. SUBMITTAL

Samples of all materials proposed for use under this section, shall be submitted to the Engineer for approval.

3. MATERIALS

Bitumen 10/20 and 80/100 grade.

4. DELIVERY STORAGE AND HANDLING

Materials shall be protected from damage during loading shipment delivery and storage Non-staining materials shall be used for blocking and packing.

5. PREPARATORY WORK

All surfaces, to be treated shall be dust free and dry. Application shall not start unless the preparatory work has been inspected and approved by the Engineer.

6. WATER PROOFING TREATMENT IN FOUNDATION / SUB-STRUCTURES

All surfaces to be bitumen painted shall be thoroughly cleaned of any accretion, dust, dirt etc. by scraping, wire brushing or as directed by the Engineer. The surface shall be primed with a coat of asphalt oil used at the rate of not less than 1 gallon /100 square feet. Two coats of hot bitumen paint shall be applied at the rate of 40 lbs/100 sft. each coat. The first coat shall be allowed to dry for about 6 hours before applying the second coat. During operation of painting great care shall be taken to avoid air bubbles. The manufacturer's advice/ recommendations shall be taken to avoid air bubbles. The manufacturer's instructions and Engineer's directions shall be followed.

7. MEASUREMENT AND PAYMENT

7.1 GENERAL

Except otherwise specified herein or elsewhere in the Contract Documents, no measurement and payment will be made for the under mentioned specified works related to the relevant items of the Bills of Quantities. The cost thereof shall be deemed to have been included in the quoted unit rate

of the respective items of the BOQ.

The rates quoted by the Contractor in the Bill of Quantities shall include work to be executed under these specification in any floor and at any height except where otherwise specifically stated in the relevant item of Bill of Quantities and the Contractor shall not be entitled to any claim or claim any compensation on this account.

7.1.1 All preparatory work, scrapping, scratching and cleaning.

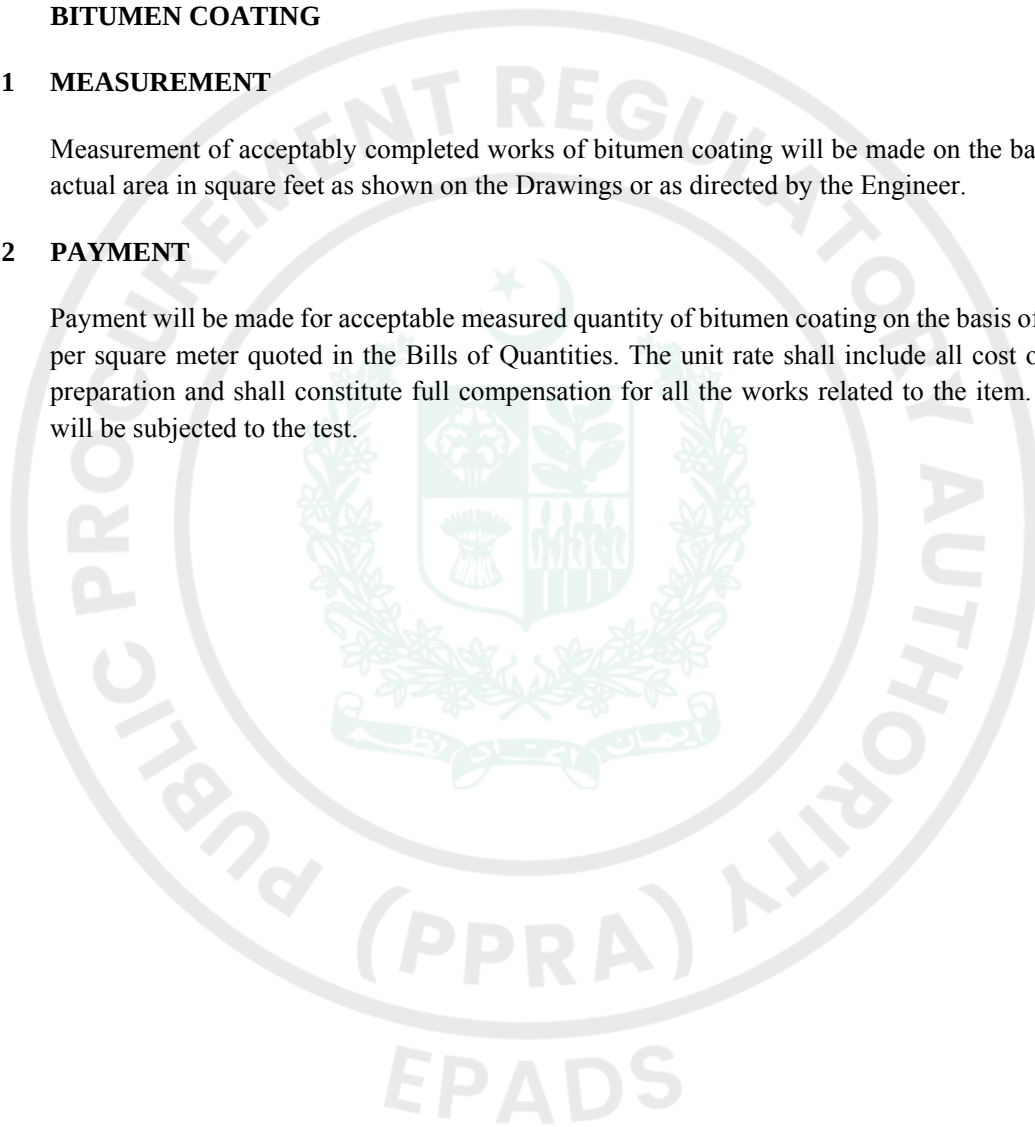
7.2 BITUMEN COATING

7.2.1 MEASUREMENT

Measurement of acceptably completed works of bitumen coating will be made on the basis of net actual area in square feet as shown on the Drawings or as directed by the Engineer.

7.2.2 PAYMENT

Payment will be made for acceptable measured quantity of bitumen coating on the basis of unit rate per square meter quoted in the Bills of Quantities. The unit rate shall include all cost of surface preparation and shall constitute full compensation for all the works related to the item. Payment will be subjected to the test.



SECTION – 7**VALVES****1. DESCRIPTION**

Supplying, installing, jointing and fixing Valve as mentioned in BOQ, complete arrangement with flanges, gaskets, nuts & bolts pipes etc required for draining out the lines including pipe, fittings (test pressure 21.0 Kg/sq cm or 300 PSI) as per standard etc. complete in all respect, as per specifications & relevant drawings and all works to the entire satisfaction of the Engineer.

2. GENERAL

All valves shall be made of Cast iron obtained from approved manufacturer. The metal of casting shall be strong tough, even grains, smooth surfaced and free from all defects without plugging or filling. All valves shall be flanged conforming to the flange dimensions of specials, fittings and pipes to be supplied and installed by the same contractor. All valves shall be designed for a working pressure of not less than 10.55 Kg/Sq.cm (150 PSI) and tested Hydro statistically to a pressure of 21.10 Kg/Sq.cm (300 PSI). The markings cast on the body of the valve shall indicate manufacturer's name, size of valve and designated working water pressure. Asphalt or/and varnish as directed by the Engineer shall be applied to the ferrous parts of the valve except bearing surfaces. Jointing material including nuts, bolts, washers and rubber packing shall be supplied in quantities of approved quality required plus 10 packing extra. The material of all type of valves & penstocks including appurtenances such as nuts bolt and flanges e.t.c. shall be resistant to saline water up to the design life. The Contractor shall submit along with his tender a statement showing the name of manufacturer or alternate manufacturers along with cost details, type, pressure rating and weights of each type a valve and pipes if required so in the form as approved by the Engineer.

3. VALVE IDENTIFICATION

All valves shall be identified by permanently fixed trifoliate labels/brass plates which shall identify the valve number and function, and be attached by stainless steel cable ties to an integral part of the valve - not the hand wheel or lever. Information on the tags shall be:

NO - Normally Opened

NC - Normally Closed

NT - Normally Throttled

NA - Normally Automatic

SOC - Set On Commissioning

4. REPLACEMENT

Where replacement of existing valves with new or alternative valves is specified in the Contract then the Contractor shall be responsible for the provision of double-flanged spool-pieces, as required, and their protective finish. Restoration of any finish damaged in the removal of the old



valves and the supply of gaskets, nuts, bolts and washers shall be included.

5. WASHOUT VALVE

The washout valves shall be in general conforming to the requirements of BS 5163. The Washout valve shall provide an unobstructed waterway of the same nominal diameter as of connecting pipe. The spindle shall be non-rising and shall be of solid forged bronze with a tensile strength of 4.34 to 4.65 Tons per Sq. Cm. shaped properly and machined all over with strong square threads suit valve nut. The stuffing box shall be deep large and liberal and capable of packing under pressure. The stuffing box shall be properly packed and ready for service when delivered. The stuffing box packing shall be made of Asbestos Hemp or jute packing shall not be used. The valve shall be provided with cast iron wheel for manual operation of the valve. The valve shall open anticlockwise and close in clockwise direction. Washout valve shall be imported confirming to the standards described herein.

6. DOUBLE ACTING AIR VALVES

Air valves shall be of float type having cast iron body and bolted cover, bottom inlet, a ball float and valve operating mechanism. The air valve float chamber and float chamber cover shall be of cast iron with all other parts of non-corrodible materials. All orifices shall be located well clear of the liquid level in the float chambers, and designed to prevent sedimentation of floating solids. Valve bases shall be as specified. Air valves shall be provided with separate isolating valves and drain plugs. Air valves with 'built in' isolation facility are not permitted. The installation of air valves utilizing solid cylindrical control floats is acceptable. Air valves shall be imported, procured from manufacturer of international repute and as approved by the Engineer.

7. GATE VALVES

Gate valves shall generally comply with BS 5163. Valves shall be of the non-rising stem type with flanged ends to BS 4504 PN 16. The body, wedge, bonnet, stuffing box, gland and thrust bridge shall be of best quality cast iron to BS 1452 Grade 14, the seats, nut, faces and guides of gunmetal to BS 1400 Grade LG2-C and the stem of forged bronze to BS 2872 Grade CZ114. Each valve shall have a drain plug fitted at the bottom of its seating along with proper arrangement of disposal of drain water. Stuffing boxes shall be designed to have soft packing fitted. Valves shall be rated for 150 PSI maximum working pressure with the bodies capable or withstanding a test pressure of 300 PSI without leakage.

8. NON-RETURN VALVE

Non-return valves shall be of the free-acting type capable of withstanding and reducing shock following rapid flow reversal in a pipeline. They shall be suitable for pumps and delivery system provided. Valve bodies shall be of two part construction in best quality cast iron with detachable cover plates to facilitate inspection of the bearing and door. Doors shall be of best quality cast iron with renewable seats of gunmetal to BS 1400. Hinges pins shall be of stainless steel totally enclosed within the valve body. The doors shall be arranged such that they do not swing through an angle of more than 45 degree. Valves shall be rated for 150 PSI maximum working pressure with the bodies capable or withstanding a test pressure of 300 PSI without leakage. The maximum velocity through any check valve shall not exceed 3.5m / sec. without the written approval of the Engineer.



9. MEASUREMENT AND PAYMENT

9.1 MEASUREMENT

The quality of each valve shall be measured in numbers as approved by the Engineer or as designated in the BOQ.

9.2 PAYMENT

Each quantity payable according to the BOQ.



SECTION – 8

SUPPLY & INSTALLATION OF PUMPING MACHINERY & EQUIPMENT

1. DESCRIPTION

The work covered by these specifications consists of furnishing all plants, labor, equipments, appliances and material and performing all operations in connection with supplying, installation, testing and commissioning of pumps and motors with all accessories of electrical system & valves and pipe work inside the pump house including jointing material for pipes, fittings and valves in strict accordance with the specifications and terms and Conditions of the Contract.

2. GENERAL

The pumps shall be either KSB or approved equivalent equipment. All components and accessories of pumps shall be the product of reputed manufacturer engaged in the manufacture of such pumps and equipments for the last ten years, and the materials supplied shall be the standard product of the manufacturer. The catalogues and other details of the pumps including characteristics curves of the pumps offered shall be supplied with the offer. The contractor shall get the details of pumps and equipment approved by the Engineer before placing order for the pumping machinery and equipment.

3. DESIGN

The material, design, fabrication and assembly of equipment shall be in strict accordance with "American Water Works Association Standard E 101 61" American Standard or equivalent and the requirements given in these specifications and specific requirements of HESCO for electrical equipment and installation.

4. PUMP AND MOTOR

The pump shall consist of submersible pump and motor of the specified capacity and head and shall be integral sealed but with strainer.

The pump material shall be as under:

Inlet body	:	Grey cast iron/steel
Intermediate body:		Grey cast iron Discharge bearing
Body / bowl	:	Grey cast iron
Impeller	:	Tin bronze (radial type)
Bearing:		Tin bronze
Pumps lift	:	Gr. Steel
Fastness	:	SS (A2)



5. PUMP ACCESSORIES

Pumps shall be provided inclusive of the following accessories:

- i. Pressure gauge, pressure switches, flow switches etc.
- ii. Strainer on pump suction pipe.
- iii. Reducer/enlarger is necessary if the pump discharge size is different from discharge piping.

6. MOTOR PROTECTION

Motors of 3kw or less power shall be started direct on line. Larger motors shall be started by star-delta starter.

Motor shall be protected against under voltage over voltage, overload, over- heating and phase failure.

Motor shall be rated for normal operation against a voltage fluctuation of + 10% and frequency fluctuation of + 2Hz.

7. CONTROL

7.1. POTABLE WATER PUMP AND MOTOR

For potable water pumps, two pumps shall be duty and one shall be standby. Duty shall however change between the pumps on each start/stop cycle of the pump.

Operation of potable water pumps shall be controlled by water level switches in the water

8. SUBMERSIBLE PUMP & MOTOR (TUBE WELL)

Operation of tube well pumps shall be manual.

8.1. PRESSURE GAUGE

Pressure gauge shall be of copper alloy, bourdon tube type with 100mm diameter dial face. The dial shall be englaved in black on white background from zero to 16 bars or 1.5 times the working pressure whichever is larger. Gauge shall be installed to socket welded to the pipeline with an isolating plug/ball valve. If the pipeline installation is such that the above requirement cannot be met pressure gauge of remote reading type shall be installed.

8.2. BRASS STRAINER

Brass strainers shall be of bucket type with flanged end. They shall be installed at the end of pump suction pipe. The wall thickness of the strainer shall not be less 1/8 inch. The diameter of the holes or the width of the slots shall not be greater than ¼ inch. The open area of the strainer shall not be less than 1.5 times the cross-sectional area of the suction pipe on which it is installed.



8.3. PRESSURE SWITCH

Pressure switch shall be electric actuating device, which will close/open the circuit at preset lower/higher pressures. The device shall be housed in die cast aluminium casing with enamel finish. The switch shall be adjustable. The pressure switch shall be rated for a working pressure of 16 Bar. The switch shall be wired to control panel.

8.4. WATER LEVEL INDICATOR

The water level indicator for high and low water level cut off shall operate on 230 Volt AC, 50 Hz and supplied complete with float, float chains, counter- weights, chain clamps, steel mounting brackets, chain guide roller and any other equipment and material necessary for installation and satisfactory operation.

The level indicator shall have at least 5 switch-contacts or as required for sensing the required water levels within the specified range. The level indicator shall be suitable to match with the specific gravity of the fluid in which it is intended to be installed. All operational, constructional and installation details shall be furnished by Contractor for approval.

The bidder may quote for non-mechanical type of water level indicator to give equivalent performance. Technical literature and data of the indicator to be furnished along with the bid documents.

9. QUALITY CONTROL TESTS

The manufacturer shall perform all the quality control tests during manufacturing and all test results shall be submitted in triplicate, along with characteristics curves of the pumps offered to the Engineer before procurement of pump sets.

10. DEVIATION FROM SPECIFICATIONS

Water pumps differing in minor respects from that specified may be proposed, provided such differences are clearly stated in the proposal.

11. GUARANTEE

Equipment furnished under this section shall be guaranteed for a period of one year from date of acceptance thereof against defective materials, design, and workmanship. Upon receipt of notice from the Engineer in Charge of failure of any part of the guaranteed equipment during the guarantee period, new replacement part or parts shall be furnished, installed and commissioned promptly by the Contractor and no additional cost shall be payable to Contractor.

12. MAINTENANCE MANUAL

The Contractor shall furnish 3 copies of the illustrated maintenance and installation manual for all electrical and mechanical equipment. The Contractor shall furnish complete priced list of spare parts required for the operation of electrical and mechanical equipment for a period of two years.



13. PACKING

The Contractor shall ensure proper packing of the components of pump assembly for safe shipment.

14. INSTALLATION OF SUBMERSIBLE PUMP

The pumps shall be carefully installed as per drawings and manufacturer's instructions. These pumps shall be mounted on separate concrete foundation to be built by the contractor with foundation bolts grouted at appropriate positions. Separate suction pipes shall be provided for each pump with combined delivery pipe work with all valves and fittings as per drawings and instructions of the engineer.

15. INSTALLATION OF MOTOR CONTROLS & WIRING

- a. The installation of the motor controls including voltmeter, ampere meter, indication lights for phases and other electrical equipment, and materials shall conform to the applicable requirements of local electricity authority. The Contractor shall submit the required documents including required test certificates considered necessary before power connection to the pumping station. The motor controls and other electrical equipment and materials shall be installed at appropriate location subject to the approval of Engineer.
- b. All wiring between the motor, motor controls and other electrical equipment shall be of adequate size for the requirements and of adequate insulation and shall run in P.V.C. conduits. Conduit sizes shall be adequate for the size and number of conductors for each circuit. The conduit pipe shall run exposed and supported at suitable intervals.

The ends of conduits shall be protected as required to prevent the entrance of concrete, sand or other foreign material during installation and afterwards. All conduits shall be installed with proper fittings and supports and all bends shall be gradual and smooth to permit pulling of conductors without damage. The radii of all conduit bends shall be not less than that of standard or long radii bends for the applicable size, shall be free from kinks, indentation, or flattened surfaces. Bushing, chase nipples or approved connectors shall be installed on the ends of the conduit at boxes and cabinets to protect conductors from abrasion.

16. OPERATION AND ACCEPTANCE TESTS

The operation and acceptance tests shall include a Physical inspection of the completed machinery installation, testing of the insulation resistance of the electrical wiring, resistance measurement of the grounding system and an operating test of the pump, (riots) and motor controls, as a complete installation.

The insulation resistance test of the electrical wiring and resistance measurement test of the grounding system shall be carried out as per requirements of electrical department.

Upon completion of the electrical insulation resistance tests and grounding system test, the Contractor shall conduct an operating test of complete installation to (demonstrate that the equipment function properly. The test shall consist of operating the equipment as a unit continuously for a period of seven days for each pumping unit. During this period the Contractor



shall provide full operating staff, lubricants and other materials. If there is any indication during this period of defective materials or workmanship, the Contractor shall make any or all necessary replacements or repairs, following which the acceptance test shall be re-run. The Contractor shall furnish all pipes fittings and gauges, equipment and accessories all of which shall be subject to the approval of the Engineer. The Contractor shall give the Engineer 24 hours' notice before conducting the test, and the Engineer or his Representative will be present during all tests. The Contractor shall take draw down and discharge measurements, power input readings, and other pertinent data on forms furnished by the Contractor and approved by the Engineer. The originals of all such forms shall be delivered to the Engineer.

17. MAINTENANCE PERIOD

The contractor shall be responsible for operation and maintenance of pumping machinery and equipment for a period of 3 months. The Engineer shall arrange all operating staff, power, lubricants and other requirements. The contractor shall depute his full time supervisor for operation timings during this period. During this period the contractor at his own cost shall replace all defective parts and components. The Contractor shall be responsible for a further period of maintenance. This maintenance period shall be counted from the date of issue of certificate of commissioning by the Engineer or date of last replacement of spare of component part of equipment or date of taking over the pumping station from the Contractor.

18. MEASUREMENTS AND PAYMENT

No separate payment shall be made for supply of pumping machinery and equipment. The work shall be measured and paid on the basis of approved tendered rate in the Contract. The rate shall be inclusive of all plant, tools, equipments labour and all components, for installation testing, commissioning and satisfactory performance after commissioning and during the maintenance period and including all overheads and profits.



SECTION – 9

BEDDING FOR PIPELINES

1. DESCRIPTION

This work shall consist of furnishing and placing all types of bedding, of specified materials, under and around pipes, in water, wastewater and rainwater pipelines, in accordance with these specifications and to the lines, grades and cross-sections shown on the Drawings and/or as directed by the Engineer.

2. MATERIALS REQUIREMENTS

2.1. MATERIALS FOR BEDDING SHALL BE FROM AN APPROVED SOURCE.

The materials, for bedding, shall be free from clay, salt, alkali, organic matter, shale, loam, soft flaky particles and other deleterious substances.

It shall be stacked at the place designated by the Engineer and kept free from the admixture of deleterious materials.

2.2. CONSTRUCTION REQUIREMENTS

The material for bedding shall be placed to the specified thickness and shape and compacted by rammers of approved weight.

3. MEASUREMENT & PAYMENT

3.1. MEASUREMENT:

Except where otherwise specified in the Bill of Quantities, measurement of bedding, for pipelines, will be made in the specified units of volume, of these materials, of specified quality, acceptably placed, on the basis of the dimensions, for the neat finish lines, in accordance with the Drawings or directions of the Engineer.

3.2. PAYMENT:

Payment for various types of bedding, for pipelines, of specified materials and quality, will be made for their respective quantities, measured in accordance with Article 4, at the unit rates, tendered in the priced Bill of Quantities.

Rate: The unit rates tendered, for various types of bedding, for pipelines, shall be deemed to be inclusive of, but not limited to the following:

- a. Providing all materials
- b. All sorts of transportation involved in the process



- c. All sorts of wastages
- d. All operations including stacking, cleaning, laying and compacting of bedding materials; and maintenance, protection and repairs, of the work
- e. Carrying out all sampling and testing
- f. All other operations, procedures and requirements necessary to complete the work in accordance with these specifications.



LIST OF APPROVED MANUFACTURER

*** All Equipment shall be procured from Principal Authorized agents / distributors / resellers.**

The Bidder shall fill name of only one manufacturer for each equipment / material on which the tender is based. He shall be bound to supply the equipment from the same manufacturer. In case, the Bidder gives names of more than one manufacturer against any equipment, the Engineer / Owner can ask the Bidder supply the equipment from any one of them.

At the evaluation stage if it is noted that any material offered by the bidder does not meet the specification requirements, the Engineer / Owner reserves the right to ask the bidder to replace his choice of equipment supplier meeting the required quality and specification requirement.

During the execution stage if the material from any supplier is found defective / substandard the Engineer / Owner reserves the right to ask the successful bidder to replace his choice of manufacturer / supplier for that particular equipment.

Any change in manufacturer / supplier shall only be entertained if there is sufficient reason that adhering to the original choice of manufacturer / supplier shall be detrimental to either the project quality or project timeline. Proper approval shall have to be sought for change in the choiced manufacturer / supplier at least 1 month before the equipment is to be procured.

Samples of all equipments shall have to be got approved prior to their procurement. Any deviation from the BOQ / Specification shall be listed in a separate sheet to be labeled as Annexure-1 containing the details of the deviation including the deviating BOQ item number.

S.No.	Item	Manufacturer	
	PUBLIC HEALTH WORKS		
1	HDPE PIPES & FITTINGS	i	DADEX
		ii	Alpha Pipe
		iii	International Industries Limited (I.I.L)
		iv	Hitech Industries
2	VALVES/ FLOAT VALVE/ STRAINERS & FITTINGS	i	SCON
		ii	KITZ
		iii	Rehman Engineering
3	MANHOLE COVERS/ GRATINGS	i	ALPINE (ATIF GLOBAL) Ltd.
		ii	SANDAN ENGG. Ltd. (TEEPU)
		iii	M/s JAWS Ltd
4	PUMPING MACHINERY	i	KSB
		ii	Grundfos
		iii	Wilo
		iv	Xylem
5	uPVC PPIES & FITTINGS	i	DADEX
		ii	Plasco
		iii	Alpha Pipe
		iv	Pak Arab
6	MS PIPES & FITTINGS	i	INTERNATIONAL INDUSTRIES LIMITED (I.I.L)
		ii	HITECH INDUSTRIES
		iii	JAMAL PIPE
7	FLOW METERS	i	SIEMENS
		ii	AQUALINE
		iii	THERMAX
		iv	Alia



**FEDERAL GOVERNMENT EMPLOYEES HOUSING
AUTHORITY, ISLAMABAD**

**WATER CONNECTION WORKS OF SECTOR 4C,
18C, 19C, 24B & 25BAT KDA SCHEME-33,
GULZAR-E-HIJRI, KARACHI**



PRICED BID

**BIDDING DOCUMENTS
VOLUME –IV**

OCTOBER, 2025



EA Consulting Pvt Ltd

(Formerly Engineering Associates)

Engineering, Architecture & Project Management

**Head Office: AL-9, 15th Lane, Khayaban-e-Hilal,
Phase VII, D.H.A., Karachi-75500.,**

Tel: UAN: 111-111-584, Fax: (021) 3584-1825

Letter of Price Bid

Name of Contract: “Water Connection Works of sectors 4-C, 18-C, 19-C, 24-B & 25-B AT KDA Scheme-33, Gulzar-e-Hijri, Karachi.

To: **Project Director**
Federal Government Employees Housing Authority,
2nd Floor Working Women’s Hostel, Opposite Garden Police
Headquarter Aga Khan III Road, Karachi

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (IB)9;
- (b) The total price of our Bid, excluding any discounts offered in item (c) below is:
Rs.....
- (c) The discounts offered and the methodology for their application are:
Rs.....
- (d) Our Bid shall be valid for a period of 120 days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (e) If our Bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;
- (f) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed and we do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other bidder for the Works.
- (g) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (h) We agree to permit Employer or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors. This permission is extended for verification of any information provided in our Technical Bid which comprises all documents enclosed herewith in accordance with IB.11.1 of the BiddingData.
- (i) If awarded the contract, the person named below shall act as Contractor’s Representative.

Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date

Address.....



BILL OF QUANTITIES
(to be signed by the bidder)

PREAMBLE

1. **FOR BOTH SCHEDULED & NON-SCHEDULED ITEMS, THE BIDDER SHALL QUOTE PERCENTAGE ABOVE OR BELOW ON THE AMOUNT PUT TO BID AND GIVEN IN THE SUMMERY OF COST ESTIMATES.**
2. The Estimate / BOQ shall be read in conjunction with the Conditions of Contract, Specifications and Drawings.
3. The Quantities given in the Bill of Quantities are estimated and provisional quantities and are given to provide a common basis for bidding. The basis for payment will be the actual quantities of work executed and measured by the Contractor and verified by the Engineer and valued at the rates and prices entered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix as per Contract.
4. The rates and prices quoted in the BOQ, except insofar as it is otherwise provided under the Contract, include all costs of Contractor's plant, labour, supervision, materials, execution, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract. Furthermore all duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to deadline for submission of Bid, shall be included in the rates and prices, and the total Bid Price submitted by the Bidder.
5. The whole cost of complying with the provisions of the Contract is included in the rates and prices given in the Priced BOQ. Where no items are provided, the cost is deemed to be distributed among the rates and prices for the other related items of the Works.
6. For civil and plumbing items; in case of any discrepancy in description or unit of any scheduled item provided in the BOQ with the description or unit of any scheduled item provided in Pak. PWD Schedule of Rates 2022, the description and unit of item as provided in Pak. PWD Schedule of Rates 2022 shall prevail.
7. For Water Connection items; in case of any discrepancy in description or unit of any scheduled item provided in the BOQ with the description or unit of any scheduled item provided in Pak. PWD Schedule of Rates 2022 the description and unit of item as provided in Pak. PWD Schedule of Rates 2022 shall prevail.
8. General directions and description of work and materials are not necessarily repeated nor summarized in the Priced BOQ. References to the relevant sections of the Bidding Documents shall be made.
9. The items mentioned in the BOQ consist of furnishing all plant, labor, equipment, machinery, appliances, materials, fittings, fixtures, fabrication, erection and installation required for completing the items/works. The work shall be done in accordance with the Drawings, Technical Specifications, BOQ and directions of the Engineer complete in all respect.
10. Pak. PWD Specifications and the Technical Specifications enclosed in Volume-II (Technical Provisions) of Bidding/Contract Documents shall be applicable for schedule Items and the non-schedule items, respectively. "Ref Spec. No. indicates the specification section number which as a whole or part (for which the Engineer shall be the sole judge) of these specifications are to be followed during execution of the item of work in accordance with the applicable drawings.



11. Complete description of items of works in the BOQ, general directions, conditions and limitations of works, location and place of works, applicable methods, means to be adopted, type and quality of materials, use of tools, plant, and machinery are not necessarily mentioned in the BOQ. These shall be referred to in accordance with the Drawings and Technical Specifications.
12. The bidder may ensure himself of the correctness of quantities and application of the individual items of works as per the Drawings, Technical Specifications and Contract Documents.
13. Notwithstanding provision of Clause 51 of the General Conditions of Contract Part-I, no claim for extra payment will be admissible on account of anticipated profit or variation in overheads expenditure for the works not actually performed nor will any adjustment in the unit rate set forth in the Estimate be made because of any increase or decrease in the quantities indicated therein.
14. The following abbreviations for the Units have been used in the estimate:

Unit	Abbreviations
Running feet	Rft.
Square feet	Sft.
Cubic feet	Cft.
Kilogram	Kg.
Per Number	Each, Number, No.
Lump Sum Job	Job, Lot

Authorized Signature and official Seal: _____

Name: _____

Date: _____



Water Connection Works of sectors 4-C, 18-C, 19-C, 24-B & 25-B AT KDA

Scheme-33, Gulzar-e-Hijri, Karachi.

BILL OF QUANTITIES

TABLE OF CONTENTS

Sr. No	BILL NO.	BILL DESCRIPTION
1.	Bill No. 1	Water Connection Works

Water Connection Works of sectors 4-C, 18-C, 19-C, 24-B & 25-B AT KDA
Scheme-33, Gulzar-e-Hijri, Karachi.
SUMMARY OF ESTIMATES

A: SCHEDULE ITEMS

Sr. No	DESCRIPTION	UNIT	AMOUNT
1. Water Connection Works			
	a. Sector 4 C	Rs.	446,750
	b. Sector 18 C	Rs.	446,750
	c. Sector 19 C	Rs.	446,750
	d. Sector 24B & 25B	Rs.	1,054,589
	Sub-total	Rs.	2,394,839
	Premium(percentage) above or below	%	
	Amount of Premium	Rs.	
	Total (1)	Rs.	



B: NON-SCHEDULE ITEMS**BD-5**
Appendix-D to Bid

Sr. No	DESCRIPTION	UNIT	AMOUNT
1. Water Connection Works			
	a. Sector 4 C	Rs.	2,125,563
	b. Sector 18 C	Rs.	4,662,671
	c. Sector 19 C	Rs.	4,965,624
	d. Sector 24B & 25B	Rs.	31,709,227
	Sub-total	Rs.	43,463,085
	Premium(percentage) above or below	%	
	Amount of Premium	Rs.	
	Total (1)	Rs.	

Total A+B (Scheduled + Non-Scheduled) = _____

In Words: (_____)

Note: The Bidder shall carry over the quoted percentage to Letter of Price Bid page **LPB-1**.

FEDERAL GOVERNMENT EMPLOYEES HOUSING AUTHORITY
GULZAR-E - HIJRI, SCHEME-33
Items For Water Connection Sector 4-C

Public Health

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
PART A SCHEDULE ITEMS						
1	Code -103 Item # 10 Item # 10+28	EXCAVATION Excavation for raft foundations, underground tanks and septic tanks (rectangular or square) in all kinds of soil (except gravelly and murum soil wet silt, clay or mud, conglomeration of gravel and boulders, soft, sandy or disintegrated and hard rock) and back filling the excavated material all round the trenches including breaking clods, watering, consolidation by ramming in layers not exceeding 9 inches (229 mm) in depth to full compaction, dressing and disposal of surplus excavated stuff as directed, lead up to one chain (30.5 R.m) and lift upto 5 feet (1.52 m). From ± 0.00 ft to -5 ft depth From -5 ft to -8ft depth	480.00 350.00	Cft Cft	13.59 15.20	6,524.00 5,320.00
2	Code -102 Item # 13	BACKFILLING Filling depressions with excavated stuff in 6inches (152 mm) layers with in one chain (30.5R.m) lead including levelling, dressing, watering and consolidating complete With excavated earth.	106.00	Cft	10.44	1,107.00
3	Code -105 Item # 14	PLAIN CONCRETE WORKS Providing and laying 1:4:8 (1 cement 4 sand and 8 coarse aggregate) cement concrete using graded gavel (bojri) 1 inch (25 mm) and down gauge in foundation including levelling, compacting and curing etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer. Concrete Cylindrical strength 1000 Psi Ratio 1:4:8 For Chambers & UGWT	178.00	Cft	235.05	41,839.00
4	Code-114 Item # 99+138 Item # 101+138 Item # 104+138	REINFORCED CONCRETE WORKS Providing and laying reinforced cement concrete with using crushed graded boulders 3/4" inch (19 mm) and down gauge having a minimum works cube crushing strength of 4500 lbs. per sq. inch (31.04 N/mm2 at 28 days) with a mix not leaner than 1:1:2 in foundation or bottom slab of rectangular underground tank including form works and its removal, levelling, compacting and curing etc. complete but excluding the cost of reinforcement. Foundation or Bottom Slab of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi) Walls of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi) Top Slab of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi)	101.00 174.00 61.00	Cft Cft Cft	313.82 544.93 467.09	31,696.00 94,819.00 28,493.00
5	Code -114 Item # 166	STEEL REINFORCEMENT Providing and laying hard grade ribbed deformed (minimum yield point 60,000 psi) reinforcement bars with & including the cost of straightening, cutting, bending, binding, wastage, and such overlaps as are not shown in the drawings, placing in position on cement concrete 1:2:4 precast or m.s. chairs, tying with binding wire, cost of chairs and wires etc. in all kinds of RCC work in foundation, basement, plinth and ground floor of building including septic tanks and under ground tanks and in projections for future extension.	760.00	Kg	282.45	214,662.00
6	Code -108 Item # 12	BITUMEN COATING Providing a coat of bitumen emulsion at 10 Lbs. per % sft. (0.49 Kg/sm),etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer.	362.00	Sft	10.11	3,660.00
7	PWD Basic rates Code No:3721	ACCESS COVER Cast iron frame with hinged cover 380 mm to 230 mm or 15" X 9" (inside clear opening) weight 12.7 kg or 1 Qtr	1.00	Each	2921	2,921.00
8	Code -124 Item # 97	WATER STOPPER Providing and fixing PVC ribbed water stops 9" (229 mm) wide in vertical or horizontal expansion joints including cutting or jointing etc., complete in all floors.	35.00	Rft	448.81	15,709.00
AMOUNT BASED ON SCHEDULE PWD RATE 2022 PART (A)						446,750.00

FEDERAL GOVERNMENT EMPLOYEES HOUSING AUTHORITY
GULZAR-E - HIJRI, SCHEME-33
Items For Water Connection Sector 4-C

Public Health

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
PART B NON SCHEDULE ITEMS						
9		SAND BEDDING Providing, spreading, and consolidating of sand bedding material of approved quality including watering etc, complete in all respects as per drawing, standard, specifications and as directed by the Engineer.	505.00	Cft	58.00	29,290.00
10		LADDER RUNGS Providing fabricating, welding and fixing of 1" dia "Steel Rungs/ LADDER" spacing @ 12" c/c for UG Water Tank, manholes or as shown in drawing including complete required hard wares for fixing, Painting with anti corrosion paint (Red Oxide) and 03 coats of approved color & shade enamel paint at any height in any floor etc, complete in all respects as per drawing, standard, specifications and as directed by the Engineer.	17.00	Each	3005.00	51,085.00
11		HDPE PIPE Providing, laying, jointing, commissioning, testing and disinfection of HDPE pipe (PN-8) below mentioned diameter and pressure confirming to specified standards in trenches to correct alignment and grade as indicated in the drawing and specification i/c cost of all fittings (bend, tee, yee of any degree and reducer flange adapter, stub end and all other accessories equipment etc complete in all respect as per specification relevant drawing and all works to the entire satisfaction of the engineer.	15.00	Rft	118.24	1,774.00
		2 inch (50mm) dia	300.00	Rft	722.15	216,645.00
12		PUDDLE FLANGE Providing, fixing MS puddle flanges of diameter and thickness as specified below including flanges, the cost of all cleaning, Painting with one coat of redoxide and two coat of corrosion resistant paint and pressure testing including all labour, material and accessories, complete in all respect and as per specifications, relevant drawings and all works to the entire satisfaction of the engineer.	2.00	Each	12770.00	25,540.00
13		GATE VALVE Providing and fixing ductile iron sluice valve with flanged ends complete with bolts and nuts, including the cost of insertion rubber washers (valve to stand test pressure head of 400 feet (122 m). Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	3.00	Each	118250.00	354,750.00
14		CHECK VALVE Providing and fixing ductile iron non return valve with gen-metal working parts with hinged door, flanged ends and rubber washer and bolts and nuts of required dia valve. Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	1.00	Each	94875.00	94,875.00
15		FLOAT VALVE Providing and fixing ductile iron float ball valve PN-10 with flanged ends complete with bolts and nuts, including the cost of insertion rubber washers (valve to stand test pressure head of 400 feet (122 m). Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	1.00	Each	236236.00	236,236.00
16		STRAINER Providing and fixing ductile strainer BSS standard PN-16 of approved make/quality. Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	1.00	Each	77000.00	77,000.00
17		WATER METER Providing, installation, testing and commissioning of electromagnetic flow water meter including supply of all fittings for connection etc, complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. The contractor shall ensure that the flow meter size is compatible with the incoming pipe diameter for ease of connection and all necessary fitting required shall be included in the bid price.	1.00	Each	452925.00	452,925.00
		Water Meter for 5 inch (125mm) dia				

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
18		<u>THURST BORING</u> Performing horizontal thrust boring at the road crossing for the following diameters pipes as per site requirement and in collaboration with KW&SC including cost of labour, equipment, necessary protection, excavation, back filling, traffic diversion etc. complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. (The contractor shall discuss with thrust boring vendor regarding the size of bore required for inserting the following pipes and accordingly quote the bid price)				
		2 inch (50mm) dia	20.00	Rft	10000.00	200,000.00
		5 inch (125mm) dia	80.00	Rft	4500.00	360,000.00
19		<u>REINSTATEMENT OF ROAD SURFACE</u> Reinstatement of the road in proper layers including (aggregate, sub base & asphalt) that has been cut / excavated for the construction of chambers and laying of pipes, as per the directions of the Engineer.	427.77	Sft	23.70	10,139.00
20		<u>REMOVING OF EXISTING CC PAVERS</u> Removing Of Existing CC Pavers with care then excavate up to required depth for thrust boring,placing of pipe then reuse the suitable excavated earth in backfilling and reinstallation of CC Pavers .	534.71	Sft	28.62	15,304.00
SUB TOTAL AMOUNT PART - (B)						2,125,563.00
TOTAL AMOUNT PART (A+B) IN PKR						2,572,313.00
TOTAL AMOUNT PART (A+B) IN MILLION						2.57

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
PART A SCHEDULE ITEMS						
1	Code -103 Item # 10 Item # 10+28	EXCAVATION Excavation for raft foundations, underground tanks and septic tanks (rectangular or square) in all kinds of soil (except gravelly and murum soil wet silt, clay or mud, conglomeration of gravel and boulders, soft, sandy or disintegrated and hard rock) and back filling the excavated material all round the trenches including breaking clods, watering, consolidation by ramming in layers not exceeding 9 inches (229 mm) in depth to full compaction, dressing and disposal of surplus excavated stuff as directed, lead up to one chain (30.5 R.m) and lift upto 5 feet (1.52 m). From ± 0.00 ft to -5 ft depth From -5 ft to -8ft depth	480.00 350.00	Cft Cft	13.59 15.20	6,524.00 5,320.00
2	Code -102 Item # 13	BACKFILLING Filling depressions with excavated stuff in 6inches (152 mm) layers with in one chain (30.5R.m) lead including levelling, dressing, watering and consolidating complete With excavated earth.	106.00	Cft	10.44	1,107.00
3	Code -105 Item # 14	PLAIN CONCRETE WORKS Providing and laying 1:4:8 (1 cement 4 sand and 8 coarse aggregate) cement concrete using graded gavel (bajri) 1 inch (25 mm) and down gauge in foundation including levelling, compacting and curing etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer. Concrete Cylindrical strength 1000 Psi Ratio 1:4:8 For Chambers & UGWT	178.00	Cft	235.05	41,839.00
4	Code-114 Item # 99+138 Item # 101+138 Item # 104+138	REINFORCED CONCRETE WORKS Providing and laying reinforced cement concrete with using crushed graded boulders 3/4" inch (19 mm) and down gauge having a minimum works cube crushing strength of 4500 lbs. per sq. inch (31.04 N/mm2 at 28 days) with a mix not leaner than 1:1:2 in foundation or bottom slab of rectangular underground tank including form works and its removal, levelling, compacting and curing etc. complete but excluding the cost of reinforcement. Foundation or Bottom Slab of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi) Walls of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi) Top Slab of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi)	101.00 174.00 61.00	Cft Cft Cft	313.82 544.93 467.09	31,696.00 94,819.00 28,493.00
5	Code -114 Item # 166	STEEL REINFORCEMENT Providing and laying hard grade ribbed deformed (minimum yield point 60,000 psi) reinforcement bars with & including the cost of straightening, cutting, bending, binding, wastage, and such overlaps as are not shown in the drawings, placing in position on cement concrete 1:2:4 precast or m.s. chairs, tying with binding wire, cost of chairs and wires etc. in all kinds of RCC work in foundation, basement, plinth and ground floor of building including septic tanks and under ground tanks and in projections for future extension.	760.00	Kg	282.45	214,662.00
6	Code -108 Item # 12	BITUMEN COATING Providing a coat of bitumen emulsion at 10 lbs. per % sft. (0.49 Kg/sm).etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer.	362.00	Sft	10.11	3,660.00
7	PWD Basic rates Code No:3721	ACCESS COVER Cast iron frame with hinged cover 380 mm to 230 mm or 15" X 9" (inside clear opening) weight 12.7 kg or 1 Qtr	1.00	Each	2921	2,921.00
8	Code -124 Item # 97	WATER STOPPER Providing and fixing PVC ribbed water stops 9" (229 mm) wide in vertical or horizontal expansion joints including cutting or jointing etc., complete in all floors.	35.00	Rft	448.81	15,709.00
AMOUNT BASED ON SCHEDULE PWD RATE 2022 PART (A)						446,750.00

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
PART B NON SCHEDULE ITEMS						
9		SAND BEDDING Providing, spreading, and consolidating of sand bedding material of approved quality including watering etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer.	360.00	Cft	58.00	20,880.00
10		LADDER RUNGS Providing fabricating, welding and fixing of 1" dia "Steel Rungs/ LADDER" spacing @ 12" c/c for UG Water Tank, manholes or as shown in drawing including complete required hard wares for fixing, Painting with anti corrosion paint (Red Oxide) and 03 coats of approved color & shade enamel paint at any height in any floor etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer.	17.00	Each	3005.00	51,085.00
11		HDPE PIPE Providing, Laying, jointing, commissioning, testing and disinfection of HDPE pipes (PN-8) of below mentioned diameter and pressure confirming to specified standards, in trenches to correct alignment and grade as indicated in the drawing and specifications including cost of all fittings, (bend, tee, yee of any degree & reducer flange adapter, stub end) and all other accessories, equipment etc. complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	15.00 210.00	Rft Rft	118.24 722.15	1,774.00 151,652.00
12		MS PIPE Providing, laying Electric Resistance Welded (ERW) Galvanized Steel pipe as per ASTM A-500 as complete with all fittings such as elbows, tees, unions, reducers, flanges, gaskets including the cost of all cleaning, Painting with one coat of redoxide and two coat of corrosion resistant paint and pressure testing including all labour, material and accessories, complete in all respect and pas per specifications, relevant drawings and all works to the entire satisfaction of the engineer.	150.00	Rft	2712.45	406,868.00
13		PUDDLE FLANGE Providing, fixing MS puddle flanges of diameter and thickness as specified below including flanges, the cost of all cleaning, Painting with one coat of redoxide and two coat of corrosion resistant paint and pressure testing including all labour, material and accessories, complete in all respect and as per specifications, relevant drawings and all works to the entire satisfaction of the engineer.	2.00	Each	12770.00	25,540.00
14		GATE VALVE Providing and fixing ductile iron sluice valve with flanged ends complete with bolts and nuts, including the cost of insertion rubber washers (valve to stand test pressure head of 400 feet (122 m). Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	3.00	Each	118250.00	354,750.00
15		CHECK VALVE Providing and fixing ductile iron non return valve with gen-metal working parts with hinged door, flanged ends and rubber washer and bolts and nuts of required dia valve, Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	1.00	Each	94875.00	94,875.00
16		FLOAT VALVE Providing and fixing ductile iron float ball valve PN-10 with flanged ends complete with bolts and nuts, including the cost of insertion rubber washers (valve to stand test pressure head of 400 feet (122 m). Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	1.00	Each	236236.00	236,236.00

FEDERAL GOVERNMENT EMPLOYEES HOUSING AUTHORITY
GULZAR-E - HJRI, SCHEME-33
Items For Water Connection Sector 18-C

Public Health

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
17		<u>STRAINER</u> Providing and fixing ductile strainer BSS standard PN-16 of approved make/quality. Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. 5 inch (125mm) dia	1.00	Each	770000.00	770,000.00
18		<u>WATER METER</u> Providing, installation, testing and commissioning of electromagnetic flow water meter including supply of all fittings for connection etc. complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. (The contractor shall ensure that the flow meter size is compatible with the incoming pipe diameter for ease of connection and all necessary fitting required shall be included in the bid price.) Water Meter for 5 inch (125mm) dia	1.00	Each	452925.00	452,925.00
19		<u>MONOBLOCK PUMP</u> Providing, installing, testing and commissioning of monoblock pumps of approved quality made of KSB/Grundfos including Cables from pump to MCC complete in all respect, cost of motor of approved quality and required H.P. i/c M.S flange, pressure gauge, electrical cables, switches, panels with dry running protection etc. Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. (1 Duty + 1 Standby) Pump 01 For 18C (Flow = 45 US GPM, Head = 8 m)	2.00	Each	918556.00	1,837,112.00
20		<u>THRUST BORING</u> Performing horizontal thrust boring at the road crossing for the following diameters pipes as per site requirement and in collaboration with KW&SC including cost of labour, equipment, necessary protection, excavation, back filling, traffic diversion etc. complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. (The contractor shall discuss with thrust boring vendor regarding the size of bore required for inserting the following pipes and accordingly quote the bid price) 2 inch (50mm) dia 5 inch (125mm) dia	20.00 6.00	Rft Rft	10000.00 4500.00	200,000.00 27,000.00
21		<u>REINSTATEMENT OF ROAD SURFACE</u> Reinstatement of the road in proper layers including (aggregate, sub base & asphalt) that has been cut / excavated for the construction of chambers and laying of pipes, as per the directions of the Engineer.	611.10	Sft	23.70	14,484.00
22		<u>REMOVING OF EXISTING CC PAVERS</u> Removing Of Existing CC Pavers with care then excavate up to required depth for thrust boring, placing of pipe then reuse the suitable excavated earth in backfilling and reinstallation of CC Pavers .	611.10	Sft	28.62	17,490.00
SUB TOTAL AMOUNT PART - (B)						4,662,671.00
TOTAL AMOUNT PART (A+B) IN PKR						5,109,421.00
TOTAL AMOUNT PART (A+B) IN MILLION						5.11

FEDERAL GOVERNMENT EMPLOYEES HOUSING AUTHORITY
GULZAR-E - HIJRI, SCHEME-33
Items For Water Connection Sector 19-C

Public Health

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
PART A SCHEDULE ITEMS						
1	Code -103 Item # 10 Item # 10+28	EXCAVATION Excavation for raft foundations, underground tanks and septic tanks (rectangular or square) in all kinds of soil (except gravelly and murum soil wet silt, clay or mud, conglomeration of gravel and boulders, soft, sandy or disintegrated and hard rock) and back filling the excavated material all round the trenches including breaking clods, watering, consolidation by ramming in layers not exceeding 9 inches (229 mm) in depth to full compaction, dressing and disposal of surplus excavated stuff as directed, lead up to one chain (30.5 R.m) and lift upto 5 feet (1.52 m). From ± 0.00 ft to -5 ft depth From -5 ft to -8ft depth	480.00 350.00	Cft Cft	13.59 15.20	6,524.00 5,320.00
2	Code -102 Item # 13	BACKFILLING Filling depressions with excavated stuff in 6inches (152 mm) layers with in one chain (30.5R.m) lead including levelling, dressing, watering and consolidating complete. With excavated earth.	106.00	Cft	10.44	1,107.00
3	Code -105 Item # 14	PLAIN CONCRETE WORKS Providing and laying 1:4:8 (1 cement 4 sand and 8 coarse aggregate) cement concrete using graded gavel (bojri) 1 inch (25 mm) and down gauge in foundation including levelling, compacting and curing etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer. Concrete Cylindrical strength 1000 Psi Ratio 1:4:8 For Chambers & UGWT	178.00	Cft	235.05	41,839.00
4	Code-114 Item # 99+138 Item # 101+138 Item # 104+138	REINFORCED CONCRETE WORKS Providing and laying reinforced cement concrete with using crushed graded boulders 3/4" inch (19 mm) and down gauge having a minimum works cube crushing strength of 4500 lbs. per sq. inch (31.04 N/mm2 at 28 days) with a mix not leaner than 1:1:2 in foundation or bottom slab of rectangular underground tank including form works and its removal, levelling, compacting and curing etc. complete but excluding the cost of reinforcement. Foundation or Bottom Slab of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi) Walls of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi) Top Slab of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi)	101.00 174.00 61.00	Cft Cft Cft	313.82 544.93 467.09	31,696.00 94,819.00 28,493.00
5	Code -114 Item # 166	STEEL REINFORCEMENT Providing and laying hard grade ribbed deformed (minimum yield point 60,000 psi) reinforcement bars with & including the cost of straightening, cutting, bending, binding, wastage, and such overlaps as are not shown in the drawings, placing in position on cement concrete 1:2:4 precast or m.s. chairs, tying with binding wire, cost of chairs and wires etc. in all kinds of RCC work in foundation, basement, plinth and ground floor of building including septic tanks and under ground tanks and in projections for future extension.	760.00	Kg	282.45	214,662.00
6	Code -108 Item # 12	BITUMEN COATING Providing a coat of bitumen emulsion at 10 lbs. per % sft. (0.49 Kg/sm).etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer.	362.00	Sft	10.11	3,660.00
7	PWD Basic rates Code No:3721	ACCESS COVER Cast iron frame with hinged cover 380 mm to 230 mm or 15" X 9" (inside clear opening) weight 12.7 kg or 1 Qtr	1.00	Each	2921	2,921.00
8	Code -124 Item # 97	WATER STOPPER Providing and fixing PVC ribbed water stops 9" (229 mm) wide in vertical or horizontal expansion joints including cutting or jointing etc., complete in all floors.	35.00	Rft	448.81	15,709.00
AMOUNT BASED ON SCHEDULE PWD RATE 2022 PART (A)						446,750.00

FEDERAL GOVERNMENT EMPLOYEES HOUSING AUTHORITY
GULZAR-E - HJRI, SCHEME-33
Items For Water Connection Sector 19-C

Public Health

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
PART B NON SCHEDULE ITEMS						
9		SAND BEDDING Providing, spreading, and consolidating of sand bedding material of approved quality including watering etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer.	360.00	Cft	58.00	20,880.00
10		LADDER RUNGS Providing fabricating, welding and fixing of 1" dia "Steel Rungs/ LADDER" spacing @ 12" c/c for UG Water Tank, manholes or as shown in drawing including complete required hard wares for fixing, Painting with anti corrosion paint (Red Oxide) and 03 coats of approved color & shade enamel paint at any height in any floor etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer.	17.00	Each	3005.00	51,085.00
11		HDPE PIPE Providing, Laying, jointing, commissioning, testing and disinfection of HDPE pipes (PN-8) of below mentioned diameter and pressure confirming to specified standards, in trenches to correct alignment and grade as indicated in the drawing and specifications including cost of all fittings, (bend, tee, yee of any degree & reducer flange adaptor, stub end) and all other accessories, equipment etc. complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	15.00	Rft	118.24	1,774.00
		2 inch (50mm) dia	210.00	Rft	722.15	151,652.00
12		MS PIPE Providing, Laying Electric Resistance Welded (ERW) Galvanized Steel pipe as per ASTM A-500 as complete with all fittings such as elbows, tees, unions, reducers, flanges, gaskets including the cost of all cleaning, Painting with one coat of redoxide and two coat of corrosion resistant paint and pressure testing including all labour, material and accessories, complete in all respect and pas per specifications, relevant drawings and all works to the entire satisfaction of the engineer.	150.00	Rft	2712.45	406,868.00
		5 inch (125 mm) dia Wall Thickness (5.16 mm)				
13		PUDDLE FLANGE Providing, fixing MS puddle flanges of diameter and thickness as specified below including flanges, the cost of all cleaning, Painting with one coat of redoxide and two coat of corrosion resistant paint and pressure testing including all labour, material and accessories, complete in all respect and as per specifications, relevant drawings and all works to the entire satisfaction of the engineer.	2.00	Each	12770.41	25,541.00
		5 inch (125mm) dia				
14		GATE VALVE Providing and fixing ductile iron sluice valve with flanged ends complete with bolts and nuts, including the cost of insertion rubber washers (valve to stand test pressure head of 400 feet (122 m). Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	3.00	Each	118250.00	354,750.00
		5 inch (125mm) dia				
15		CHECK VALVE Providing and fixing ductile iron non return valve with gate/needle working parts with hinged door, flanged ends and rubber washer and bolts and nuts of required dia valve, Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	3.00	Each	94875.00	284,625.00
		5 inch (125mm) dia				
16		FLOAT VALVE Providing and fixing ductile iron float ball valve PN-10 with flanged ends complete with bolts and nuts, including the cost of insertion rubber washers (valve to stand test pressure head of 400 feet (122 m). Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.	1.00	Each	236236.00	236,236.00
		5 inch (125mm) dia				

FEDERAL GOVERNMENT EMPLOYEES HOUSING AUTHORITY
GULZAR-E - HIJRI, SCHEME-33
Items For Water Connection Sector 19-C

Public Health

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
17		STRAINER Providing and fixing ductile strainer BSS standard PN-16 of approved make/quality. Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. 5 inch (125mm) dia	1.00	Each	77000.00	77,000.00
18		WATER METER Providing, installation, testing and commissioning of electromagnetic flow water meter including supply of all fittings for connection etc. complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. The contractor shall ensure that the flow meter size is compatible with the incoming pipe diameter for ease of connection and all necessary fitting required shall be included in the bid price. Water meter for 5 inch (125mm) dia	1.00	Each	452925.00	452,925.00
19		MONOBLOCK PUMP Providing, installing, testing and commissioning of monoblock pumps of approved quality made of KSB/Grundfos including Cables from pump to MCC complete in all respect, cost of motor of approved quality and required H.P. i/c M.S flange, pressure gauge, , electrical cables, switches, panels with dry running protection etc. Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. (1 Duty + 1 Standby) Pump 02 For 19C (Flow = 71 US GPM, Head = 10 m)	2.00	Each	1326453.00	2,652,906.00
20		THRUST BORING Performing horizontal thrust boring at the road crossing for the following diameters pipes as per site requirement and in collaboration with KW&SC including cost of labour, equipment, necessary protection, excavation, back filling, traffic diversion etc. complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. (The contractor shall discuss with thrust boring vendor regarding the size of bore required for inserting the following pipes and accordingly quote the bid price) 2 inch (50mm) dia 5 inch (125mm) dia	20.00 6.00	Rft Rft	10000.00 4500.00	200,000.00 27,000.00
21		REINSTATEMENT OF ROAD SURFACE Reinstatement of the road in proper layers including (aggregate, sub base & asphalt) that has been cut / excavated for the construction of chambers and laying of pipes, as per the directions of the Engineer.	427.77	Sft	23.70	10,139.00
22		REMOVING OF EXISTING CC PAVERS Removing Of Existing CC Pavers with care then excavate up to required depth for thrust boring, placing of pipe, then reuse the suitable excavated earth in backfilling and reinstallation of CC Pavers .	427.77	Sft	28.62	12,243.00
SUB TOTAL AMOUNT PART - (B)						4,965,624.00
TOTAL AMOUNT PART (A+B) IN PKR						5,412,374.00
TOTAL AMOUNT PART (A+B) IN MILLION						5.41

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
	PART A	SCHEDULE ITEMS				
1		EXCAVATION Excavation for raft foundations, underground tanks and septic tanks (rectangular or square) in all kinds of soil (except gravelly and murum soil wet silt, clay or mud, conglomeration of gravel and boulders, soft, sandy or disintegrated and hard rock) and back filling the excavated material all round the trenches including breaking clods, watering, consolidation by ramming in layers not exceeding 9 inches (229 mm) in depth to full compaction, dressing and disposal of surplus excavated stuff as directed, lead up to one chain (30.5 R.m) and lift upto 5 feet (1.52 m).				
	Code -103					
	Item # 10	From ± 0.00 ft to -5 ft depth	880.00	Cft	13.59	11,960.00
	Item # 10+28	From -5 ft to -8ft depth	650.00	Cft	15.20	9,880.00
2		BACKFILLING Filling depressions with excavated stuff in 6inches (152 mm) layers with in one chain (30.5R.m) lead including levelling, dressing, watering and consolidating complete				
	Code -102					
	Item # 13	With excavated earth.	195.00	Cft	10.44	2,036.00
3		PLAIN CONCRETE WORKS Providing and laying 1:4:8 (1 cement 4 sand and 8 coarse aggregate) cement concrete using graded gavel (bajri) 1 inch (25 mm) and down gauge in foundation including levelling, compacting and curing etc. complete in all respects as per drawing, standard , specifications and as directed by the Engineer.				
	Code -105					
	Item # 14	Concrete Cylindrical strength 1000 Psi Ratio 1:4:8 For Chambers & UGWT	185.00	Cft	235.05	43,484.00
4		REINFORCED CONCRETE WORKS Providing and laying reinforced cement concrete with using crushed graded boulders 3/4" inch (19 mm) and down gauge having a minimum works cube crushing strength of 4500 lbs. per sq. inch (31.04 N/mm2 at 28 days) with a mix not leaner than 1:1:2 in foundation or bottom slab of rectangular underground tank including form works and its removal, levelling, compacting and curing etc. complete but excluding the cost of reinforcement.				
	Code-114					
	Item # 99+138	Foundation or Bottom Slab of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi)	185.00	Cft	313.82	58,057.00
	Item # 101+138	Walls of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi)	408.00	Cft	544.93	222,333.00
	Item # 104+138	Top Slab of Rectangular Underground Tank (Cylindrical Strength 4000 Psi equal to Cubical strength 4500 Psi)	185.00	Cft	467.09	86,412.00
5		STEEL REINFORCEMENT Providing and laying hard grade ribbed deformed (minimum yield point 60,000 psi) reinforcement bars with & including the cost of straightening, cutting, bending, binding, wastage, and such overlaps as are not shown in the drawings, placing in position on cement concrete 1:2:4 precast or m.s. chairs, tying with binding wire, cost of chairs and wires etc. in all kinds of RCC work in foundation, basement, plinth and ground floor of building including septic tanks and under ground tanks and in projections for future extension .				
	Code -114					
	Item # 166		1,756.00	Kg	282.45	495,983.00
6		BITUMEN COATING Providing a coat of bitumen emulsion at 10 Lbs. per % sft. (0.49 Kg/sm),etc. complete in all respects as per drawing, standard , specifications and as directed by the Engineer.				
	Code -108					
	Item # 12		742.00	Sft	10.11	7,502.00
7		ACCESS COVER Cast iron frame with hinged cover 380 mm to 230 mm or 15" X 9" (inside clear opening)				
	PWD Basic rates					
	Code No:3721	weight 12.7 kg or 1 Qtr	1.00	Each	2921	2,921.00
8		WATER STOPPER Providing and fixing PVC ribbed water stops 9" (229 mm) wide in vertical or horizontal expansion joints including cutting or jointing etc., complete in all floors.				
	Code -124					
	Item # 97		31.00	Rft	448.81	13,914.00
9		ALUMINIUM COVER Providing and fixing fully glazed Silver anodized or powder coated aluminium Hinged door with frame as per British standard manufactured by Lucky, Prime, Chawla, Krudson and Pakistan Cables. (fixing through their approved fabricators). Economy model section, 2mm thick including the aluminium fittings, with all accessories cutting hole etc. and making good damages to walls etc. complete as required in any floor as perdirection of engineer-in-charge, but excluding the cost of glass pans.				
	Code -119					
	Item # 105					
		Access for pump room	76.00	Sft	1317.19	100,107.00
AMOUNT BASED ON SCHEDULE PWD RATE 2022 PART (A)						1,054,589.00

FEDERAL GOVERNMENT EMPLOYEES HOUSING AUTHORITY
GULZAR-E - HURI, SCHEME-33
Items For Water Connection Sector 24B 25B

Public Health

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
	PART B	NON SCHEDULE ITEMS				
10		SAND BEDDING Providing, spreading, and consolidating of sand bedding material of approved quality including watering etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer.	7,239.00	Cft	58.00	419,862.00
11		LADDER RUNGS Providing fabricating, welding and fixing of 1" dia "Steel Rungs/ LADDER" spacing @ 12" c/c for UG Water Tank, manholes or as shown in drawing including complete required hard wares for fixing, Painting with anti corrosion paint (Red Oxide) and 03 coats of approved color & shade enamel paint at any height in any floor etc. complete in all respects as per drawing, standard, specifications and as directed by the Engineer.	17.00	Each	3005.00	51,085.00
12		HDPE PIPE Providing, Laying, jointing, commissioning, testing and disinfection of HDPE pipes (PN-8) of below mentioned diameter and pressure confirming to specified standards, in trenches to correct alignment and grade as indicated in the drawing and specifications including cost of all fittings, (bend, tee, yee of any degree & reducer flange adaptor, stub end) and all other accessories, equipment etc. complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.				
		3 inch (75mm) dia	15.00	Rft	263.00	3,945.00
		5 inch (125mm) dia	625.00	Rft	722.15	451,344.00
		7.1 inch (180mm) dia	2,565.00	Rft	1490.45	3,823,005.00
		11.2 inch (280mm) dia	980.00	Rft	3605.06	3,532,959.00
13		MS PIPE Providing, laying Electric Resistance Welded (ERW) Galvanized Steel pipe as per ASTM A-500 as complete with all fittings such as elbows, tees, unions, reducers, flanges, gaskets including the cost of all cleaning, Painting with one coat of redoxide and two coat of corrosion resistant paint and pressure testing including all labour, material and accessories, complete in all respect and as per specifications, relevant drawings and all works to the entire satisfaction of the engineer.				
		7.1 inch (180mm) dia Wall Thickness (5.16 mm)	150.00	Rft	4262.00	639,300.00
		11.2 inch (280mm) dia Wall Thickness (5.16 mm)	150.00	Rft	6349.00	952,350.00
14		PUDDLE FLANGE Providing, fixing MS puddle flanges of diameter and thickness as specified below including flanges, the cost of all cleaning, Painting with one coat of redoxide and two coat of corrosion resistant paint and pressure testing including all labour, material and accessories, complete in all respect and as per specifications, relevant drawings and all works to the entire satisfaction of the engineer.				
		5 inch (125mm) dia	2.00	Each	12770.00	25,540.00
15		UPVC PIPE Providing laying jointing fixing UPVC pipes confirmed to BS3505/ps3501 (cement solvent) of class 'D' & manufacturer specification i/c fitting (tee, bend and end plug etc) cutting jointing specials transportation loading unloading at the site of work staking and testing as per standard with water minimum pressure as specified etc. complete in all respect as per specification and relevant drawing, and all works to the entire satisfaction of the engineer.				
		2 inch (50mm) dia	150.00	Rft	364.09	54,614.00
16		AIR VENT PIPE Providing and fixing 4" (100 mm) dia CI soil and vent pipes spuri including cutting and fitting and extra painting to match the color of the building and cartage within 10 miles	40.00	Rft	963.00	38,520.00
17		STEEL GRATING Manufacturing, supplying & fixing ductile iron grating conforming to C230 capable of with standing 250 KN test load with frame of size as shown in drawings i/c fabricating, epoxy coating, complete in all respect as per drawings, specifications and as directed by Engineer.	1.00	Each	30938.00	30,938.00
18		GATE VALVE Providing and fixing ductile iron sluice valve with flanged ends complete with bolts and nuts, including the cost of insertion rubber washers (valve to stand test pressure head of 400 feet (122 m). Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer.				
		3 inch (75mm) dia	2.00	Each	61875.00	123,750.00
		5 inch (125mm) dia	3.00	Each	118250.00	354,750.00
		7.1 inch (180mm) dia	3.00	Each	209384.00	628,152.00
		11.2 inch (280mm) dia	3.00	Each	391875.00	1,175,625.00

FEDERAL GOVERNMENT EMPLOYEES HOUSING AUTHORITY
GULZAR-E - HJRI, SCHEME-33
Items For Water Connection Sector 248 258

Public Health

S.NO	PWD Schedule 2022 Ref.No	DESCRIPTION	QTY	UNIT	RATE (Pak Rs.)	AMOUNT (Pak Rs.)
1	2	3	4	5	6	7 = 4 x 6
19		CHECK VALVE Providing and fixing ductile iron non return valve with gen-metal working parts with hinged door, flanged ends and rubber washer and bolts and nuts of required dia valve. Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. 5 inch (125mm) dia 11.2 inch (280mm) dia	4.00 1.00	Each Each	94875.00 163385.00	379,500.00 163,385.00
20		FLOAT VALVE Providing and fixing ductile iron float ball valve PN-10 with flanged ends complete with bolts and nuts, including the cost of insertion rubber washers (valve to stand test pressure head of 400 feet (122 m). Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. 5 inch (125mm) dia	4.00	Each	236236.00	944,944.00
21		STRAINER Providing and fixing ductile strainer BSS standard PN-16 of approved make/quality. Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. 7.1 inch (180mm) dia	1.00	Each	148,500.00	148,500.00
22		WATER METER Providing, installation, testing and commissioning of electromagnetic flow water meter including supply of all fittings for connection etc. complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. <i>The contractor shall ensure that the flow meter size is compatible with the incoming pipe diameter for ease of connection and all necessary fitting required shall be included in the bid price.</i> Water Meter for 7.1 inch (180mm) dia	1.00	Each	778,800.00	778,800.00
23		DRAIN OUT PUMP Providing, installing, testing and commissioning of submersible pumps of approved quality (KSB/GrundFos or equivalent) including cost of motor of approved quality and required H.P. i/c cost of all fittings (Tee, Bends, Reducer/Expander), pipe sleeves, M.S flange, pressure gauge, flexible coupling, non return valve, gate valve, electrical cables, switches, panels with dry running protection etc. complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. Flow = 20 US GPM, Head = 25 ft	1.00	Each	530558.00	530,558.00
24		MONOBLOCK PUMP Providing, installing, testing and commissioning of monoblock pumps of approved quality made of KSB/GrundFos including Cables from pump to MCC complete in all respect, cost of motor of approved quality and required H.P. i/c M.S flange, pressure gauge, electrical cables, switches, panels with dry running protection etc. Complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. (1 Duty + 1 Standby) Pump 03 For 248 & 258 (Flow = 700 US GPM, Head = 30 m)	2.00	Each	6679788.00	13,359,576.00
25		THRUST BORING Performing horizontal thrust boring at the road crossing for the following diameters pipes as per site requirement and in collaboration with KW&SC including cost of labour, equipment, necessary protection, excavation, back filling, traffic diversion etc. complete in all respect, as per specifications, relevant drawings and all works to the entire satisfaction of the Engineer. <i>(The contractor shall discuss with thrust boring vendor regarding the size of bore required for inserting the following pipes and accordingly quote the bid price)</i> 3 inch (75mm) dia 5 inch (125mm) dia 7.1 inch (180mm) dia 11.2 inch (280mm) dia	13.50 186.00 60.00 253.00	Rft Rft Rft Rft	5000.00 4500.00 7500.00 5500.00	67,500.00 837,000.00 450,000.00 1,391,500.00
26		REINSTATEMENT OF ROAD SURFACE Reinstatement of the road in proper layers including (aggregate, sub base & asphalt) that has been cut / excavated for the construction of chambers and laying of pipes, as per the directions of the Engineer.	1682.84	Sft	23.70	39,884.00
27		REMOVING OF EXISTING CC PAVERS Removing Of Existing CC Pavers with care then excavate up to required depth for thrust boring, placing of pipe then reuse the suitable excavated earth in backfilling and reinstallation of CC Pavers.	10913.36	Sft	28.62	312,341.00
SUB TOTAL AMOUNT PART - (B)						31,709,227.00
TOTAL AMOUNT PART (A+B) IN PKR						32,763,816.00
TOTAL AMOUNT PART (A+B) IN MILLION						32.76

Sp. No.	Description
SP-25	Unit Price Breakdown
SP-26	Transport and Handling of Cargo
SP-27	Directed and Required
SP-28	Communications to the Engineer
SP-29	Any Other Provision
SP-30	Measurement and Payment – General
SP-31	Measurement and Payment

[Note:

The above Sections of Specifications, are for guidance only, and shall be indicated appropriate to the work/project.

The Employer may adopt the above format. However, if any section is not applicable, it may be mentioned as “Not Used”.]

1. THE SITE

Site of Works is the area for construction lying within the line of boundaries and limits shown on the Drawings and any such additional areas adjacent thereto as may be designated by “The Engineer” from time to time for the construction to be performed under the contract and all such areas and additional areas shall be comprised in the site defined in clause 1 Conditions of Contract.

The Employer will give to the contractor, possession of the area designated and defined as “the site” and shown on the drawings as may be required to implement as much of the works when The Engineer’ Notice to Commence the Work is given.

2. WORK UNDER THE CONTRACT

The contract comprises the execution and completion of the works, remedying of any defects therein maintenance of utility services and the provisions of all labor, materials equipment plant and everything whether of a temporary or permanent nature required in the such execution, completion, remedying and maintenance so far as the necessity for providing the same is specified or can reasonably be inferred from the Contract.

The carrying out of all work included in the Contract is to be supervised by a sufficient number of qualified representatives of the Contractor and full facilities and assistance are to be afforded by the Contractor for the Engineer or his Representative to check and examine the execution of the work. The Engineer reserves the right to inspect all parts of the works but may at his discretion waive inspection on certain items. This shall in no way absolve the Contractor from his responsibilities. This particularly applies to the checking of materials, the accurate setting out of foundations, and to the leveling, setting and aligning of the various parts, and to the proper fitting and adjustment of manufactured and finished materials and fixtures in position.

The Contractor shall submit to “The Engineer” in due time for approval and discussion, his proposals and plans as to the method and procedure to be adopted for the temporary and permanent works involved.

Submission of the proposals & plans, methodology and procedure for execution of works and approval thereof by the Engineer shall not relieve the Contractor of his responsibilities and duties under the Contract.

If the Engineer or his Representative find that the work progress is slow in such a way that the works or parts thereof will not be completed in the time specified, then he shall order the Contractor to work overtime or in shifts and the Contractor shall comply. These arrangements will be free of all financial encumbrances and at no additional costs to the Employer.

In the event of night work, the Contractor shall provide sufficient and adequate lighting to the satisfaction of the Engineer or his Representative and shall supply the necessary manpower for satisfactory continuation of the work after normal hours.

3. **PROJECT FEATURES**

The Work under this Contract Package comprises of “Water Connection Works of Sector 4C, 18C, 19C, 24B & 25B At KDA Scheme-33, Gulzar-E-Hijri, Karachi.

4. **CARE AND HANDLING OF WATER**

The Contractor shall take all necessary measures to prevent water from the Site causing a nuisance on or, in any neighboring land or property either by causing flooding or by depositing sediment on the surface of the ground or in drains or watercourses. Wherever necessary to prevent this, the Contractor shall construct temporary drainage channels, layer sumps and traps (in addition to those shown on the Contract) discharging into existing drain, ditches or watercourses. The Contractor shall remove over all sediment, which may accumulate on any land or in any drains, ditches or watercourses or in any other property as a result of his operations.

All works including that below sub-soil standing water level shall be carried out in the dry unless specified otherwise. The Contractor's arrangements for controlling the inflow of water into the parts of the excavation being worked and during the placing of concrete and other works therein and for the collection and disposal of water shall be to the Engineer's Approval. Such arrangements may include inter alia temporary cofferdams, well-point systems, pumps; drains trenches, flumes and other recognized means. All Costs and charges in dealing with water in any way whatsoever and the effects thereof will be deemed to be included in the Contract Price and in the unit rates or prices of the Contractor for excavations.

Water flowing into excavations shall be carried by trenches, drainage layers or open jointed drains to sumps from which it shall be pumped. Such trenches drains or sumps shall generally be clear of the Permanent Works unless approved otherwise by the Engineer. If the Approval of the Engineer for trenches drains or sumps are excavated under or immediately adjacent the Permanent Works, these shall comprise open-jointed pipes with gravel mounds. When no longer required and when approved by the Engineer they shall be filled with a cement /sand grout injected under pressure so as to fill the pipe and all voids completely.

The Contractor shall keep all surfaces upon or against which concrete is to be deposited free from running water and no concrete shall be placed until such surfaces are properly drained. Suitable precautions shall be taken to prevent running water from washing out cement or concrete while it is setting or from injuring the Works in any other way.

Notwithstanding the Approval by the Engineer of the Contractor's methods of dealing with water, the Contractor shall be responsible for and accept all the risks and liabilities of dealing with water from whatever source and of all effects thereof.

5. DRAWINGS

Tender Drawings

Tender Drawings issued with the Tender Documents called Tender Drawings; show scope of the work to be performed by the contractor. The Drawings are generally in sufficient details so as to be used as a basis for construction and fabrication.

☐ **Construction Drawings, Supplementary Drawings**

After award of Contract, the Engineer will issue Construction Drawings to the Contractors.

The Engineer shall have authority to issue the Contractor, from time to time, such supplementary Drawings and instructions as shall be necessary for the purpose of the proper and adequate execution and completion of the Works and the remedying of any defect therein. The Contractor shall follow these drawings.

The Contractor shall give notice to the Engineer regarding the part of the Drawings which is in his opinion contains discrepancies or are not clear. The Engineer shall issue necessary clarification or supplementary Drawing in greater details as required to execute the works. These supplementary Drawings shall be reviewed by the Engineer for his determination of adjustment of the Contract Price under Clause 51 and 52 of Conditions of Contract.

Definition of Term Drawings

The term used in the specifications means the Drawings referred in Clause 5.1 and 5.2 hereof.

Checking of Drawings

The contractor shall check all drawings carefully as soon as practicable after receipt thereof, and shall promptly notify the Engineer of any errors discovered.

Copies of Drawings

Drawings will be issued to the contractor as described below.

Tender Drawings

One (1) set of the Tender Drawings will be issued to the Contractor along with Tender Document. Additional sets will be provided at cost of reproduction upon written request of the contractor.

Construction Drawings/ Supplementary Drawings

- ☐ One (1) print of each Construction Drawings/ Supplementary drawings will be issued to the contractor free of charge. Additional sets will be provided at cost of reproduction upon written request of the Contractor.

Drawings to be furnished by the Contractor/As-Built Drawings

- ☐ The contractor shall submit to the Engineer for review of such drawings as required under the contract sufficient in advance of the work intended to be executed.

The contractor shall, at all times, keep on site a separate set of prints on which all significant changes between the work shown on the drawings and the which is actually constructed, shall be noted neatly, accurately and promptly as the work progresses. The Sub-contractor(s) for plumbing, mechanical and electrical shall at all times, keep in site, a separate set of prints of the drawings (showing their parts of the Works) on which all significant changes between the work shown on the Drawings and that which is actually constructed, shall be noted neatly, accurately and promptly as the work progress. Such drawings shall show the exact physical location and configuration of the works as actually installed.

The contractor shall within fourteen (14) days of issuance Taking-Over Certificate for whole of the Works furnished to the Engineer for his approval two (2) copies of such marked up drawings. One (1) copy of each of the marked-up drawings approved by the engineer shall be returned to the contractor by the Engineer and these shall be used for the preparation of the AS-BULIT

Drawings.

The contractor shall furnish to the Engineer Six (6) Complete Sets of all AS-BUILT Drawings as well as AutoCAD soft copy within 30 Days of receipt of drawings stated above, from the Engineer.

6. PHYSICAL AND OTHER DATA AVAILABLE TO CONTRACTOR

Drawings and information pertaining to existing project conditions are furnished for reference. Neither the Employer nor the Engineer warrants the adequacy or correctness of these. The Contractors are encouraged to visit the project site to assess the existing site conditions.

7. LAYOUT OF WORKS AND SURVEY

The Contractor shall establish benchmarks and / or reference line at the Site in accordance with the instructions of the Engineer. The Contractor shall set out its work from these benchmarks and lines. The Contractor shall supply plant, equipment, materials and labor for checking if required of the survey control by the Engineer. Slope stakes will be set by the Contractor before commencement of excavation and will be re-established as required during progress of work using established benchmarks and reference points.

The Engineer may make checks as the work progress to verify lines and grades established by the Contractor and to determine the conformance of the work as it progresses with the requirements of the Drawings and Specifications. Such checking by the Engineer shall not relieve the Contractor of his responsibility to perform all work in accordance with the Drawings and Specifications and the lines and grades given therein.

Based upon the basic control, the Contractor shall provide his own primary control points, as needed for the Works, and shall preserve and maintain them until otherwise authorized.

The Contractor shall be responsible for maintaining all survey markers/monuments, and property corners. If any markers/monuments are destroyed by the Contractor, the Contractor shall arrange, at his own cost, to retrace and replace them to the entire satisfaction of the Engineer. If a monument cannot be replaced in its original position, the Contractor shall install a witness corner. The Contractor shall complete and file monument reference cards on all monuments as per instructions of the Engineer.

The Contractor shall provide experienced Construction Surveyors with adequate experience in the construction surveys similar in nature as required by this Contract.

Based upon established basic control monuments the Contractor shall establish all lines and grades necessary to control the Works, and shall be responsible for all measurements that may be required for execution of the Works to the tolerance prescribed below.

The Contractor shall perform such surveys and computations as are necessary to determine quantities of work performed or placed during each progress payment period, and shall also perform all surveys necessary for the Engineer to determine final quantities of work in place. The Engineer will determine final quantities based on original ground levels determined by the Contractor and agreed by the Engineer.

The Contractor shall notify the Engineer at least 24 hours before performing a quantity survey and, unless specifically waived, quantity surveys shall be performed in the presence of an authorized representative of the Engineer. Degree of accuracy for the survey works shall satisfy the following specified tolerances:

a) Structure points shall be set within 0.01 foot accuracy from point to point, except where tighter

tolerances are required.

b) Cross-section points shall be located within 0.10 foot, horizontally and 0.01 foot vertically.

c) Permissible closing error for a levelling line meant for establishing

Temporary Bench Mark (TBMs) shall not exceed $0.045 \times \sqrt{M}$ foot, where M is in miles. The permissible closing error shall be duly adjusted.

The Contractor shall provide all materials, equipment and labor required for surveying work, including, but not limited to, instruments, stakes, spikes, steel pins, templates, platforms, and tools, and except as required to be incorporated in the work or left in place, all such materials and equipment, shall remain the property of the Contractor. Surveying instruments shall be in perfect working condition and shall be subject to rigid inspection for proper operation at least after every two weeks of use. Defective instruments shall be promptly replaced or repaired and adjusted to the satisfaction of the Engineer.

Survey data shall be recorded in accordance with recognized professional surveying standards. Original field notes, computations, and other surveying data shall be recorded in the Contractor furnished field books. Notes or data not in accordance with standard formats will be rejected. Illegible notes or data, or use of erasures on any page of a field book will be considered sufficient cause for rejection of part or the entire field book. Copied notes or data will not be permitted; therefore, rejection of part or all of a field book may necessitate re-surveying. Corrections by ruling or lining out errors will be satisfactory.

The cost of all materials, equipment, surveyors and labor required for surveys for the Works and quantity surveys required by this clause shall be deemed to be included in the rates and prices of the various items in the Bill of Quantities and no separate measurement and payment in their respect shall be made.

The Contractor shall maintain at the Site the requisite surveying instruments in perfect working conditions to enable the Engineer's Representative to check levels and lines of the work at all times.

APPROVAL OF MATERIALS AND EQUIPMENT

8.

Quantity of Materials

All materials, fixtures, fittings supplies and plant furnished under the contract shall be new and unused, standard first grade quality and of the best workmanship and design. No inferior or low-grade materials, supplies or articles will be either approved or accepted and all work of assembly and construction shall be done in a first class and workmanlike manner. In asking for prices for materials intended for delivery to the site and incorporation in the Works under any portion of these specifications the contractor shall provide the manufacturer or supplier with complete information as may be necessary to secure compliance to this Clause and in every case, he shall quote this Clause in full to each manufacturer or Supplier.

☐ **Submission of Samples and Data.**

As soon as practicable after the award of Contract, the Contractor shall submit for the approval of the Engineer drawings, Catalogues diagrams and other descriptive data for all mechanical, electrical, architectural and such other materials and plant designated by the Engineer, which the contractor proposes for use under this Contract. For certain materials and plant, data may be required to be submitted in accordance with a detail form furnished by the Engineer. Samples of materials (2 Sets) shall be submitted by the Contractor to the Engineer at Contractor's Cost for approval sufficiently in advance of the materials intended to be incorporated in the Works.

☐ **Testing**

Testing, except as otherwise specified herein shall be performed by a testing agency as proposed by the Contractor and approved by the Engineer at no extra cost to the Employer. The Engineer may require all testing to be carried out under his and employer supervision.

The quality control testing shall be performed by the contractor's competent personnel in accordance with a site testing as approved by the Engineer.

☐ **The contractor shall keep a complete record of all quality tests programme performed on site. Testing Laboratory Certificates.**

The Engineer may accept a certificate from a commercial testing laboratory, satisfactory to him, certifying that the product has been tested within a period acceptable to the Engineer and that it

conforms to the requirements of these Specifications.

☐ **Inspection**

All materials and Plant furnished and all work performed under this contract will be subject to inspection by the Engineer at all times and in all states of completion both off-site and on-site. The contractor shall furnish promptly without additional charge, all facilitate, and labor and materials reasonably needed for performing such inspection and testing as may be required by the Engineer.

Approved Sample at Site.

- ☐ The contractor shall at all times keep on the site approved samples. All such samples shall be made available to the Engineer as and when required.

Site laboratory.

- ☐ The Laboratory shall be equipped with new unused and latest Equipment to perform tests as per Technical Specifications and General Conditions of Contract. Additional equipment/materials shall be supplied by the Contractor as and when required by the Engineer to perform any specified test, at no additional cost to the Employer.

The laboratory shall also be equipped with new unused furniture, fittings and fixtures. If any equipment, furniture, fitting or fixture becomes unserviceable for any reason what so ever, the Contractor shall promptly replace the same as and when directed by the Engineer.

Bar Bending Schedule

- ☐ Bar bending (reinforcement bars) schedule of all structural drawings shall be prepared by the Contractor and submitted in triplicate to the Engineer for approval

Submissions

Schedule submission at least sixty days before the dates when reviewed submittals will be needed.

- ☐ Shop drawings of activities, as deemed necessary by the Engineer, shall be submitted for review and approval by the Engineer as stipulated within the contract terms. Submit Shop Drawings and number of copies of Product Data which the Contractor requires for distribution plus four copies which will be retained by the Engineer.

Submit three samples unless otherwise specified.

Accompany submittals with transmittal letter, in duplicate, containing:

- Data
- Project title and number
- Contractor's name and address
- The number of each Shop Drawing, Product Data and the Sample submitted.
- Notification of deviations from Contract Documents.
- Other pertinent data.

Re- Submissions Requirements

Shop Drawings:

- Revise initial drawings as required and resubmit as specified for initial submittal.
- ☐ - Indicate on drawings any changes which have been made by the Engineer.
- Product Data and Samples: Submit new data and samples as required for initial submittal.

- ☐ The contractor shall be responsible for any approval to be accorded by KW&SC and other related authorities.

9. CONTRACTOR'S QUALITY ASSURANCE PLAN/ SPECIFICATIONS

- Specification** or **as** **specified**
 Specification or as specified refer to the specifications outlined in these Documents and where no specifications are available for any work or where the same are found not applicable then the relevant applicable ASTM or BSS specifications or equivalent standards shall apply in the same order. Anytime for which no specifications are outlined but which are identified in drawings shall be completed accordingly to the standards as per ASTM/BSS these include items that may be added in the future. The Employer/Employer's representative may supplement such specifications during the progress of work. All materials and processes used for these items shall be subject to standard testing and if found below the pertinent ASTM/BSS standards, shall be removed from the site immediately at the contractor's expense.
- ☐ **Standards and codes**
 Wherever reference is made in the specification to the respective standards codes in accordance to the which goods and materials are to be furnished and work is to be performed or tested, the provision of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly set forth in the contract.
- ☐ **Material and process**
 All goods and materials to be incorporated in the work shall be new, unused of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the contract.
- ☐ **Equivalent Material, Process etc.**
 Where specific materials, processes etc. are specified and the same are not available other alternative material and processes which ensure an equal or higher quality than those specified will be accepted subject to the Employer prior review and written approval. Differences between the specified and the proposed alternatives must be fully described in writing by the contractor and submitted to the Employer's approval whom may give such approval after determining that the alternative proposed ensures equal or higher quality.
- Approved, Directed, Instructed**
 Approved, directed, instructed mean the approval etc. of the Employer unless otherwise stated.
- Alternatives**
 Where alternative materials process etc., are specified the selection will depend on local conditions and discretion rest with the Employer/Employer's Representative whose decision shall be final and binding.
- ☐ **Catalogues/Standards/Manufacturer's Instructions, etc.**
 Wherever the manufacturer's/supplier's instructions, Manuals, guarantees and ASTM/BSS standards are referred to in the specifications and detail of BOQ; all such literature shall be submitted by the contractor to the Employer/Employer's Representative for due checking, approval and record.
- ☐ **Applicability** Unless stated or specified else-
 where to the contrary these General Rules shall apply to all sections of work irrespective of their sequences, location and description. Suppliers of local and foreign products and installation specified shall have been regularly engaged in the business of manufacturing, fabricating, installing and/or servicing work required for a period not less than 5 years. In addition, the Engineer may request as appropriate a list of similar installations that describes project, scope and date of completion, complete literature, performance data, and technical data, list of services record within Pakistan and location of service office from which this installation could be maintained.

For the actual fabrication, installation and testing of the specified work use only thoroughly trained and experienced workmen completely familiar with the items required and with the manufacturers recommended methods of installation. In acceptance or rejection, no allowance will be made for the lack of skill on the part of workmen.

Use all means necessary to protect materials before, during and after installation and to protect the installed work and materials of all other trades. In the event of damage, immediately make all repairs and replacement necessary for approval and at no additional cost to the Employer. Manufacture's standard schematic drawings shall be modified or deleted to indicate only information which is applicable to the project. Such standard information shall be supplemented to provide all additional applicable information.

Manufacturer's catalogue sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive literature shall be clearly marked to identify pertinent materials products or models. Dimensions and required clearances shall be indicated. Shop performance characteristics and capacities shall be noted.

Except as otherwise provided by these Specifications or the Drawings, all materials, equipment and fabrication and testing thereof shall conform to the latest applicable standards and codes referred in the Specifications by use of the abbreviations explained below:

ASCE - American Society of Civil Engineers
 ASA- American Standard Association
 ACI- American Concrete Institute (USA)
 AISI- American Iron and Steel Institute (USA)
 AISC- American Institute of Steel Construction (USA)
 ANSI - American National Standard Institute (USA)
 ASTM - American Society for Testing and Materials (USA)
 AASHTO - American Association of State Highway & Transportation Officials
 AWS - American Welding Society (USA) BS - British Standards (UK)
 CP - Codes of Practice (UK)
 ICAO - International Civil Aviation Organization BSICP - British Standard Institute Code of Practice PS - Pakistan Standards (Pak)
 PCA - Portland Cement Association PSI - Pakistan Standard Institute
 SSPC - Steel Structures Painting Council (USA) UBC - Uniform Building Code (USA)
 USBR - United States Bureau of Reclamation (USA)

If the Contractor, at any time and for any reason, wishes to deviate from the above standards or desires to use material or equipment not covered by the above standards, he shall state the exact nature of the changes, the reason for making the change and shall submit complete specifications of the materials and equipment to the Engineer for approval.

10. CONSTRUCTION SCHEDULE

Submittal Date

The programme of works submitted by the Contractor, in accordance with the contract, in the form of a detailed schedule based on a computerized network analysis covering all construction activities indicating critical activities with critical path resource scheduling for contractor's equipment material and labor within the period stated in the Appendix A to Tender. All the milestones shall be clearly identified.

☐ Requirements

The detailed submittal shall consist of schedule, network analysis tabulations and narrative descriptions of the proposed construction programme.

Each summary or detailed schedule shall consist of a bar chart and time scaled network. The schedule start and finish times for all activities on the bar charts shall agree with those in the network. All inter-relationships and inter-dependencies between structures shall be clearly

indicated on the schedules. The network shall show the order and interdependences of activities planned by the contractor and shall be time – scaled according to calendar dates.

□ **Monthly Reports.**

Each month the Contractor shall submit a report consisting of:

Copies of the bar charts for the current phase with both actual progress and scheduled progress shown.

Network analysis tabulations reflecting actual start date and finish dates where applicable.

A narrative report discussing any significant deviations from the schedule and, if necessary, explaining the steps proposed to be taken to maintain the approved schedule.

11. FACILITIES PROVIDED BY THE EMPLOYER

(Not Used)

12. CONSTRUCTION CAMPS AND COLONIES

Save insofar as the Contract otherwise provides, the Contractor shall provide and maintain such accommodation and amenities as he may consider necessary for all his supervisory staff and employed for the purposes of or in connection with the Contract including all fencing, electricity supply, sanitation, cookhouses, fire prevention, water supply and other requirements in connection with such housing accommodation or amenities. On completion of the Contract, these facilities shall be handed over to the Employer or if the Employer so desires, the temporary camps or housing provided by the Contractor shall be removed and the Site reinstated to its original condition, all to the approval of the Engineer.

The Contractor shall erect and maintain at the site in location to be approved by the Engineer 3 Sign Boards 8'x6' for painting the name of Work, name of client, name of consultants, name of Contractor and Project Cost on both sides. The notice board shall comprise of the following; Frame of 3" dia GI pipe properly painted as per direction of the Engineer. 2 Nos. Posts of 3" Dia GI Pipe 4' above ground and 4' below ground embedded in 1:2:4 cc 2'x2'x4' with proper arrangement of anchorage and brasses. 5 Nos. MS/Poly vinyl sheets 9" wide and 1 No. 12" wide, 8' long each fixed with the pipe frame with 3" gap between each strip. Background painted in white with synthetic enamel paint on both sides. Alphabets of appropriate size as approved by the Engineer in reflective paint. The Contractor shall make his own arrangements for providing the necessary space for the storage of plant, equipment and materials and for Contractor's temporary office, in and around the site of works, during the currency of the Contract.

13. OTHER FACILITIES FOR ENGINEER'S AND EMPLOYER'S PERSONNELS

The Contractor shall provide/arrange/manage a Site Office for the supervision team as per direction of the Employer. The said offices shall be fully furnished/equipped with fittings and fixtures like fans, AC units, furniture, utilities (including backup power i.e. Generator and/or Solar Plant), A3 size color printers with pages, refrigerator etc., as required by the Employer/Engineer. The Contractor shall also be responsible for the maintenance of the said office till end of the Defect Liability Period.

The Contractor shall also provide following facilities in the site offices of the Employer and the Engineer:

1. Monthly Mobile Communication Bill for the Engineer Staff of Rs. 10,000/=.
2. Internet connection for the Employer & The Engineer at site up to an average billing of Rs. 6,000/- per month,
3. 01 Brand new latest generation laptop Core i7/One (01) workstation including Computer (latest generation Core i7, minimum with 500 GB SSD, 16Gb Ram, 17" Flat Color monitor, etc.), flash drive (at least 8GB capacity) and an A3 size color printer, stationery for the Employer/Engineer.

4. 01 Nos. brand new latest generation laptop core i7 / Two (02) workstations including Computer / Laptop (latest generation Core I-7, minimum with 500 GB SSD, 16 Gb Ram, a DVD writer, 17” Flat Color monitor, etc.), flash drive (at least 8 GB capacity) and stationery for the use of the Employer and his/her staff.

The site office shall be connected to the electrical system, potable water supply system and sewage disposal system. The Contractor shall provide replacement of the equipment(s), if any of the above-mentioned equipment(s) is temporarily or permanently rendered unserviceable for any reason(s) or declared to be beyond repair by the Engineer/Engineer’s staff at no additional cost to the Employer. The Contractor shall also provide, operate and maintain the following on monthly rental basis within twenty-eight (28) days from the issuance of LOA by the Employer :

01 No. 1000 cc Vehicle latest model or equivalent for the employer/engineer with driver and maximum fuel limit of 300 liter/Month. (On Monthly Rental Basis)

1 Nos. Motorcycle (125CC), for the use of staff of Employer/Engineer with fuel limit of 50 Liter/month (On Monthly Rental Basis)

They shall furnish supply and provide, as may be necessary without specific direction of the Employer/Employer’s staff, all fuels, lubricants, tires and other supplies, all maintenance, repairs, comprehensive insurance cover and running costs and suitability qualified drivers at all times for running of vehicles and will provide a substitute vehicle in case of break down exceeding two days. The Contractor shall provide replacement vehicle if the vehicle is temporarily or permanently rendered unserviceable for any reason(s) or declared to be beyond repair by the Employer/ Employer’s representative at no additional cost to the Employer.

The said facilities shall be provided by the Contractor within twenty-eight (28) days from the issuance of LOA by the Employer or twenty-one (21) days of the payment of the first half of the Mobilization Advance, whichever earlier. The site facilities shall be maintained by the Contractor up to a period of three hundred sixty-five (365) days after the Issuance of Taking Over Certificate (DLP Period) by the Engineer.

In case above facilities are not provided within stipulated time, the Employer / Engineer may have the facilities developed/provisioned on their own and the actual expenditure will be deducted from the interim payment certificate submitted by the contractor. No payment shall be made to the Contractor for the facilities involved under this clause. The cost thereof shall be deemed to have been included in the price quoted by the Contractor for the works.

14. EQUIPMENT FURNISHED BY THE EMPLOYER

(Not Used)

15. COOPERATION WITH OTHER CONTRACTORS

It shall be the responsibility of the Contractor to keep-up good relations with other Contractors employed on site by the Employer. The Contractor shall cooperate and coordinate his work with that of the other Contractors working at the Site, to whatever extent may be necessary to complete the Project in accordance with the approved programme of the Works and in accordance with the Engineer’s instructions. Should a disagreement or dispute arise between the Contractor and other contractors, the same shall be referred without delay to the Engineer for his decision. Upon such decision, the Contractor shall proceed with the work in accordance therewith. In case the access to the works of other contractors is through the Site area of the Contractor, the Contractor shall coordinate with and permit all reasonable access to other Contractors.

16. SAFETY AND HEALTH

Due precautions shall be taken by the Contractor, and at his own cost, to ensure the safety of his staff and labor at all times throughout the period of the Contract. The Contractor shall further ensure that

suitable arrangements are made for the prevention of epidemics and for all necessary welfare and hygiene requirements

17. CONSTRUCTION UTILITIES

The Contractor shall search for, find, locate and protect any wiring, cable, duct, pipework, etc., within or immediately adjoining the site area.

The Contractor shall take full responsibility for safety of existing service lines, utilities and utility structures uncovered or encountered during excavation and construction operations. The Contractor shall take full responsibility for damaging any such service lines, utility/utility structure and any cost and/or expense that arises or issues from any such damage shall be borne directly by himself. Should any damage to any such service occur the Contractor shall forthwith take remedial action, initiate safety precautions, install temporary services and carryout repair all at his own cost and expense and inform the Engineer and notify all relevant authorities.

Existing utilities which are to remain in service for or after the works are to be determined by the Contractor. If any existing service lines, utilities and utility structures which are to remain in service are uncovered or encountered during these operations, they shall be safeguarded, protected from damage, and supported. The Contractor shall preserve, maintain and keep in perfect working conditions, any existing facilities required to be preserved by the Employer/the Engineer.

18. TRAFFIC, ROADS, BRIDGES

(Not Used)

19. ROCK QUARRIES

(Not Used)

20. FLOOD WARNING SYSTEM

No work is to be undertaken when, in the opinion of the Engineer, the weather is so unsuitable that proper protection of the work cannot be ensured.

Additionally, the Contractor shall be deemed to have taken all weather, flood, inundation, seismic, traffic, vibrations conditions, arising from any cause whatsoever, into account when preparing his Tender and he shall not be entitled to extra payment by reason of the occurrence or effect of excessive traffic vibrations, rain fall, floods, temperature or humidity, high winds, earthquakes or an, other heavier flood inundation, seismic or environmental conditions.

Without limiting his liabilities under the Contract, the Contractor shall make suitable arrangements to protect the works, Including temporary Works, and Constructional Plant against the effects of weather flood inundation seismic and traffic vibrations conditions.

No work shall be performed when; in the opinion of the Engineer such work is liable to be injuriously affected by the weather, flood, inundation seismic or traffic vibrations conditions. The Contractor shall not be entitled to extra payment on account of loss alleged to have been sustained directly or indirectly by reason of the Engineers declining to permit such work to start or continue or ordering any work damaged by the weather flood inundation seismic or traffic vibrations conditions to be made good or removed and re-executed.

The Contractor shall be responsible for obtaining and acting upon all relevant weather flood inundation and seismic information during the period of the Contract. The Contractor shall promptly supply copies of all-weather flood inundation and seismic forecasts to the Engineer.

21. ENVIRONMENTAL PROTECTION

The Contractor shall exercise care to protect the natural landscape and shall conduct his construction operations so as to prevent any unnecessary destruction, scarring or defacing of the natural surroundings in the vicinity of works. Except where clearing is required for the Permanent works, approved construction roads and the Temporary Works, and for excavation operations, all trees and native vegetation shall be preserved and shall be protected from damage which may be caused by the Contractor's construction operations and equipment. On completion of the works, all work areas shall be smoothed and graded in a manner to confirm to the natural appearance of the landscape. Where unnecessary destruction, scarring, damage or defacing may occur as a result of the Contractor's operations, it shall be repaired, replanted, or otherwise

22. STANDARDS OF COUNTRIES OTHER THAN ORIGIN *(Not Used)*

23. PROGRESS REPORTS AND PHOTOGRAPHS

During the continuance of the Contract, the Contractor shall submit weekly progress on forms as approved by the Engineer. Such weekly reports shall show the actual progress completed as of date of the report plotted against the schedule as given by the Contractor at the start of work and shall be broken down so as to indicate status of all activities associated with mobilization, design, material procurement, manufacture, surveys work, tests with regard to the agreed contract programme.

The Employer and the Engineer reserve the right to coordinate the schedules of this Contractor and other Contractors working at the Site, and to adjust and/or change any and all such schedules as required during the course of construction in order to achieve a coordinated project in harmony with the Employer's completion date.

Commencing after the first week of construction, and continuing every week until completion, the Contractor shall take and submit photographs to the Engineer's Representative, to show progress of his work and completion of each structure or major feature.

During the period of the Contract, the Contractor shall submit to the Engineer not later than the 8th day of the following month, 5 hard copies and soft editable format each of Monthly Progress Reports covering:

- A Construction Schedule indicating the monthly progress in percentage;
- Description of all work carried out since the last report;
- Description of the work planned for the next 56 days sufficiently detailed to enable the Engineer to determine his programme of inspection and testing;
- Monthly summary of daily job record;
- Photographs to illustrate progress; and
- Information about problems and difficulties encountered, if any, and proposals to overcome the same.

During the period of the Contract, the Contractor shall keep a daily record of the work progress, which shall be submitted to the Engineer at the end of each day. The daily record shall include particulars of weather conditions, number of men working, deliveries of materials, quantity, location and assignment of Contractor's equipment

As soon as work commences on Site, the Contractor shall provide at least 10 to 12 photographs (along with soft copy) of the works from positions to be selected by the Engineer. Each photographic print shall not be less than 297mm x 210mm and shall bear a printed description, a serial number and the date when taken.

The negatives /soft copy of all photographs shall be held at the Contractor's Site Office, numbered and handed over to the Employer at the completion of the Contract.

24. UNIT PRICE BREAKDOWN

The FPS System of Units shall be used throughout the Project.

25. TRANSPORT AND HANDLING OF CARGO

If, notwithstanding Sub-Clause 30.1 any damage occurs to any bridge or road communicating with or on the routes to the Site arising from the transport of materials or Plant, the Contractor shall notify the Engineer with a copy to the Employer, as soon as he becomes aware of such damage or as soon as he receives any claim from the authority entitled to make such claim.

The Employer shall not be liable for any costs, charges or expenses in respect of any damage occurs to any bridge or road arising from the transport of Material or Plant by the Contractor. The Contractor shall keep indemnified the Employer against all such claims. The Contractor shall negotiate the settlement of claim with the authority and pay all sums due in respect of all claims, proceeding, damages, costs, charges and expenses.

The Contractor shall notify the Engineer and Employer about the negotiations, in-respect of settlement of claim. In case of failure in payment of claimed amount by the Contractor, the Employer shall recover the amount of claim from the Contractor by making deduction from any monies due or to become due to the Contractor and shall notify the Contractor accordingly

26. DIRECTED AND REQUIRED

The Contractor shall whenever necessary cover up and protect the works from weather and damage by his own or other workmen performing subsequent operation. The Contractor shall provide all necessary dustsheets, barriers and guard rails and clear away the same at completion.

Upon completion of the works the Contractor shall restore all items covered by the Contract to the satisfaction of the Engineer.

The Contractor shall do regular cleaning and clear away all rubbish and excess materials that may accumulate from time to time on completion and before handing over.

Upon completion of the works, he shall obliterate all signs of temporary construction facilities such as work areas, structures, foundations of temporary structures, stock piles of excess or waste materials, or any other vestiges of construction, as directed by the Engineer. All buildings shall be cleaned; floors and paving scrubbed and the works and site shall be left in a clean and satisfactory state for immediate use and occupation. Care shall be taken not to use any cleaning materials, which may cause damage to the surface to be cleaned. The Contractor shall also take all necessary precautions to keep the works and site free from vermin during construction and he shall leave the works vermin free on completion. Application of pest control agents shall not commence until the specific product, name, method and extent of application have been submitted to and approved of by the Engineer.

27. COMMUNICATION TO THE ENGINEER

The Engineer shall be notified daily in writing of the nature and location of the Works the Contractor intends to perform the next day so as to enable necessary inspection and measurement to be carried out. The Engineer may, if necessary, direct that longer notice be given of certain operations.

28. ANY OTHER PROVISION

(Not Used)

29. MEASUREMENTS AND PAYMENTS

The measurement of the Works shall be performed on the basis of the Specifications. All work completed under the Contract shall be measured according to the metric system for all items, unless otherwise provided herein or in the Special Provisions. All longitudinal measurements for area or

volume will be made horizontally along the road center line, and no deduction will be made for individual fixtures in the pavement having an area of 1 sq. meter or less. All transverse measurements for area or volume of pavement courses will be made horizontally in accordance with the dimensions indicated on the plans, or the dimensions ordered by the Engineer. In computing volume of excavation, embankment and borrow material, the average end area method will be used. Where no items are provided in the Bill of Quantities for work required under the Contract, costs shall be deemed to be distributed among the quoted rates and prices entered for other items of work in the Bill of Quantities. The Work shall be measured net notwithstanding any general or local custom except where otherwise specifically described or prescribed in the Contract.



SPECIFICATIONS
PART B - TECHNICAL PROVISIONS

**FEDERAL GOVERNMENT EMPLOYEES HOUSING
AUTHORITY, ISLAMABAD
MINISTRY OF HOUSING AND WORKS**



**WATER CONNECTION WORKS
CONDITION OF CONTRACT**

TECHNICAL BID

**VOLUME-I
(SINGLE
STAGE TWO ENVELOPE)**

OCTOBER - 2025



EA Consulting Pvt Ltd

(Formerly Engineering Associates)

Engineering, Architecture & Project Management

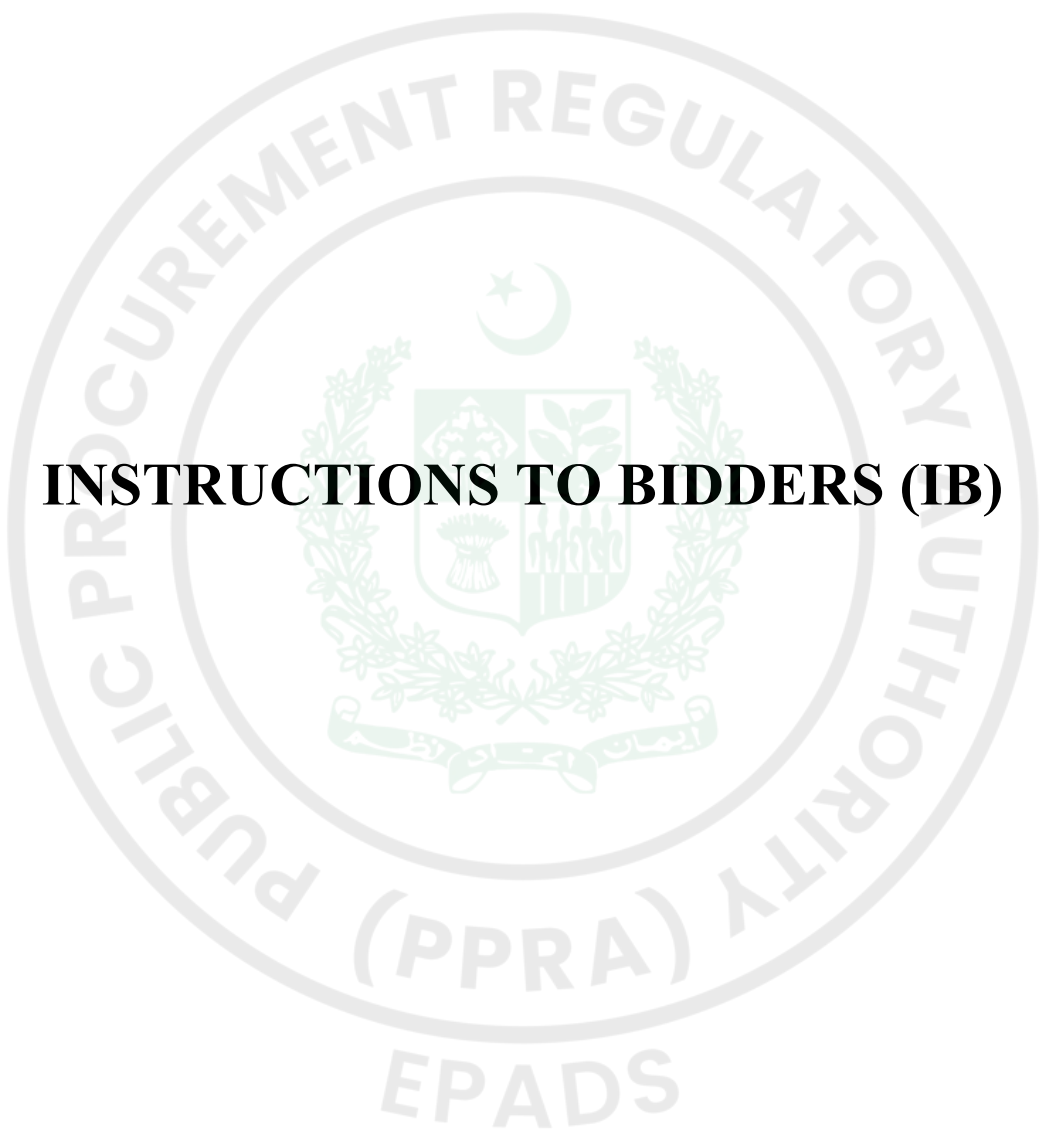
Head Office: AL-9, 15th Lane, Khayaban-e-Hilal,

Phase VII, D.H.A., Karachi-75500.,

Tel: UAN: 111-111-584, Fax: (021) 3584-1825

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INSTRUCTIONS TO BIDDERS (IB)

INSTRUCTIONS TO BIDDERS

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INSTRUCTIONS TO BIDDERS

(Note: These Instructions to Bidders along with Bidding Data will not be part of the Contract and will cease to have effect once the contract is signed.)

A. GENERAL

- | | | |
|-------------|-------------------------|--|
| IB.1 | Scope of Bid | <p>1.1 The Employer as defined in the Bidding Data hereinafter called “the Employer” wishes to receive bids for the construction and completion of works as described in these Bidding Documents, and summarized in the Bidding Data hereinafter referred to as the “Works”.</p> <p>1.2 The successful Bidder will be expected to complete the Works within the time specified in the Bidding Data.</p> |
| IB.2 | Source of Funds | <p>2.1 The Employer has applied for/received a funding from the source(s) in various currencies towards the cost of the project specified in the Bidding Data and it is intended that part of the proceeds of this funding will be applied to eligible payments under the Contract for which these Bidding Documents are issued.</p> |
| IB.3 | Eligible Bidders | <p>3.1 This Invitation for Bids is open to all Bidders meeting the following requirements at the time of submission of Bids and thereafter:</p> <ul style="list-style-type: none"> (a) Duly licensed by the Pakistan Engineering Council (PEC) in the category relevant to the value of the Works in the relevant field of specialization.
 <p>However, a Foreign Constructor can submit provisional license with its Bid but the Foreign Constructor will be required to submit standard license after award of Contract and before start of work.</p> <p>Foreign Constructor shall not be eligible to participate in bidding individually. Foreign Constructor shall enter into joint venture with Pakistani Constructor registered with the Pakistan Engineering Council in equivalent/comparable category and submit the joint venture agreement to the Employer before participating in bidding in accordance with PEC Construction and Operation of Engineering Works Bye-laws, 1987; Must be on Active Taxpayer List of the Federal Board of Revenue and provincial revenue authority/ SRB where applicable; and</p> (b) (c) All partners constituting the Bidder including proposed subcontractors do not appear in the list of debarred/ blacklisted firms and individuals on the websites of PEC and Federal & Provincial Procurement Regulatory Authorities and have not been declared debarred/ blacklisted by foreign country, international organizations or other foreign institutions. |

- IB.4 Eligible Materials, Equipment and Services**
- 4.1 All materials, equipment and services to be supplied under this Contract shall have their origin in eligible countries described under paragraph 4.4 hereunder.
- 4.2 For purpose of this Clause, “origin” means the place where the Goods are mined, grown or produced or from where the ancillary services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembling of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 4.3 The origin of Goods and Services is distinct from the nationality of the Bidder.
- 4.4 Eligible countries to participate in this bidding process are those which have been notified by Ministry of Interior, Government of Pakistan as Business-Friendly Countries (BVL); information can be accessed through following link:
<http://www.dgip.gov.pk/Files/Visa%20Categories.aspx#L>
- IB.5 One Bid per Bidder**
- 5.1 Each Bidder shall submit only one Bid either by himself, or as a partner in a joint venture. A Bidder who submits or participates in more than one Bid (other than alternatives pursuant to Clause IB.17) will be disqualified.
- IB.6 Site Visit**
- 6.1 The Bidders are advised to visit and examine the Site of Works and its surroundings and obtain for themselves on their own responsibility all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. All cost in this respect shall be at the Bidder’s own expense.
- 6.2 The Bidders and any of their personnel or agents will be granted permission by the Employer to enter upon his premises and lands for the purpose of such inspection, but only upon the express condition that the Bidders, their personnel and agents, will release and indemnify the Employer, his personnel and agents from and against all liability in respect thereof and will be responsible for death or personal injury, loss of or damage to property and any other loss, damage, costs and expenses incurred as a result of such inspection.

B. BIDDING DOCUMENTS

- IB.7 Contents of Bidding Documents**
- 7.1 The Bidding Documents, in addition to Invitation for Bids, are those stated below and should be read in conjunction with any Addenda issued in accordance with Clause IB.9:

1. Instructions to Bidders;
2. Bidding Data;
3. Evaluation Criteria and Qualification Updating Forms;
4. General Conditions (GC);
5. Particular Conditions (PC):
 - Part A - Contract Data;
 - Part B - Special Provisions;
6. Specifications (SP):
 - Part A - Specific Provisions;
 - Part B - Technical Provisions;
7. Letter of Bid;
8. Schedules to Bid;
9. Standard Forms:
 - (i) Form of Bid Security;
 - (ii) Letter of Acceptance;
 - (iii) Form of Contract Agreement;
 - (iv) Form of Performance Security;
 - (v) DAAB Agreement;
 - (vi) Form of Mobilization Advance Guarantee;
10. Drawings.

7.2 The Bidders are expected to examine carefully the contents of all the above documents. Failure to comply with the requirements of Bid submission will be at the Bidder's own risk. Pursuant to Clause IB.26, bids which are not substantially responsive to the requirements of the Bidding Documents will be rejected.

IB.8 Clarification of Bidding Documents, Pre-Bid Meeting

- 8.1 Any prospective Bidder requiring any clarification(s) in respect of the Bidding Documents may notify the Employer in writing at the Employer's address indicated in the Invitation for Bids. The Employer will respond to any request for clarification which he receives earlier than the period specified in the **Bidding Data**, prior to the deadline for submission of bids.
- 8.2 Copies of the Employer's response will be forwarded to all purchasers of the Bidding Documents, including a description of the enquiry but without identifying its source.
- 8.3 The Employer may, on his own or at the request of any prospective Bidder(s), hold a pre-bid meeting to clarify issues and to answer any questions on matters related to the Bidding Documents. The date, time and venue of pre-bid meeting, if convened, are as stipulated in the **Bidding Data**. All prospective Bidders or their authorized representatives shall be invited to attend such a pre-bid meeting.
- 8.4 The Bidders are requested to submit questions, if any, in writing so as to reach the Employer not later than seven (7) days before the proposed pre-bid meeting.

8.5 Minutes of the pre-bid meeting, including the text of the questions raised and the replies given, will be transmitted without delay to all purchasers of the Bidding Documents. Any modification of the Bidding Documents listed in Sub-Clause IB.7.1 hereof which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause IB.9 and not through the minutes of the pre-bid meeting.

8.6 Absence at the pre-bid meeting will not be a cause for disqualification of a Bidder.

IB.9 Amendment of Bidding Documents

9.1 At any time prior to the deadline for submission of bids, the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by issuing addendum. Any addendum thus issued shall be part of the Bidding Documents listed in Sub-Clause IB.7.1 hereof and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective Bidders shall acknowledge receipt of each addendum in writing to the Employer.

9.2 Documents listed in Sub-Clause IB.7.1 hereof and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective Bidders shall acknowledge receipt of each addendum in writing to the Employer.

9.3 Such addendum shall be issued not later than number of days prior to the deadline for submission of bids, specified in the **Bidding Data**. To afford prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may extend the deadline for submission of bids in accordance with Clause IB.20.

C. PREPARATION OF BIDS

IB.10 Cost of Bidding

10.1 ~~The~~ Bidders shall bear all costs associated with preparation and submission of their respective bids and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

IB.11 Language of Bid

11.1 The Bid and all correspondence and documents related to the Bid exchanged by a Bidder and the Employer shall be in the Bid language stipulated in the **Bidding Data** and Particular Conditions of Contract. Supporting documents and printed literature furnished by the Bidders may be in any other language provided the same are accompanied by duly certified translation of the relevant parts in the Bid language, in which case, for purposes of evaluation of the bid, the translation in Bid language shall prevail.

IB.12 Documents Comprising the Bid

12.1 Each Bidder shall:

- (a) submit duly filled in, signed and stamped Letter of Bid and completed Schedules to Bid as required, including priced Bill of Quantities, in accordance with Clause IB.18 hereof;

- (b) submit Bid Security in accordance with Clause IB.16 hereof;
- (c) submit alternative proposal, if permissible in accordance with Clause IB.17;
 - (d) Submit a written power of attorney authorizing the signatory of the Bid to act for and on behalf of the Bidder. The name and position held by each person signing the authorization must be typed or printed below the signature;
- (e) submit the Qualification Updating Forms duly filled in, signed and stamped along with requisite attachments, to establish that the Bidder continues to meet the Eligibility and Qualification Criteria set out in the Section “Evaluation Criteria and Qualification Updating Forms”; furnish a technical proposal taking into account the various Schedules to Bid, especially the following:
 - (f) Schedule-C to Bid, Proposed Construction Schedule;
 - Schedule-D to Bid, Method of Performing the Work;
 - Schedule-E to Bid, List of Major Equipment;
 - Schedule-F to Bid, Organization Chart for Supervisory Staff;
 and other pertinent information, such as mobilization programme, etc.

12.2 Bids submitted by a joint venture of two (2) or more firms specified in **Bidding Data**, shall comply with the following requirements:

- (a) the bid, and in case of a successful bid, the Form of Contract Agreement shall be signed by all members so as to be legally binding on all partners;
- (b) one of the joint venture partners shall be nominated as being in-charge; and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the joint venture partners;
- (c) the partner-in-charge shall always be duly authorized to deal with the Employer regarding all matters related with and/or incidental to the execution of Works as per the terms and Conditions of Contract and in this regard to incur any and all liabilities, receive instructions, give binding undertakings and receive payments on behalf of the joint venture;
- (d) all partners of the joint venture shall at all times and under all circumstances be liable jointly and severally for the execution of the Contract in accordance with the

Contract terms and a statement to this effect shall be included in the authorization mentioned under Sub-Para(b) above as well as in the Letter of Bid and in the Form of Contract Agreement (in case of a successful bid); and

- (e) a copy of the agreement entered into by the joint venture partners shall be submitted with the bid stating the conditions under which it will function, its period of duration, the persons authorized to represent and obligate it and which persons will be directly responsible for due performance of the Contract and can give valid receipts ~~on behalf of the joint venture~~ participation and corresponding duties & responsibilities of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning. No amendments/ modifications whatsoever in the joint venture agreement shall be agreed to between the joint venture partners without prior written consent of the Employer.

12.3 Bidders shall also submit proposals of work methods and schedule, in sufficient detail to demonstrate the adequacy of the Bidders' proposals to meet the technical specifications and the completion time referred to in Sub-Clause IB.1.2 hereof.

IB.13 Bid Prices

13.1 The price and discount if any quoted by the Bidders in the Letter of Bid and in the Bill of Quantity shall conform to the requirement specified below:

13.2 The Bidder shall quote any discounts and the methodology for their application.

13.3 If bids are being invited for individual lots (contracts) or for any combination of lots, the Bidders can offer discounts for the individual lots (contracts) as well as for award of more than one Contract and shall specify in their bid.

13.4 Unless stated otherwise in the Bidding Documents, the Contract shall be for the whole of the Works as described in Sub-Clause IB.1.1 hereof, based on the unit rates and/or prices.

13.5 The Bidders shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by a Bidder will not be paid for by the Employer when executed and shall be deemed covered by rates and prices for other items in the Bill of Quantities.

13.6 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to the deadline for submission of bids shall be included in the rates and prices and the total Bid Price submitted by a Bidder.

Additional/reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed/deducted as per Sub Clause 13.6 [*Adjustment for Changes in Laws*] of the Conditions of Contract.

- 13.7 The rates and prices quoted by the Bidders are subject to adjustment during the performance of the Contract in accordance with the provisions of Sub-Clause 13.7 [*Adjustments for Changes in Cost*] of the General Conditions of Contract. The Bidders shall furnish the prescribed information for the price adjustment formulae in Schedule-A to Bid, and shall submit with their bids such other requisite supporting information if required under the said Schedule. The unit rates and the prices shall be quoted by the Bidder entirely in Pak Rupee and shall be paid accordingly in same currency.

IB.14 Currencies of Bid and Payment

- 14.1 A Bidder expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Employer's country (referred to as their "Foreign Currency Requirements") shall indicate in Table III of Schedule-A to Bid the proportion of the Bid Price (excluding Provisional Sums) needed by him for the payment of such Foreign Currency Requirements; in such case the unit rates and the prices shall be quoted by the Bidder in Equivalent PKR. The rates of exchange to be used by the Bidder for currency conversion shall be the 1% Selling Rates published or authorized by the State Bank of Pakistan prevailing on the date twenty-eight (28) days prior to the deadline for submission of bids. Such rates shall be notified by the Employer not later than fourteen (14) days prior to the deadline for submission of bids. For the purpose of payments, the exchange rates used in Bid preparation shall apply for the duration of the Contract.
- 14.2 The rates of exchange to be used by the Bidder for currency conversion shall be the 1% Selling Rates published or authorized by the State Bank of Pakistan prevailing on the date twenty-eight (28) days prior to the deadline for submission of bids. Such rates shall be notified by the Employer not later than fourteen (14) days prior to the deadline for submission of bids. For the purpose of payments, the exchange rates used in Bid preparation shall apply for the duration of the Contract.

IB.15 Bid Validity

- 15.1 Bids shall remain valid for the period stipulated in the **Bidding Data** after the date of Bid Opening specified in Clause IB.23.
- 15.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request that the Bidders extend the period of validity for a specified additional period which normally may not be more than the original bid validity period. The request and the responses thereto shall be made in writing. A Bidder may refuse this request of the Employer without his Bid Security being forfeited. A Bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his Bid Security for the period of the extension, and in compliance with Clause IB.16 in all respects.

IB.16 Bid Security

16.1 Each Bidder shall furnish, as part of his bid, a Bid Security in original form in the amount stipulated in the **Bidding Data** in PKR.

16.2 The Bid Security shall be in the form of Call Deposit Receipt (CDR) / Pay Order issued by a Scheduled Bank in Pakistan in favor of the Employer valid for a period 14 days beyond the Bid Validity date.

Bid validity date.

Bid Price (In Eq. million PKR)	Minimum Rating of Insurance Companies
Up to 1000	A (+)
1001 to no limit	AA

16.3 Any Bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.

16.4 The Bid Securities of the Bidders except the lowest, will be returned by the Employer within twenty-eight (28) days from the opening of Bids, provided a Bidder request for the return of its Bid Security, or upon the expiry of original validity of Bid Security or as extended, whichever is earlier.

16.5 The Bid Security of the lowest / successful Bidder will be returned when the successful Bidder has furnished the required Performance Security.

16.6 The Bid Security may be forfeited:

- (a) if the Bidder withdraws his bid except as provided in Sub Clause IB.22.1;
- (b) if the Bidder does not accept the correction of his Bid Price pursuant to Sub Clause IB.28.2 hereof; or
- (c) in the case of successful Bidder, fails to furnish the required Performance Security.

16.7 In case of annulment, all Bids submitted and specially, Bid securities, shall be returned to the Bidders within 14 days of annulment.

IB.17 Alternative Proposals by Bidder

17.1 Unless otherwise specified in the **Bidding Data**, alternative proposal(s) shall not be considered.

17.2 Should any Bidder consider that he can offer any advantages to the Employer by a modification to the designs, specifications or other conditions, he may, in addition to his Bid to be submitted in strict compliance with the Bidding Documents, submit any alternative proposal(s) containing (a)

relevant design calculations; (b) technical specifications; (c) proposed construction methodology; and (d) any other relevant details/conditions, provided always that the total sum entered on the Letter of Bid shall be that which represents complete compliance with the Bidding Documents.

17.3 Alternative proposal(s), if any, of the Bidder having submitted most advantageous Bid only may be considered by the Employer as the basis for the award of Contract to such Bidder.

IB.18 Format and Signing of Bid

18.1 Bidders are particularly directed that the amount entered on the Letter of Bid shall be for performing the Contract strictly in accordance with the Bidding Documents.

18.2 All Schedules to Bid are to be properly completed and signed.

18.3 No alteration is to be made in the Letter of Bid nor in the Schedules thereto except in filling up the blanks as directed. If any such alterations be made or if these instructions be not fully complied with, the Bid may be rejected.

18.4 Each Bidder shall prepare by filling in the forms completely and without alterations one (1) original and number of copies, specified in the **Bidding Data**, of the documents comprising the Bid as described in Clause IB.12 and clearly mark them “ORIGINAL” and ‘COPY” as appropriate. In the event of discrepancy between them, the original shall prevail.

The Bidder shall also provide complete searchable PDF versions as well as Word, Excel, etc., versions of the Bid if so required in the **Bidding Data**.

18.5 The original of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder pursuant to Sub-Clause IB.12.1(d) hereof. All pages of the Bid shall be initialed and stamped by the person or persons signing the bid.

18.6 The Bid shall contain no alterations, omissions or additions, except to comply with instructions issued by the Employer, or as are necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.

18.7 Bidders shall indicate in the space provided in the Letter of Bid their full and proper addresses at which notices may be legally served on them and to which all correspondence in connection with their bids and the Contract is to be sent.

18.8 Bidders should retain a copy of the Bidding Documents and the Bid as their file copy.

18.9 All documents executed outside Pakistan are required to be submitted with the Bid and to be certified by Pakistani Embassy in the respective country (ies) or the respective country (ies).

Not Applicable

D. SUBMISSION OF BIDS

IB.19 Sealing and Marking of Bids

19.1 Each Bidder shall submit his Bid as under:

- (a) ORIGINAL and each copy of the Bid shall be separately sealed and put in separate envelopes and marked as such.
- (b) The envelopes containing the ORIGINAL and copies will be put in one sealed envelope and addressed / identified as given in Sub Clause IB.19.2 hereof.

19.2 The inner and outer envelopes shall:

- (a) be addressed to the Employer at the address provided in the **Bidding Data**;
- (b) bear the specific identification of this bidding process as specified in the **Bidding Data**; and
- (c) Provide a warning not to open before the time and date for bid opening, as specified in the **Bidding Data**.

19.3 In addition to the identification required in Sub-Clause IB.19.2 hereof, the inner envelope shall indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it is declared “late” pursuant to Clause IB.21.

19.4 If the outer envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

IB.20 Deadline for Submission of Bids

20.1 (a) Bids must be received by the Employer at the address specified no later than the time and date stipulated in the **Bidding Data**.

- (b) Bids with charges payable will not be accepted, nor will arrangements be undertaken to collect the bids from any delivery point other than that specified above. Bidders shall bear all expenses incurred in the preparation and delivery of Bids. No claims will be entertained for refund of such expenses.

- (c) Where delivery of a Bid is by mail and the Bidder wishes to receive an acknowledgment of receipt of such Bid, he shall make a request for such acknowledgment in a separate letter attached to but not included in the sealed Bid envelope.

- (d) Upon request, acknowledgment of receipt of Bids will be provided to those making delivery in person or by messenger.

20.2 The Employer may, at his discretion, extend the deadline for submission of Bids by issuing an amendment in accordance with Clause IB.9, in which case all rights and obligations of the Employer and the Bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

IB.21 Late Bids

- 21.1 (a) Any Bid received by the Employer after the deadline for submission of bids prescribed in Clause IB.20 shall be declared late, rejected and returned unopened to such Bidder.
- (b) Delays in the mail, delays of person in transit, or delivery of a Bid to the wrong office shall not be accepted as an excuse for failure to deliver a Bid at the proper place and time. It shall be the Bidder's responsibility to determine the manner in which timely delivery of his Bid will be accomplished either in person, by messenger or by mail.

IB.22 Modification, Substitution and Withdrawal of Bids

- 22.1 Any Bidder may modify, substitute or withdraw his Bid after Bid submission provided that the modification, substitution or written notice of withdrawal is received by the Employer prior to the deadline for submission of bids.
- 22.2 The modification, substitution, or notice for withdrawal of any Bid shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause IB.19 with the outer and inner envelopes additionally marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL" as appropriate.
- 22.3 No Bid may be modified by a Bidder after the deadline for submission of Bids except in accordance with Sub Clauses IB.22.1 and 28.2.
- 22.4 Withdrawal of a Bid during the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified in the Letter of Bid may result in forfeiture of the Bid security in pursuance to Clause IB.16.

E. BID OPENING AND EVALUATION**IB.23 Bid Opening**

- 23.1 The Employer will open the Bids including withdrawals, substitution and modifications made pursuant to Clause IB.22, in the presence of Bidders' representatives who choose to attend, at the time, date and location stipulated in the **Bidding Data**. The Bidders' representatives who are present shall sign a register evidencing their attendance.
- 23.2 Envelopes marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL" shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause IB.22 shall not be opened. Only bids that are opened and read out at Bid opening shall be considered further.
- 23.3 The Bidder's name, total Bid Price and price of any alternative proposal(s), any discounts, Bid modifications, substitution and withdrawals, the presence or absence of Bid security, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening of Bids. Only discounts and alternative proposals

read out at Bid opening shall be considered for evaluation. The Letter of Bid and the Summary Bill of Quantities are to be initialed by representative(s) of the Employer attending Bid

opening. The Employer shall neither discuss the merits of any Bid nor reject any Bid (except for late Bids, in accordance with Sub-Clause IB.21.1).

23.4 The Employer shall prepare minutes of the Bid opening, including the information disclosed to those present in accordance with the Sub-Clause IB.23.3.

IB.24 Process to be Confidential

24.1 Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of Contract shall not be disclosed to Bidders or any other person not officially concerned with such process before the announcement of the result of Bid evaluation in the form of final evaluation report giving justification for acceptance or rejection of Bids which shall be done at least fifteen (15) days prior to award of Contract. The announcement to all Bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the Bids evaluated. Any effort by a Bidder to influence the Employer's processing of Bids or Contract award decisions may result in the rejection of such Bidder's Bid. Whereas any Bidder feeling aggrieved may lodge a written complaint not later than five (5) days after the announcement of the final evaluation report.

IB.25 Clarification of Bids

25.1 To assist in the examination, evaluation and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdowns of unit rates and lump sum prices. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The request for clarification and the response shall be in writing. No change in the price or substance of the Bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids in accordance with Clause IB.28.

25.2 The Employer may, at his discretion, ask any Bidder for confirmation/submission of missing information to clarify its Bid. However, the Employer does not have an obligation to request any additional information or clarification with respect to missing or deficient information in a Bid. The Employer may reject any Bid as non-responsive if found materially incomplete, obscure, irregular or omitting any material information required to be submitted in accordance with the Bidding Documents.

25.3 If a Bidder does not provide clarifications of its Bid by the date and time set reasonably (not less than seven (7) days) in the Employer's request for clarification, the Employer may proceed with the evaluation based on the information submitted in the Bid without waiting for the Bidder's response.

IB.26 Examination of Bids and Determination of Responsiveness 26.1 Prior to the comparison of Bids, the Employer will determine whether each Bid is substantially responsive to the requirements of the Bidding Documents.

26.2 The Employer's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, as defined in Sub- Clause IB.12.

26.3 A substantially responsive Bid is one which meets the requirements of the Bidding Documents, without material deviation, reservation or omission. A material deviation, reservation or omission is one that,

(a) if accepted, would:

- (i) affect in any substantial way the scope, quality or performance of the Works; or
- (ii) limit in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the Bidder's obligations under the proposed Contract; or

(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.

26.4 During the evaluation of Bids, the following definitions apply:

(a) "Deviation" is a departure from the requirements specified in the Bidding Documents;

(b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents; and

(c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Documents.

26.5 The Employer shall examine the technical aspects of the Bid submitted in accordance with Sub-Clause IB.12.1(f), in particular, to confirm that all requirements stated in Specifications have been met without any material deviation, reservation or omission.

26.6 If a Bid is not substantially responsive to the requirements of the Bidding Documents, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation, reservation or omission.

IB.27 Nonmaterial Nonconformities

27.1 Provided that a Bid is substantially responsive, the Employer may waive any nonconformities in the Bid.

27.2 Provided that a Bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Bid related to documentation requirements. Requesting information or

documentation on such nonconformities 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.

27.3 Provided that a Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component, by adding the average price of the item or component quoted by other lowest two evaluated substantially responsive Bidders. If the price of the item or component cannot be derived from the price of other substantially responsive Bids, the Employer shall use a suitable CSR, adjusted to the date 28 days earlier to the Bid submission date or its best assessment.

IB.28 Correction of Arithmetic Errors

28.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

- (a) where there is a discrepancy between the amounts in figures and in words, the amount in words will govern.
- (b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Employer there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line item total as quoted will govern and the unit rate will be corrected.
- (c) 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.

28.2 The amount stated in the Letter of Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected Bid Price, his Bid will be rejected, and the Bid security shall be forfeited in accordance with Sub Clause IB.16.6(b) hereof.

IB.29 Evaluation and Comparison of Bids

29.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause IB.26. The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.

29.2 In evaluating and comparing the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:

- (a) making any correction for arithmetic errors pursuant to Clause IB.28;

- (b) price adjustment due to discounts offered in accordance with Sub-Clause IB.23.3;
- (c) excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including competitively priced daywork;
- (d) making an appropriate price adjustment for any quantifiable nonmaterial nonconformities in accordance with Sub-Clause IB.27.3; and
- (e) the additional evaluation factors are specified in Section Evaluation Criteria and Qualification Updating Forms.

29.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bids' comparison.

IB.30 Abnormally Low Bids

30.1 If the Bid Price of the successful Bidder is more than 15% below the lower of the Employer's estimate of the cost of work to be performed under the Contract or average of other lowest two evaluated substantially responsive Bids, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer may require an additional Performance Security by 10% of the difference of the Bid Price as determined hereinabove up to issuance of Taking Over Certificate at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract. The Bids having Bid Price lower than 25% shall be liable to be rejected.

IB.31 Unbalanced or Front Loaded Bids

31.1 If the Bid of the successful Bidder is seriously unbalanced (Front Loaded) in relation to the average of other evaluated substantially responsive Bids, the Employer during execution of contract may pay against measured quantities of significantly higher quoted line item(s) rate(s) with respect to same line item(s) rate(s) determined from the average of other lowest two evaluated substantially responsive Bids as instructed by the Engineer. The balance line item(s) rate(s) may be paid against the same measured quantities at the time of issuance of Taking Over Certificate or as instructed by the Engineer.

F. AWARD OF CONTRACT

IB.32 Award Criteria

32.1 Subject to Clauses IB.33 and IB.39, the Employer will award the Contract to the Bidder who's Bid has been determined as most advantageous Bid (substantially responsive to requirements of the Bidding Documents with the lowest evaluated Bid Price).

**IB.33 Employer's
Right to Annul
the Bidding
Process**

33.1 Notwithstanding Clause IB.32, the Employer reserves the right to annul the bidding process and reject all Bids, at any time prior to award of Contract, without thereby incurring any liability to the affected Bidders or any obligation.

The Employer shall upon request communicate to any Bidder who submitted a Bid, the grounds for its rejection of all Bids but is not required to justify those grounds. Rejection of all Bids shall be notified to all Bidders promptly.

**IB.34 Notification of
Award**

34.1 Prior to expiration of the period of Bid validity prescribed by the Employer, the Employer will notify the successful Bidder in writing ("Letter of Acceptance") that his Bid has been accepted. This letter shall name the sum which the Employer will pay the Contractor in consideration of the execution and completion of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called the "Accepted Contract Amount").

The Letter of Acceptance will also state the remedies with respect to Sub-Clauses IB.30 & IB.31 if applicable.

34.2 No negotiation with the Bidder having submitted most advantageous Bid or any other Bidder shall be permitted, however, Employer may have clarification meetings before issuing Letter of Acceptance to get clarified any item in the Bid evaluation report.

34.3 The Letter of Acceptance/ notification of award and its acknowledgement/acceptance by the Bidder will constitute the formation of the Contract, binding the Employer and the Bidder till signing of the formal Contract Agreement.

34.4 Upon furnishing by the successful Bidder of a Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful and return their Bid securities in accordance with Sub-Clause IB.16.5.

**IB.35 Performance
Security**

35.1 The successful Bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Conditions of Contract and additional Performance Security if applicable under IB.30 as stated in the Letter of Acceptance, within a period of 28 days after the receipt of Letter of Acceptance.

35.2 Failure of the successful Bidder to comply with the requirements of Sub Clause IB.35.1 or Clauses IB.36 or IB.37 shall constitute sufficient grounds for the annulment of the award, forfeiture of the Bid security and to award the Contract to the Bidder having submitted next advantageous Bid.

**IB.36 Signing of
Contract
Agreement**

36.1 Within 14 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Employer will notify the successful Bidder to depute its representative with appropriate Power of Attorney to sign the Contract Agreement in the form provided in the Bidding Documents, incorporating all agreements between the parties.

36.2 The formal Agreement between the Employer and the successful Bidder shall be executed within 14 days of the receipt of the above stated notification by the successful Bidder from the Employer.

IB.37 Integrity Pact

37.1 The Bidder shall sign and stamp the Integrity Pact provided at Schedule-J to Bid in the Bidding Documents for all Federal Government procurement contracts exceeding PKR ten million. Failure to provide such Integrity Pact shall make the Bidder non-responsive.

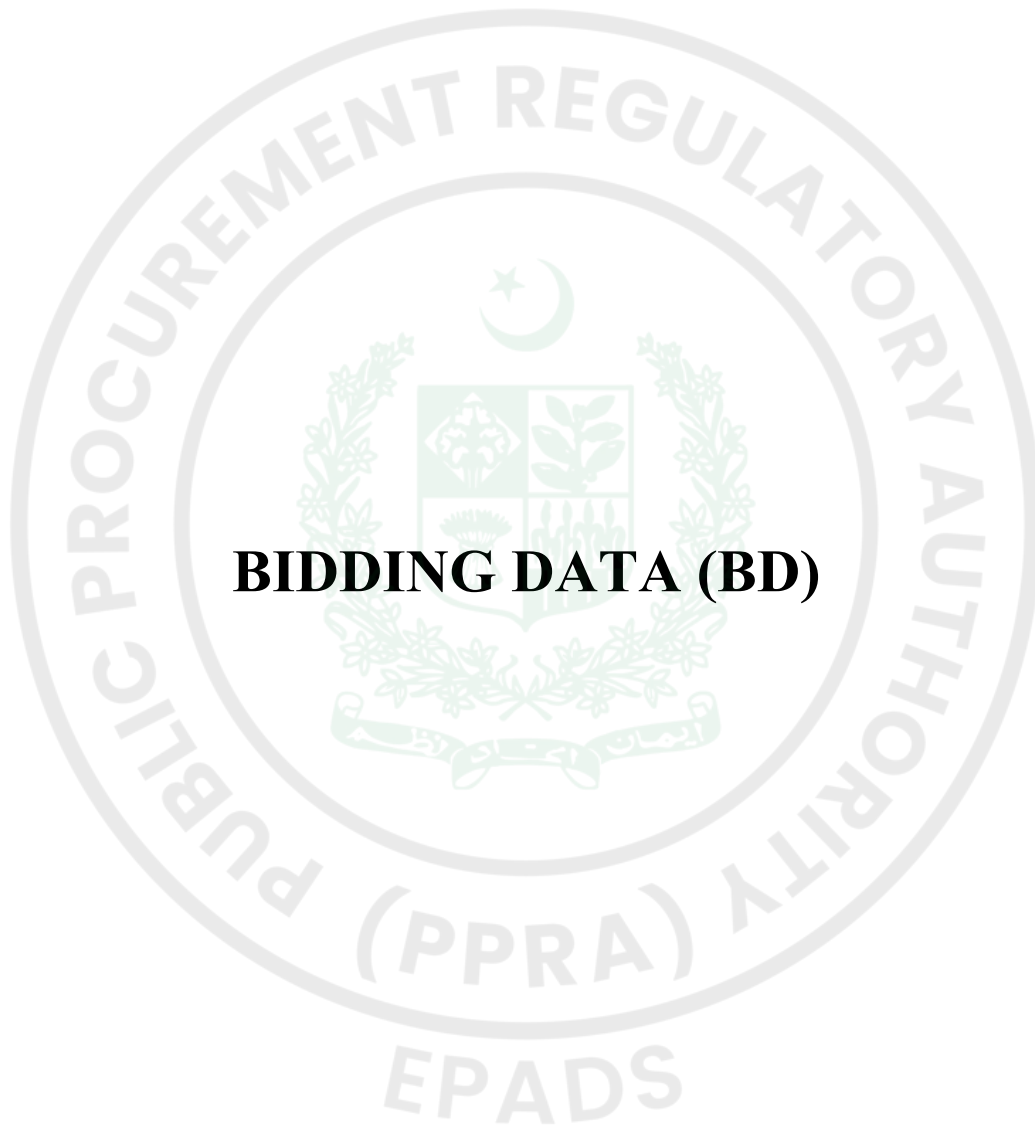
**IB.38 Instructions
not Part of
Contract**

38.1 Bids shall be prepared and submitted in accordance with the Instructions to Bidders which are provided to assist the Bidders in preparing Bids but do not constitute part of the Contract.

**IB.39 Corrupt and
Fraudulent
Practices**

39.1 The Employer will reject a Bid if it determines that the Bidder recommended for award, or any of its personnel, or its agents, or its sub-contractors, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract under this bidding.

39.2 The Employer will blacklist and hence forthwith debar a Constructor or individual, at any time, in accordance with the prevailing Public Procurement Rules 2004.

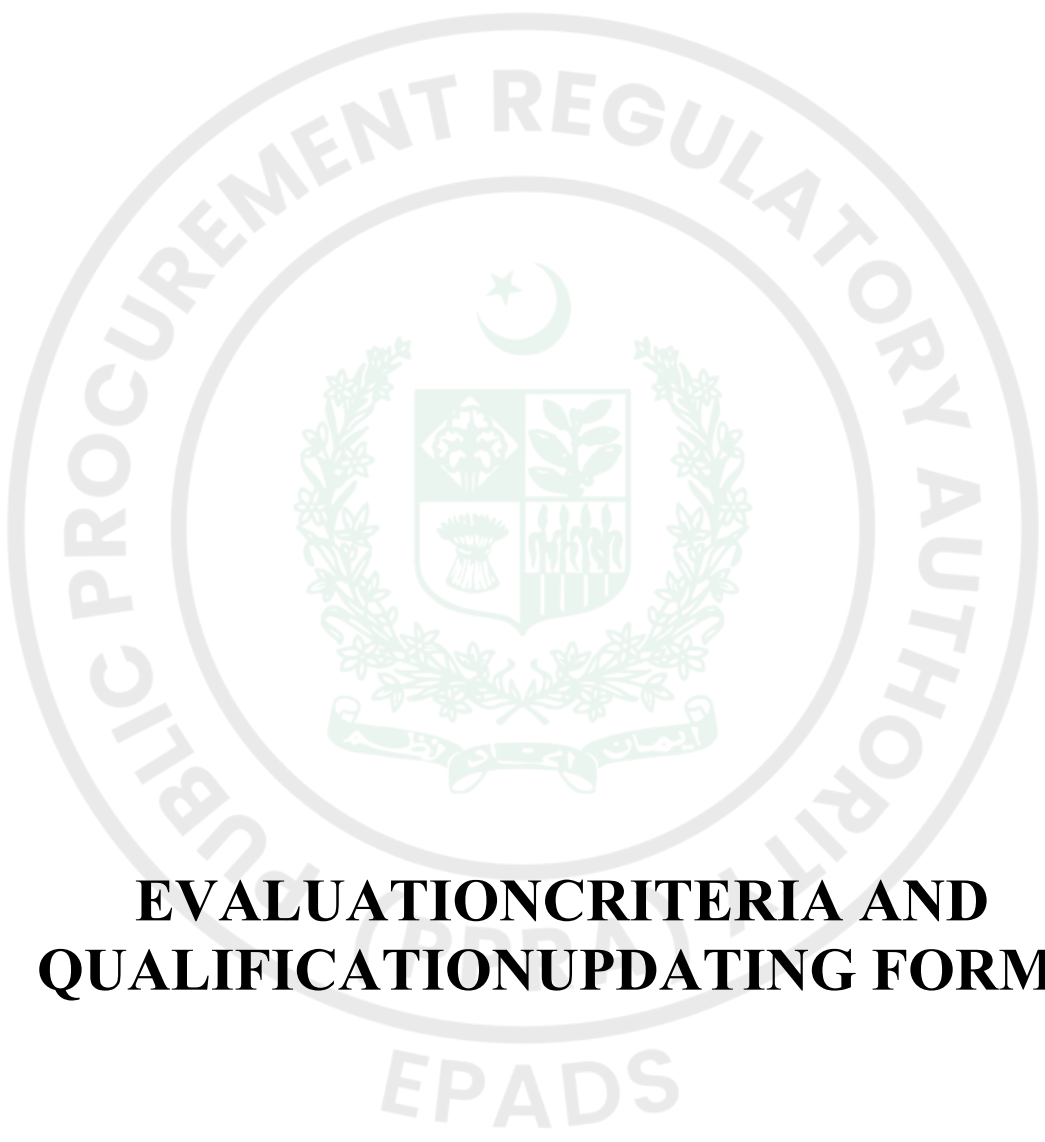


BIDDING DATA

IB Clause Reference	Bidding Data
1.1	Name and address of the Employer: Director General Federal Government Employees Housing Authority, Islamabad Address: Project Director, Federal Government Employees Housing Authority, Karachi 2nd Floor Working Women's Hostel, Opposite Garden Police Headquarter Aga Khan III Road, Karachi
1.1	Name of the Project & Summary of the Works: Water Connection Works of Sector 4C, 18C, 19C, 24B & 25B At KDA Scheme-33, Gulzar-E-Hijri, Karachi. The Work under this Contract Package comprises of “ Summary of Works: - Water Connection Work of - Sector 24B and 25B - Sector 4-C - Sector 18-C - Sector 19-C
1.2	Time for Completion for the Works: <u>180</u> Calendar Days
2.1	Name of the Borrower/Source of Funding: Self-Financed Scheme (The Employer has sufficient funds of its own to cover the cost of the entire project for which these bidding documents are issued.)
3.1	Foreign Constructors are not allowed
8.1	Time limit for clarification: <u>7 days prior to submission of bids.</u>
8.3	Venue, time, and date of the pre-Bid meeting: Project Director Office, Federal Government Employees Housing Authority, Karachi 2nd Floor Working Women's Hostel, Opposite Garden Police Headquarter Aga Khan III Road, Karachi <i>on the date as stated in the NIT.</i>
9.3	Number of days: Five (05)
11.1	Bid language: ENGLISH
12.2	Not Applicable
14.1	Bidders to quote entirely in Pakistan Rupees (PKR)

15.1	Period of Bid Validity: 120 days after the deadline for bids submission.
16.1	Amount of Bid Security: The Bid Security shall be for a fixed amount of Rupees 1,504,140/= . The ORIGINAL Bid Security must be submitted to the procuring agency any time before the closing time of bid submission, failing which the bid shall be rejected. The Bid Security in the form of Call Deposit Receipt (CDR) / Pay Order / Demand Draft issued by a Scheduled Bank in Pakistan in favor of the Employer valid for a period 28 days beyond the Bid Validity date.
16.2	List of Insurance Companies: <i>(Not Applicable)</i>
17.1	Alternative Proposal(s) by the Bidder shall not be considered.
18.4	Number of copies of the Bid to be completed and returned: Each Bidder shall prepare by filling in the forms completely and without alterations. The bid, properly filled in, must be submitted ONLY through e-Pak Acquisition & Disposal System (EPADS) at or before deadline mentioned in the NIT. The bid will be opened promptly thereafter in public and in the presence of bidders' representatives who choose to attend in the opening at the (address) _____
19.1	Submission of Bids: The original Technical and Financial bid, properly filled in, must be submitted ONLY through e-Pak Acquisition & Disposal System (EPADS) at or before deadline as mentioned in invitation to bids. The Technical bids will be opened promptly thereafter in public and in the presence of bidders' representatives who choose to attend in the opening at the _____.
19.5	The Bidder shall submit with its Technical Bid the following documents (a) Original Bid Security as per 16.1 and 16.2 (b) - Conditions of Contract (c) Specification- (Part A – Specific Provisions) (d) Proposed Construction Schedule (appendix –C-1) (e) Method of Performing the Work (appendix –D-1) (f) Availability of Critical Equipment (appendix –E-1 to 3) (g) Construction Camp and Housing Facilities (appendix –I-1) (h) List of Sub-contractors (as required) (appendix –G-1) (i) Organization Chart for Supervisory Staff (appendix –F-1) (j) Integrity Pact (appendix –J-1) The Bidder shall submit with its Financial (Price) Bid the following documents: (k) Letter of Price Bid (l) Schedule of Adjustment data (appendix –A-1 & A-2) (m) Bill of Quantities (appendix –B-1 & B-2) (n) Estimated Progress Payments (appendix –H-1)

20.1(a)	Deadline for submission of Bids: As stated in NIT.
23.1	Bid opening: As stated in NIT



EVALUATION CRITERIA AND QUALIFICATION UPDATING FORMS

EVALUATION CRITERIA AND QUALIFICATION UPDATING FORMS

1. **General**

This Section contains Eligibility and Qualification Criteria that the Employer shall use to

evaluate Bids and qualify Bidders in accordance with Clauses IB.26 of Instructions to Bidders. The Bidder shall provide all the information requested in the relevant forms contained in Bidder's Qualification Updating Forms provided herein.

The information provided in the forms shall be substantiated with valid documentary evidences otherwise the requirement will not be considered as complied.

Wherever a Bidder is required to state a monetary amount, Bidders shall indicate the PKR equivalent using the rate of exchange determined as follows:

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

Exchange rates shall be taken from the publicly available source identified in the Sub-Clause IB.14.2. Any error in determining the exchange rates in the Bid may be corrected by the Employer.

2.

Evaluation (IB 29.2(e))

The evaluation of Bids will be carried out according to criteria listed in IB 29.2 (a) - (d).

Evaluation Criteria

1. The Bidders must meet all the mandatory criteria

1.1 Mandatory Provisions/Eligibility

#	Description	Yes/No
(i)	Registration with PEC: Bidders must possess valid registration certificate of PEC in the category C-5 or above with specialization code CE09, C10, C11 Single Entity: Must Meet	If “Yes” the applicant will be Eligible for further evaluation for qualification.
(ii)	Registration with Revenue Board Bidders must possess valid registration certificate from FBR and Sindh Revenue Board. Single Entity: Must Meet	If “Yes” applicable the applicant will be Eligible for further evaluation for qualification

2. Evaluation/Qualification Criteria:

#	Category	Weightage/Marks
(i)	Financial Soundness	30
(ii)	Work Experience	40
(iii)	Key Personnel	15
(iv)	Plant & Equipment	15
	Total	100

Note: - For Technical Qualification, Passing Marks **50 out of 100**. Additionally, each applicant has to score a minimum of **25%** in each category.

2.1 **Financial Soundness:**

Sr. No.	Description	Maximum Marks
i)	Available Bank Credit Line (50 million or above) Provide Original Bank Credit Line Letter duly certified by regional Branch of Bank. Average Working Capital in last 5 years (100 million or above)	5
ii)	Provide Firm Audited Financial Reports for the last 5 years. Average Annual Financial Turnover in last 5 year = (50 million or above)	10
iii)	Provide Firm Audited Financial Reports for the last 5 years. Litigation History where decision went against the Firm. (Affidavit on Rs.100 Stamp Paper)	5
iv)		5
v)	Blacklisting from any Agency (Affidavit on Rs.100 Stamp Paper)	5
SUB-TOTAL:		30

2.1 **Work Experience:**

SR.NO.	DESCRIPTION	MAXIMUM
a)	Similar nature of works Completed in last 5 years: 1 Project (50 million or above) = 5 Points Or 2 Projects (25 million or above) = 5 Points (Provide Work Orders and Completion Certificate)	20
b)	Similar nature of works in Hand: 1 Project (50 million or above) = 5 Points Or 2 Projects (25 million or above) = 5 Points (Provide Work Orders)	15
c)	Status of enlistment with Government Organizations and other agencies. 1 Enlistment x 1 Point	5
	SUB-TOTAL:	40

2.2 **Key Personnel:**

SR. NO.	DESCRIPTION	MAXIMUM
i)	Engineers Registered with PEC a. B.Sc Engr (Civil) with 5+ years' experience (2 marks for one engineer) b. B.Sc Engr (Civil) with 3+ years' experience (1 mark for one engineer)	9
ii)	Diploma Engineers in Employment of the Firm a. Site Supervisor (DAE Civil) with 5+ years' experience (1 mark for one DAE Civil) b. Surveyor (DAE Civil) with 3+ years' experience (1 mark for one DAE Civil)	6
	SUB-TOTAL:	15

Note:

- Bidders are supposed to possess Qualification Certificates i.e PEC Certificate and Diploma Certificates to be attached with their CV in the bid.

2.3 Plant & Equipment:

S.NO	Equipment Type & Characteristics	Min. Nr. required	POINTS
1	Front End Loader(3CM)	01 No	2
2	Excavator (0.3CM)	02 No	2
3	Concrete Mixer Machine (One Bag Capacity)	02 No	2
4	Generator (100KVA)	01 No	2
5	Plate Compactors	02 No	1
6	Water Browser	02 No	2
7	HDPE Pipe Joiner	01 No	2
8	Thrust Boring Machine	01 No	2
		SUB-TOTAL:	15

Note:

1. The marks mentioned in above table are for owned equipment.
2. Total equipment available with the bidder is to be listed along with its current mobilization on on-going projects. The Bidder shall provide further details of proposed items of equipment using the relevant Form provided hereunder.
3. The bidder must submit ownership documents for equipment own by it.
4. For Leased/Rental equipment, the bidder must submit lease/rental agreement(s). For leased/rental equipment bidder will get 50% marks.

Bidders Qualification Updating Forms

To establish its qualifications to perform the contract in accordance with Section (Evaluation Criteria and Qualification Updating Forms) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.



Form ELI -1.1**Bidder Information Form**

Date: _____

Bid Reference No. (if any) and title: _____

Page _____ of _____ pages

Bidder's name
Bidder's country of registration: <i>[indicate country of Constitution]</i>
Bidder's year of incorporation:
Bidder's legal address [in country of registration]:
Bidder's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents, in accordance with Sub-Clause IB 3.1.

Form ELI -1.2

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

Date: _____

Bid Reference No. (if any) and title: _____

Page _____ of _____ pages

Bidder's JV name:
JV member's name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____

Form CON – 1**Pending Litigation**

Bidder's Name: _____

Date: _____

Bid Reference No. (if any) and title: _____
 Page _____ of _____ pages

Pending Litigation, in accordance with Eligibility and Qualification Criteria			
☐ No pending litigation in accordance with Eligibility and Qualification Criteria, Sub-Factor 2.1. ☐ Pending litigation in accordance with Eligibility and Qualification Criteria, Sub-Factor 2.1 as indicated below.			
Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (currency), Eq. PKR (exchange rate)
		Contract Identification: _____ Name of Employer: _____ Address of Employer: _____ Matter in dispute: _____ Party who initiated the dispute: _____ Status of dispute: _____	
		Contract Identification: _____ Name of Employer: _____ Address of Employer: _____ Matter in dispute: _____ Party who initiated the dispute: _____ Status of dispute: _____	

Form FIN – 3.1:
Financial Situation and Performance

Bidder's Name: _____

Date: _____

Bid Reference No. (if any) and title: _____

Page _____ of _____ pages

1. Financial data

Type of Financial information in (currency)	Historic information for last year, (amount in currency, currency, exchange rate*, Eq. PKR)
Statement of Financial Position (Information from Balance Sheet)	
Total Assets (TA)	
Total Liabilities (TL)	
Total Equity/Net Worth (NW)	
Current Assets (CA)	
Current Liabilities (CL)	
Working Capital (WC)	
Information from Income Statement	
Total Revenue (TR)	
Profits Before Taxes (PBT)	
Cash Flow Information	
Cash Flow from Operating Activities	

*Refer to IB 14.2 for the exchange rate

2. Financial documents

The Bidder and its parties shall provide copies of financial statements for last year pursuant to Eligibility and Qualification Criteria, Sub-factor 3.1. The financial statements shall:

- reflect the financial situation of the Bidder, and not an affiliated entity (such as parent company or group member).
- be independently audited or certified in accordance with local legislation.
- be complete, including all notes to the financial statements.
- correspond to accounting periods already completed and audited.

Attached are copies of financial statements¹ for the last year required above; and complying with the requirements¹

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

Form FIN – 3.2:**Financial Resources**

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

No.	Source of financing	Amount (Eq. PKR)
1		
2		
3		

Form FIN – 3.3:**Current Contract Commitments / Works in Progress**

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

Current Contract Commitments					
No.	Name of Contract	Employer's Contact Address, Tel, Fax	Value of Outstanding Work [Current Eq. PKR]	Estimated Completion Date	Average Monthly Invoicing Over Last Six Months [Eq. PKR /month)]
1					
2					
3					
4					
5					

**LETTER OF BID
AND
SCHEDULES TO BID**

LETTER OF BID

Bid Reference No. _____
 [Name of Contract/ Works]

To: _____

Gentleman,

1. Having examined the Bidding Documents including Instructions to Bidders, Bidding Data, Conditions of Contract, Specifications, Schedules to Bid including Bill of Quantities, Drawings and Addenda Nos. _____ for the execution of the above-named Works, we, the undersigned, offer to execute and complete such Works and remedy any defects therein in conformity with the said Bidding Documents and Addenda for the sum of Equivalent PKR _____ (Eq. Pak Rupees _____) or such other sum as may be ascertained in accordance with the said conditions.
2. We meet the eligibility requirements in accordance with IB.3.
3. We, including any Subcontractors for any part of the Contract, are not debarred/ blacklisted by the Employer, any Government/Semi Government/Public Department in Pakistan or foreign country, international organizations or other foreign institutions.
- Our subcontractors or suppliers for any part of the Contract, if any, shall have nationalities from eligible countries, in accordance with IB.4.4.
5. We understand that all the Schedules attached hereto form part of this Bid.
6. As security for due performance of the undertakings and obligations of this Bid, we submit herewith a Bid Security in the amount of PKR _____ (Pak. Rupees. _____) drawn in your favour or made payable to you and valid for a period of _____ days beginning from the date Bids are opened.
7. We undertake, if our Bid is accepted, to commence the Works and to complete the whole of the Works comprised in the Contract within the time stated in Contract Data.
8. We undertake to maintain this Bid for the period of _____ days, including the day of opening of the Bid validity period (as mentioned at Sr. No. 6 above) and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
9. Unless and until a formal Agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
10. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other Bidder for the Works.
11. We understand that you are not bound to accept the lowest or any Bid you may receive.
12. We undertake that all the information and documents submitted with the Bid are genuine, and in case of incorrect information of fake documents we shall be liable for punitive action under the Applicable Law.

Dated this day of 20

Signature: _____

in the capacity of _____ duly authorized to sign Bids for and on behalf of

(Name of Bidder in Block Capitals)
(Seal)

Address: _____

Witness:

Signature: _____

Name: _____

Address. _____

Occupation _____

A-1

Schedule-A to Bid

SCHEDULE OF ADJUSTMENT DATA**Schedule of Cost Indexation**

[The Employer is to engage a professional with experience in construction costs and the inflationary effect on construction costs when preparing the contents of the Schedule of Cost Indexation. In the case of very large and/or complex works contracts, it may be necessary to specify several families of price adjustment formulae corresponding to the different works involved.]

[The formulae for price adjustment shall be of the following general type:]

$$P_n = a + b \frac{L_n}{L_o} + c \frac{E_n}{E_o} + d \frac{M_n}{M_o} + \dots$$

“P_n” is the adjustment multiplier to be applied to the estimated Contract value in the relevant currency of the work carried out in period “n”, this period being a month;

where:

“a” is a fixed coefficient, stated in the relevant table of adjustment data, representing the non-adjustable portion in contractual payments;

“b”, “c”, “d”, ... are coefficients representing the estimated proportion of each cost element related to the execution of the Works as stated in the relevant table of adjustment data; such tabulated cost elements may be indicative of resources such as labour, equipment and materials; “L_n”, “E_n”, “M_n”, are the current cost indices or reference prices for period “n”, expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the date 49 days prior to the last day of the period (to which the particular Payment Certificate relates); and

“L_o”, “E_o”, “M_o”, are the base cost indices or reference prices, expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the Base Date.

The weightings (coefficients) for each of the factors of cost stated in the following table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or inapplicable, as a result of Variation(s).

If the currency in which the Contract price is expressed is different from the currency of the country of origin of the indices, a correction factor will be applied to avoid incorrect adjustments of the Contract price. The correction factor shall be: Z_0 / Z_1 , where,

Z₀ = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price on the Base date, and

Z₁ = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price on the Date of Adjustment.

A-2**Schedule-Ato Bid****SCHEDULE OF ADJUSTMENT DATA**

Table 1. Local Currency (LC) For Bill Nos.

[In the Table below, the Bidder shall (a) indicate amount of local currency payment, and the Employer shall (b) enter the Index description and source of indices for the different elements of cost, and (c) derive weightings for local currency payment including nonadjustable fixed portion. PEC Standard Procedure and Formula for Price Adjustment (Second Edition), May, 2022 as amended time to time shall be applied for preparation of the following Table.]

Index code	Index description	Source of index	Bidder's related currency amount	Weightages
(i)	Non-adjustable / Fixed Portion	Federal Bureau of Statistics (FBS) Monthly Statistical Bulletin	=	0.35
(ii)	HDPE Pipes			0.15
(iii)	Labour			0.10
(iv)	Pumps			0.35
(v)	High Speed Diesel (HSD)			0.05
	TOTAL =			1.00

A-3

Schedule-A to Bid

SCHEDULE OF ADJUSTMENT DATA**Table II. Foreign Currency (FC) For Bill Nos. _____**

[In the Table below, the Bidder shall (a) indicate amount of foreign currency payment, (b) indicate the source and base values of indices for the different foreign currency elements of cost, (c) derive its proposed weightings of foreign currency payment, except the non-adjustable portion which will be filled in by the Employer.

If the Bidder wishes to incur in more than one foreign currency (up to two currencies permitted) then this table should be repeated for each foreign currency.]

Index code	Index description	Source of index	Base value and date	Bidder's related source currency in type/amount	Equivalent in FC1	Bidder's proposed weighting
(i)	Non-adjustable	—	—	—	—	A: _____
(ii)						B: _____
(iii)						C: _____
(iv)						D: _____
(v)						E: _____
				Total		1.00

A-4

Schedule-A to Bid

SCHEDULE OF ADJUSTMENT DATA**Table III. Foreign Currency Requirements**

[With reference to Sub Clause IB.14.1, the Bidder shall provide information below on the proportion of various currencies in which he requires payment to be made. The Bidders shall also indicate Factors (inputs) related to the requirement of respective currencies.]

Sr. No	Currency (name)	Percentage payable in currency	Factors (inputs) to which the Requirements Refer
1.	LC (Pak. Rs.)		* General Expenses, Manpower, Local Staff, Expatriate Staff, Spare Parts, Fuel & Lubricants, Hydraulic Binder, Timber & Plywood, Additives & Protectives, Joints & Waterstops, Explosives-Fuses-Detonators, Re-Steel, Steel & Wire mesh, Metal Pipes & Fittings, Structural Steel, Miscellaneous Metals, Concrete Pipes, PVC Pipes, Build Materials, Sub-Contractor, Drilling & Grouting Sub-Contractor, Third Party Supplies, Import Charges, General Expenses, Plants.
2.	FC1 (US\$ Dollar)		* Expatriate Staff, Spare Parts, Hydraulic Binder, Timber & Plywood, Additives & Protectives, Drilling Materials, Miscellaneous, Sub-Contractor, Import Charges, General Expenses, Plants.
3.	FC2 (EUR EURO)		* Expatriate Staff, Spare Parts, Additives & Protectives, Welding Materials, Miscellaneous, Electrical Sub-Contractor, Import Charges, General Expenses, Equipment, Plants.
TOTAL		100.00	

[*The above Factors (Inputs) related to the requirement of respective currencies, are for guidance only, and shall be indicated specific to the Contract.]

A-5

Schedule-A to Bid

SCHEDULE OF ADJUSTMENT DATA**Table IV. Summary of Payment Currencies**

[In the Table below, the Bidder shall list the exchange rates used in the currency conversion with reference to Sub Clause IB.14.2.]

Name of payment currency	a Amount of currency	b Rate exchange (local currency of per unit foreign)	c Local currency equivalent $c = a \times b$	d Percentage of Total Bid Price (TBP) $\frac{100 \times c}{TBP}$
Local currency (Pak. Rs)		1.00		
FC1				
FC2				
Total Bid Price				100.00
Provisional sums expressed in local currency	<i>[To be entered by the Employer]</i>		<i>[To be entered by the Employer]</i>	
TOTAL BID PRICE (including provisional sum)				

B-1
Schedule-B to Bid

BILL OF QUANTITIES

A. Preamble:

1. The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specifications and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work executed and measured by the Contractor and verified by the Engineer and valued at the rates and prices as given in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix as per the Contract.
3. The rates and prices as given in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract include all costs of Contractor's plant, labour, supervision, materials, execution, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract. Furthermore, all duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to deadline for submission of Bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.
4. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor will have failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
5. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the Works, or the same shall be determined by the Engineer in accordance with Clause 13, General Conditions.
6. General directions and description of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the Bill of Quantities.
7. Provisional sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with Sub- Clause 13.4 of General Conditions of Contract.
8. The following abbreviations for units have been used in Bill of Quantities:

Units		Abbreviations
Cubic Foot	=	cft
SquareFoot	=	Sqft
Kilogram	=	kg
ProvisionalSum	=	PS
Lump-Sum	=	LS

B-2
Schedule-B to Bid

BILL OF QUANTITIES

(Refer Vol-IV)



C-1
Schedule-C to Bid

CONSTRUCTION SCHEDULE

Pursuant to Sub-Clause 8.3 of the General Conditions, the whole of the Works, and each Section (if any), shall be completed within the Time for Completion for the Works or Section (as the case may be) stated as hereunder and mentioned in Contract Data:

Milestones	Time for Completion (days)

[The Bidder shall provide, the Construction Schedule in the bar chart (CPM, PERT or any other to be specified herein) showing the sequence of work items and the period of time during which he proposes to complete each work item in such a manner that his proposed programme for completion of the whole of the Works and Sections of the Works may meet Employer's completion targets in days noted above and counted from the Commencement Date (Attach sheets as required for the specified form of Construction Schedule)]

D-1
Schedule-D to Bid

METHOD OF PERFORMING THE WORK

[The Bidder is required to submit a narrative outlining the method of performing the Work. The narrative should indicate in detail and include but not be limited to:

1.

Organization Chart:

Shall indicate head office and field office personnel involved in management and supervision, engineering, equipment maintenance and purchasing.

2.

Mobilization:

In Pakistan, the type of facilities including personnel accommodation, office accommodation, provision for maintenance and for storage, communications, security and other services to be used.

3.

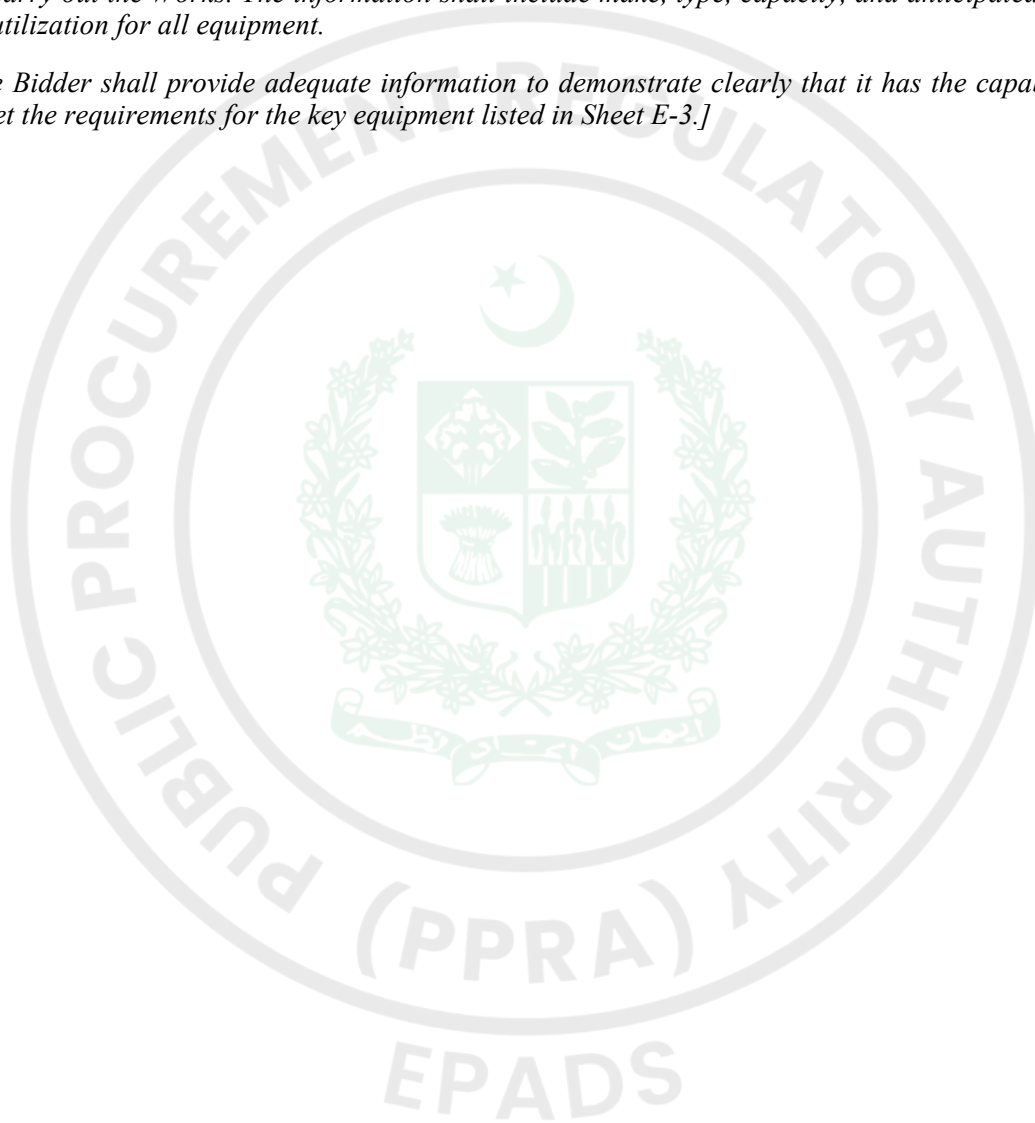
Method of executing the Works:

The procedures for installation of equipment and machinery and transportation of equipment and materials to the site.]

E-1**Schedule-E to Bid****LIST OF MAJOR EQUIPMENT**

[The Bidder will provide on Sheet E-2 of this Schedule a list of all major equipment and related items, under separate heading for items owned, to be purchased or to be arranged on lease by him to carry out the Works. The information shall include make, type, capacity, and anticipated period of utilization for all equipment.]

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Sheet E-3.]



E-2

Schedule-E to Bid

LIST OF MAJOR EQUIPMENT**Owned, Purchased or Leased**

Owned Purchased or Leased	Description of Unit (Make, Model, Year)	Capacity HP Rating	Condition	Present Location or Source	Date of Delivery at Site	Period of Work on Project
1	2	3	4	5	6	7
a. Owned						
b. To be Purchased						
c. To be Arranged on Lease						

E-3
Schedule-E to Bid

LIST OF MAJOR EQUIPMENT

Equipment details

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment Owned Rented Leased Specially manufactured	
The following information shall not be applicable for equipment owned by the Bidder		
Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

[This Table shall be used for each item of Equipment separately]

F-1
Schedule-F to Bid

**ORGANIZATION CHART
FOR THE
SUPERVISORY STAFF AND LABOUR**



G-1
Schedule-G to Bid

LIST OF SUBCONTRACTORS

I/ We intend to subcontract the following parts of the Work to subcontractors. In my/ our opinion, the subcontractors named hereunder are reliable and competent to perform that part of the work for which each is listed.

Enclosed are documentation outlining experience of subcontractors, the curriculum vitae and experience of their key personnel who will be assigned to the Contract, equipment to be supplied by them, size, location and type of contracts carried out in the past.

Part of Works (Give Details)	Subcontractor (With Complete Address)
1	2

I-1**Schedule-I to Bid****CONSTRUCTION CAMP AND HOUSING FACILITIES**

[The Bidder in accordance with Clause 6 of the Conditions of Contract shall provide description of his construction camp's facilities and staff housing requirements.

The Bidder shall list or explain his plans for providing these facilities for the service of the Contract as follows:

- 1. Site Preparation (clearing, land preparation, etc.).*
- 2. Provision of Services.*
 - a) Electrical power (expected power load, etc.).*
 - b) Water (required amount and system proposed).*
 - c) Sanitation (sewage disposal system, etc.).*
- 3. Construction of Facilities*
 - a) Contractor's Office. Workshop and Work Areas (areas required and proposed layout, type of construction of buildings, etc.).*
 - b) Warehouses and Storage Areas (area required, type of construction and layout).*
 - c) Housing and Staff Facilities (Plans for housing for proposed staff, layout, type of construction, etc.).*
- 4. Construction Equipment Assembly and Preparation (detailed plans for carrying out this activity).*
- 5. Other Items Proposed (Security services, etc.)]*

Note:

The Contractor shall be responsible for pumps, electrical power, water and electrical distribution systems, and sewerage system including all fittings, pipes and other items necessary for servicing the Contractor's construction camp.

J-1

Schedule-J to Bid

INTEGRITY PACT

**DECLARATION OF FEES, COMMISSION AND BROKERAGE, ETC. PAYABLE
BY THE BIDDERS/CONTRACTORS OF GOODS, SERVICES & WORKS IN
CONTRACTS WORTH PAK. RS. 10.00 MILLION OR MORE**

Contract No. _____

Dated _____

Contract Value: _____

Contract Title: _____

..... [Name of Bidder/Contractor] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan (GoP) or any administrative subdivision or agency thereof or any other entity owned or controlled by GoP through any corrupt business practice.

Without limiting the generality of the foregoing, [Name of Bidder/ Contractor] represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Bidder/Contractor] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

[Name of Bidder/Contractor] accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other rights and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, [name of Bidder/Contractor] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [name of Bidder/Contractor] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

Name of Employer:

Signature:

[Seal]

Name of Bidder/Contractor:

Signature:

[Seal]



STANDARD FORMS

BS-1

FORM OF BID SECURITY

Security Executed on _____
(Date)

Expiry on _____
(Date)

Name of Surety with Address: _____

Name of Principal (Bidder) with Address _____

Penal Sum of Security PKR _____ (Pak Rupees _____)

Bid Reference No. _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bid and at the request of the said Principal (Bidder) we, the Surety above named, are held and firmly bound unto (hereinafter called the 'Employer') in the sum stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Bidder has submitted the accompanying Bid dated _____ for _____
(Particulars of Bid) to the said Employer; and

- (1) WHEREAS, the Employer has required as a condition for considering said Bid that the Bidder furnishes a Bid Security in the above said sum to the Employer, conditioned as under: that the Bid Security shall remain in force for a period fourteen (14) days beyond the Bid Validity date i.e., up to _____
- (2) that the Bid Securities of the Bidders except the lowest three will be returned by the Employer within twenty eight (28) days from the opening of Bids, provided a Bidder request for the return of its Bid Security, or on the expiry of original validity of Bid Security or as extended, whichever is earlier;
- (3) that the Bid Security of the lowest three Bidders comprising the successful Bidder will be returned when the successful Bidder has furnished the required Performance Security; and
- (4) that in the event of failure of the successful Bidder to furnish the required Performance Security, the entire said sum be paid immediately to the said Employer pursuant to IB.16 and IB.35 of the Instructions to Bidders for the successful Bidder's failure to perform.

NOW THEREFORE, if the successful Bidder shall, within the period specified therefor, on the prescribed form presented to him for signature enter into a formal Contract with the said Employer in accordance with his Bid as accepted and furnish within twenty eight (28) days of his being requested to do so, a Performance Security with good and sufficient surety, as may be required, upon the form prescribed by the said Employer for the faithful performance and proper fulfilment of the said Contract or in the event of non-withdrawal of the said Bid within the time specified for its validity then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

BS.2

PROVIDED THAT the Surety shall forthwith pay the Employer the said sum upon first written demand of the Employer (without cavil or argument) and without requiring the Employer to prove or to show grounds or reasons for such demand, notice of which shall be sent by the Employer by registered post duly addressed to the Surety at its address given above.

PROVIDED ALSO THAT the Employer shall decide, whether the Principal (Bidder) has duly performed his obligations to sign the Contract Agreement and to furnish the requisite Performance Security within the time stated above, or has defaulted in fulfilling said requirements and the Surety shall pay without objection the said sum upon demand from the Employer forthwith and without any reference to the Principal (Bidder) or any other person.

IN WITNESS WHEREOF, the above bounden Surety has executed the instrument under its seal on the date indicated above, the name and seal of the Surety being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

WITNESS:

SURETY
(Schedule Bank/Insurance Company)

Signature _____

1. _____

Name _____

Title _____

Corporate Secretary (Seal)

Corporate Guarantor (Seal)

2. _____

Name, Title & Address

PS-1**FORM OF PERFORMANCE SECURITY**

Guarantee No. _____

Executed on _____

Expiry date _____

[Letter by the Guarantor to the Employer]

Name of Guarantor with address: _____

Name of Principal (Contractor) with address: _____

Penal Sum of Security (*express in words and figures*) _____

Letter of Acceptance No. _____ Dated _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bidding Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal we, the Guarantor above named, are held and firmly bound unto the (hereinafter called the

Employer) in the penal sum of the amount stated above for the payment of which sum well and truly to be made to the said Employer, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has accepted the Employer's above said Letter of Acceptance for _____

_____ (Name of Contract) for the _____

_____ (Name of Project).

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Employer, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract and of any and all modifications of said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till all requirements of Clause 11, Defects After Taking Over, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We, _____ (the Guarantor), waiving all objections and defense under the Contract, do hereby irrevocably and independently guarantee to pay to the Employer without delay upon the Employer's first written demand without cavil or arguments

PS.2

and without requiring the Employer to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Employer's written declaration that the Principal has refused or failed to perform the obligations under the Contract which payment will be effected by the Guarantor to Employer's designated Bank & Account Number.

PROVIDED ALSO THAT the Employer shall decide, whether the Principal (Contractor) has duly performed his obligations under the Contract or has defaulted in fulfilling said obligations and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Employer forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above-bounden Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Guarantor
(Schedule Bank/ Insurance Company)

WITNESS:

Signature _____

1. _____ Name _____
 _____ Title _____
 Corporate Secretary (Seal) Corporate Guarantor (Seal)

2. _____

 Name, Title & Address

LOA-1

Letter of Acceptance

[Letter head paper of the Employer]

NAME OF CONTRACT: _____ CONTRACT

NUMBER: _____

TO: _____

Date: _____

Your Reference: _____

Our Reference: _____

We thank you for your Bid dated _____
for the execution and completion of the Works comprising the above-named Contract and remedying of defects therein,
all in conformity with the terms and conditions contained in the Contract.

We have pleasure in accepting your Bid for the Accepted Contract Amount of:

[currency and amount in figures]

[currency and amount in words]

In consideration of you properly and truly performing the Contract, we agree to pay you the Accepted Contract Amount or such other sums to which you may become entitled under the terms of the Contract, at such times and as prescribed by the Contract.

We acknowledge that this Letter of Acceptance creates a binding Contract between us, and we undertake to fulfil all our obligations and duties in accordance with the terms of this Contract.

Signature: _____

Signed by: _____

For and on behalf of: _____

Date: _____

CA-1

FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the “Agreement”) made on the _____ day of _____ (month) 20____ between _____

_____ (hereinafter called the “Employer”) of the one part and _____ (hereinafter called the “Contractor”) of the other part.

WHEREAS the Employer is desirous that certain Works, viz., _____ should be executed by the Contractor and has accepted a Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW this Agreement witnessed as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents, in the order of priority, after incorporating addenda, if any, except those parts relating to Instructions to Bidders shall be deemed to form and be read and construed as part of this Agreement:
 - a) This Contract Agreement;
 - b) The Letter of Acceptance;
 - c) The Letter of Bid;
 - d) The Particular Conditions Part A - Contract Data;
 - e) The Particular Conditions Part B - Special Provisions;
 - f) The General Conditions;
 - g) The Specifications Part A - Specific Provisions;
 - h) The Specifications Part B - Technical Provisions;
 - i) The Drawings;
 - j) The Completed Schedules to Bid including Schedule of Prices;
 - k) *[Employer to insert any other documents forming part of the Contract]*

The addenda/corrigenda, if any, (Excluding part relating to Instructions to Bidders along with Bidding Data) shall be deemed to have been incorporated at the appropriate places in the “Documents forming the Contract”.

3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy defects therein in conformity and in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor, in consideration of the execution and completion of the Works as per provisions of the Contract, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS WHEREOF the parties hereto have caused this Agreement to be executed on the day, month and year first before written in accordance with their respective laws.

Signature of Contactor

Signature of Employer

(Seal)

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness

Witness

(Name, Title and Address)

(Name, Title and Address)

DAAB-1

DAAB Agreement

[All italicized text and any text within square brackets (except sub-clause headings) in this form of agreement is for use in preparing the form and should be deleted from the final product].

Name and details of the Contract

This Agreement made the _____ day of _____ [month], _____ [year], between

Name and contact details of the Employer _____ (name)
 _____ (address)
 _____ (telephone)
 _____ (email / other contact details);

Name and contact details of the Contractor _____ (name)
 _____ (address)
 _____ (telephone)
 _____ (email / other contact details);

Name and contact details of the DAAB Member _____ (name)
 _____ (address)
 _____ (telephone)
 _____ (email / other contact details);

("DAAB Agreement")

Whereas:

- A. the Employer and the Contractor have entered (or intend to enter) into the Contract;
- B. under the Contract, the "DAAB" or "**Dispute Avoidance/Adjudication Board**" means the sole member or three members (as stated in the Contract Data of the Contract) so named in the Contract, or appointed under Sub-Clause 21.1 [*Constitution of the DAAB*] or Sub-Clause 21.2 [*Failure to Appoint DAAB Members*] of the Conditions of Contract;
- C. the Employer and the Contractor desire jointly to appoint the above-named DAAB Member to act on the DAAB as:
 - a. the sole member of the DAAB, and where this is the case, all references to the "Other Members" do not apply; or
 - b. one of three members / chairman [*delete the one which is not applicable*] of the DAAB and, where this is the case, the other two persons are:

DAAB-2

(name)
(address)
(telephone)

(email/ other contact details)

(name)
(address)
(telephone)

(email/ other contact details)

the “**Other Members**”; and

D. the DAAB Member accepts this appointment.

The Employer, Contractor and DAAB Member jointly agree as follows:

1. The conditions of this DAAB Agreement comprise:
 - (a) Clause 21 [*Disputes and Arbitration*] of the Conditions of Contract, and any other provisions of the Contract that are applicable to the DAAB’s Activities; and
 - (b) the “General Conditions of Dispute Avoidance/Adjudication Agreement”, which is appended to the General Conditions of the “Conditions of Contract for Construction” Second Edition 2017 published by FIDIC (“GCs”), as amended and/or added to by the following provisions.
2. [Details of amendments to the GCs, if any. For example:
In the procedural rules annexed to the GCs, Rule _ is deleted and replaced by: “ ... “]
3. The DAAB Member shall be paid in accordance with Clause 9 of the GCs. The currency of payment shall be _____.
In respect of Sub-Clauses 9.1 and 9.2 of the GCs, the amounts of the DAAB Member’s monthly fee and daily fee shall be:
monthly fee _____ per month, and
daily fee of _____ per day
(or as otherwise set under Sub-Clause 9.3 of the GCs).
4. In consideration of the above fees, and other payments to be made to the DAAB Member in accordance with the GCs, the DAAB Member undertakes to act as DAAB Member in accordance with the terms of this DAAB Agreement.
5. The Employer and the Contractor shall be jointly and severally liable for the DAAB Member’s fees and other payments to be made to the DAAB Member in accordance with the GCs.
6. This DAAB Agreement shall be governed by the law of _____ (if not stated, the law that governs the Contract under Sub-Clause 1.4 of the Conditions of Contract).

DAAB-3

SIGNED by:_____	SIGNEDby: _____	SIGNEDby: _____
Print name:_____	Print name:_____	DAAB Member
Title:_____	Title:_____	Title:_____
for and on behalf of the Employer	for and on behalf of the Contractor	
in the presence of	in the presence of	in the presence of
Witness:_____	Witness:_____	Witness: _____
Name:_____	Name:_____	Name: _____
Address:_____	Address:_____	Address: _____
_____	_____	_____
Date: _____	Date: _____	Date: _____

MG-1

FORM OF MOBILIZATION ADVANCE GUARANTEE/ BOND

Guarantee No. _____ Date _____

WHEREAS _____ (hereinafter called the 'Employer')

has entered into a Contract for _____

with _____ (*Particulars of Contract*)
(hereinafter called the "Contractor").

AND WHEREAS, the Employer has agreed to advance to the Contractor, at the Contractor's request, an amount of Pak Rupees _____ (PKR _____) which amount shall be advanced to the Contractor as per provisions of the Contract.

AND WHEREAS, the Employer has asked the Contractor to furnish Guarantee to secure the mobilization advance for the performance of his obligations under the said Contract.

AND WHEREAS, _____

(hereinafter called the "Guarantor") at the request of the Contractor and in consideration of the Employer agreeing to make the above advance to the Contractor, has agreed to furnish the said Guarantee.

NOW, THEREFORE, the Guarantor hereby guarantees that the Contractor shall use the advance for the purpose of above mentioned Contract and if he fails and commits default in fulfilment of any of his obligations for which the advance payment is made, the Guarantor shall be liable to the Employer for payment not exceeding the aforementioned amount.

Notice in writing of any default, on the part of the Contractor, of which the Employer at his discretion of making decision, shall be given by the Employer to the Guarantor, and on such first written demand, payment shall be made by the Guarantor of all sums then due under this Guarantee without any reference to the Contractor and without any objection.

This Guarantee shall remain in force until the advance is fully adjusted against payments from the
whichever
Interim Payment Certificates of the Contractor or until _____
is earlier. (Date)

The Guarantor's liability under this Guarantee shall not in any case exceed the sum of
PKR _____ (Pak Rupees _____
_____).

This Guarantee shall remain valid up to the aforesaid date and shall be null and void after the aforesaid date or earlier if the advance made to the Contractor is fully adjusted against payments from Interim Payment Certificates of the Contractor provided that the Guarantor

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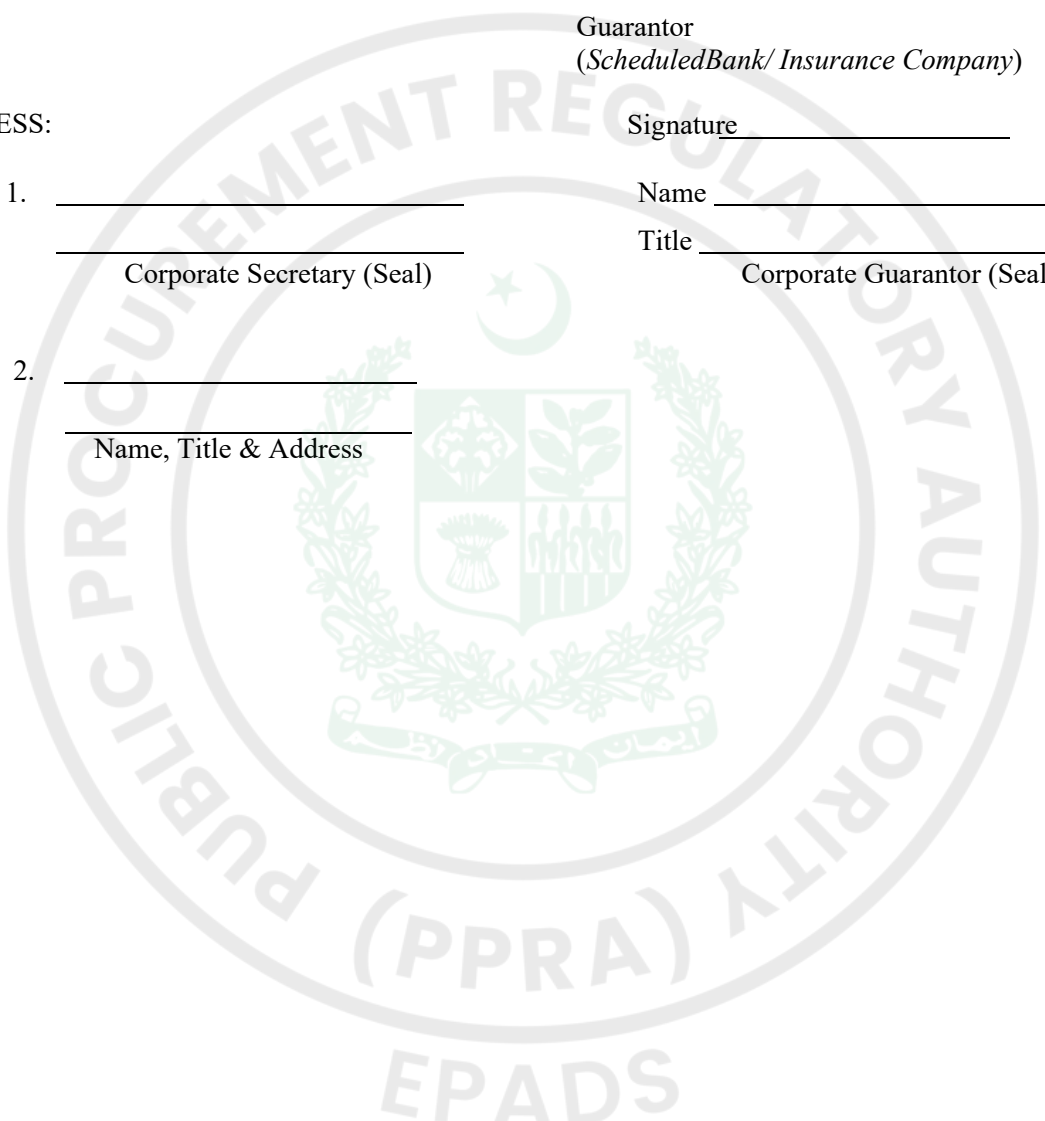
agrees that the aforesaid period of validity shall be deemed to be extended if on the above mentioned date the advance payment is not fully adjusted.

Guarantor
(Scheduled Bank/ Insurance Company)

WITNESS: Signature _____

1. _____ Name _____
_____ Title _____
Corporate Secretary (Seal) Corporate Guarantor (Seal)

2. _____
_____ Name, Title & Address





CONDITIONS OF CONTRACT

CONDITIONS OF CONTRACT

The Conditions of Contract comprise two parts:

- (a) General Conditions
- (b) Particular Conditions

General Conditions

These Conditions are the “General Conditions” which form part of the “FIDIC Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer Second Edition (2017 Red Book, Reprinted 2022 with amendments) published by:

International Federation of Consulting Engineers

(Fédération Internationale des Ingénieurs – Conseils) – (FIDIC)

World Trade Center II - Geneva Airport

P. O. Box 311

CH-1215 Geneva 15

Switzerland

Email: fidic@fidic.org, fidic.pub@fidic.org

Website: <https://fidic.org/bookshop>

The successful Bidder after award of Works shall have to provide two (02) copies of above said “General Conditions” for incorporation in the Contract.

Particular Conditions

*(Mandatory Provisions not to be amended/substituted
except as instructed/permited by PEC in writing)*

The Particular Conditions (PC) complement the General Conditions (GC) to specify dates, contractual requirements, and special circumstances related to the Works. The PC consists of two parts, Part A - Contract Data and Part B - Special Provisions. The provisions to be found in the Special Provisions (Particular Conditions - Part B) take precedence over the equivalent provisions found under the same Sub-Clause number(s) in the General Conditions, and the provisions of the Contract Data (Particular Conditions - Part A) take precedence over the Special Provisions (Particular Conditions - Part B).

Part A - Contract Data

Sub-Clause	Data to be Given	Data
1.1.27	Defects Notification Period (DNP):	365 days
1.1.31	Employer's name and address:	Director General, Federal Government Employees Housing Authority, Islamabad Address: Project Director, Federal Government Employees Housing Authority, Karachi 2nd Floor Working Women's Hostel, Opposite Garden Police Headquarter Aga Khan III Road, Karachi The Engineer of project will be notified in the letter of acceptance.
1.1.35	Engineer's name and address:	
1.1.73	Sections:	"None"
1.1.84	Time for Completion:	180 Calander days for whole of the Works
1.3(a)(ii)	Agreed methods of electronic transmission:	"None"
1.3(d)	address of Employer for communications:	Project Director, Federal Government Employees Housing Authority, Karachi 2nd Floor Working Women's Hostel, Opposite Garden Police Headquarter Aga Khan III Road, Karachi
	address of Engineer for communications:	Will be communicated in LOA.

Sub-Clause	Data to be Given	Data
	address of Contractor for communications:	<i>[insert Contractor's address at time of signing of the Contract]</i> the
1.4	Contract shall be governed by the law of:	Islamic Republic of Pakistan
	Ruling language:	English
	Language for communications:	English
1.8	Number of additional paper copies of Contractor's Documents:	Only via EPADS
2.1	after receiving the Letter of Acceptance, of the Contractor shall be given right access to all or part of the Site within:	Immediately upon receipt of Notice to Commence. Self-Financed
2.4	Employer's financial arrangements	
3.2 (e)(ii)	Engineer's Duties and Authority	Variation resulting in an increase of the Accepted Contract Amount in excess of one percent (1%) subject to not cumulative Variations exceeding five percent (5%) of the Accepted Contract Amount
4.2	Performance Security (as percentage of the Accepted Contract Amount in Currencies) percent: currency:	Ten percent (10%) of Accepted Contract Amount
4.2.1	List of Insurance Companies	Not Applicable
4.7.2	Period for notification of errors in the items of reference	Fourteen (14) days
4.20	Number of additional paper copies of progress reports	additional paper copies of 02 Nos. copies
5.1(a)	Maximum allowable accumulated value of work subcontracted (as a percentage of the Accepted Contract Amount)	This Percent (60%) Not Applicable Employer may vary this percentage according to the nature and complexity of the Works

Sub-Clause	Data to be Given	Data
5.1(b)	Parts of the Works for which subcontracting is not permitted	Employer to provide his requirement according to the nature and complexity of the Works or state "None"]
6.5	Normal working hours on the Site	Eight (08) hours per day and 6 days in a week
8.3	Number of additional paper copies of programmes	Three (03) copies
8.8 & 14.15(b)	Delay Damages payable for each 10% of Awarded Cost divided by 180 day of delay	days
8.8	Maximum amount of Delay Damages	Ten percent (10%) of the Accepted Contract Amount
8.14	Applicability Early Incentives for No Completion	
12.3 13.4.	Percentage profit	Ten percent (10%)
(b)(ii)	Percentage rate to be applied to Provisional Sums for overhead charges and profit	Twenty Five percent (25%)
14.2	Total Advance Payment	Ten percent (10%) of the Accepted Contract Amount Excluding Provisional Sums payable in the currencies and proportions in which the Accepted Contract Amount is payable
14.2.1	List of Insurance Companies	1. _____ 2. _____ 3. _____ [insert list of Insurance Companies acceptable to the Employer as per criteria given in PC 14.2.1]

Sub-Clause	Data to be Given	Data
14.2.3	Percentage deductions for the repayment of the Advance Payment	Deduction shall be made at the amortization rate of 17.5 % of the value of the Works executed of each IPC as provided in paragraph (i) of Sub-Clause GCC 14.3, starting from 2 nd IPC provided that the advance payment shall be completely repaid prior to the time when 90% of the Accepted Contract Amount less Provisional Sums has been certified for payment. It may be more than 17.5% in the last instalment to ensure full repayment.
14.3	Period of Interim payment	30 Days
14.3(b)	Number of additional paper copies of Statements	<i>Original plus one hard copy plus one electronic copy</i>
14.3 (iii)	Percentage of retention	Ten percent (10 %)
14.3 (iii)	Limit of Retention Money (as a percentage of the Contract Price)	Five percent (5%)
14.6.2	Minimum amount of Interim Payment Certificate (IPC)	5 million
14.7(a)	Period of payment of Advance payment to the Contractor	21 days
14.7b(i)	Period for the Employer to make interim payments to the Contractor under Sub-Clause 14.6 [Interim Payment]	28 days

Sub-Clause	Data to be Given	Data
14.7(c)	Period for the Employer to make final payment to the Contractor Financing charges for delayed payment	56 days
14.8	Financing charges for delayed payment	KIBOR+3% per annum for local currency and SOFR (Secured Overnight Financing Rate) +1% per annum for foreign currency.
14.11.1(b)	Number of additional paper copies of draft Final Statements	06 Copies
14.15	Currencies of payment of Contract Price	Pak Rupees
14.15(a)(i)	Proportions or amounts of Local and Foreign currencies	as stated in the Table IV of Schedule A [Schedule of Adjustment Data]
14.15(c)	currencies and proportions for payment of Delay Damages	as stated in the Table IV of Schedule A [Schedule of Adjustment Data]
14.15(f)	rates of exchange	as stated in the Table IV of Schedule A [Schedule of Adjustment Data]
17.2(d)	Forces of nature, the risks of which are allocated to the Contractor works.	The Contractor is responsible for the safety of all works and shall be liable for any loss or damages caused to the awarded works.
19.1	Permitted deductible limits: i) insurance required for the Works ii) insurance required for Goods iii) insurance required for liability for breach of professional duty iv) insurance required against liability for fitness for purpose (if any is required) v) insurance required for injury to persons and damage to property vi) insurance required for injury to employees vii) other insurances required by Laws and by local practice	i) Ten percent (10%) of loss amount on each & every loss ii) Nil iii) Nil iv) Nil v) Nil vi) Nil vii) Nil

Sub-Clause	Data to be Given	Data
19.1	Periods for submission of insurance: a) evidence of insurance b) relevant policies	Not later than the Commencement Date Within twenty-eight (28) day from the Commencement Date
19.2.1(b)	Additional amount to be insured (as a percentage of the replacement (Accepted Contract Amount) value)	15% of the replacement value
19.2.2	Extent of insurance required for Goods Amount of insurance required for Goods	from Ex-Works (i.e., works, factory, warehouse, etc) to delivery at the Site Full replacement value
19.2.3(a)	Amount of insurance required for liability for breach of professional duty	Full replacement value of the Works to be designed by the Contractor
19.2.3(b)	Insurance required against liability for fitness for purpose	Yes
19.2.3	Period of insurance required for liability for breach of professional duty	Until the date of issuance of Performance Certificate
19.2.4	Amount of insurance required for injury to persons and damage to property	Injury to person and Fatal case: in accordance with Workmen Compensation Act Damage to Property: <u>Rs. 5000/sq-ft</u> without limit to the number of incidents
19.2.6	Other insurances required by Laws and by local practice	All insurances as applicable, to the extent of execution of the project, under Federal and Provincial laws of Islamic Republic of Pakistan
21.1	Time for appointment of the DAAB (Dispute Avoidance and Adjudication Board)	Within 28 days from the Commencement Date. In case the Accepted Contract Amount is lesser than PKR one (01) billion, appointment of the DAAB shall be made when Dispute arises between the Parties.

Sub-Clause	Data to be Given	Data
21.1	the DAAB shall comprise	3 Members _____ <i>[insert either “a sole Member” or “Three Members”]</i> <i>[For a Contract estimated to cost above PKR 2.5 billion, the DAAB shall comprise of three members. For a Contract estimated to cost between PKR 1 billion and PKR 2.5 billion, the DAAB may comprise of three members or a sole member. For a Contract estimated to cost less than PKR 1 billion, a sole member is recommended.]</i>
21.1	List of proposed members of DAAB - Proposed by Employer - Proposed by Contractor	<i>[to be inserted at the time of signing of the Contract]</i> 1. _____ 2. _____ 3. _____ 1. _____ 2. _____ 3. _____
21.2	Appointing entity (official) for DAAB members	Chairman, Pakistan Engineering Council (PEC) from the list of PEC approved arbitrators published at its website
21.6	Rules of Arbitration	PEC Rules of Conciliation Arbitration or Pakistan Arbitration Act of 1940, if the former is inactive. The place of Arbitration shall be Project Director FGEHA Karachi Office

Summary of Sections of the Works

Section Name/Description of parts of the Works that shall be designated a Section for the purposes of the Contract (Sub-Clause 1.1.73)	Value: Percentage* of Accepted Contract Amount (Sub-Clause 14.9)	Time for Completion (Sub-Clause 1.1.84)	Delay Damages (Sub-Clause 8.8)
A			
B			
C			

* These percentages shall also be applied to each half of the Retention Money under Sub-Clause 14.9.

Section Name/Description (Sub-Clause 1.1.73)	Time for Completion (Sub-Clause 1.1.84)	Incentives for Early Completion (Sub-Clause 8.14)
A		
B		
C		

Particular Conditions

Part B - Special Provisions

- 1.1 Definitions** ~~1 Specification~~ Following is added at the end: “and consists of two parts i.e.,
i) “Part A - Specific Provisions”; and
ii) “Part B - Technical Provisions”.”
- 1.2 Interpretation** “and” is deleted from the end of sub-paragraph (i) and added at the end of sub-paragraph (j).
Sub-paragraph (k) is added:
“(k) The word “tender” is synonymous with “bid” the word tenderer with “bidder”, the words “tender documents” with “bidding documents” and “Schedule of Prices” with “Bill of Quantities”, as applicable.”
- 1.5 Priority of Documents** The documents listed at (a) through (k) of this Sub-Clause are deleted and substituted with the following:
(a) the Contract Agreement;
(b) the Letter of Acceptance;
(c) the Letter of Bid;
(d) the Particular Conditions Part A - Contract Data;
(e) the Particular Conditions Part B - Special Provisions;
(f) the General Conditions;
(g) the Specification Part A - Specific Provisions;
(h) the Specification Part B - Technical Provisions;
(i) the Drawings;
(j) the completed Schedules to Bid including Bill of Quantities;
(k) the JV Undertaking (if the Contractor is a JV); and
(l) any other documents forming part of the Contract.
The addenda/corrigenda, if any, shall be deemed to have been incorporated at the appropriate places in the documents forming the Contract.
- 1.6 Contract Agreement** In the last line of the 1st paragraph the text “shall be borne by the Employer” is substituted by “shall be borne by the Contractor”.
- 3.1 The Engineer** In sub-paragraph (a) the text “as defined in the Pakistan Engineering Council Act, 1975 (Act No. V of 1976)” are added after the words “professional engineer”.

3.2 Engineer's Duties and Authority

The Engineer shall obtain the consent in writing of the Employer before taking action under the following Sub-Clauses of these Conditions:

- (a) Consenting to the subcontracting of any part of the Works under Sub-Clause 5.1 [Subcontractors]
- (b) Any action under Sub-Clauses 8.9 [Employer's Suspension] and 8.12 [Prolonged Suspension]
- (c) Issuance of "Taking Over Certificate" under Sub-Clause 10.1 [Taking Over the Works and Sections].
- (d) Issuing the "Performance Certificate" under Sub-Clause 11.9 [Performance Certificate].
- (e) Sub-Clause 13.1 [Right to Vary]: instructing a Variation, except;
 - (i) in an emergency situation as determined by the Engineer, or
 - (ii) if such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the Contract Data.
- (f) Sub-Clause 13.3 [Variation Procedure]: approving a proposal for Variation submitted by the Contractor in accordance with Sub-Clause 13.3.2 [Variation by Request for Proposal] or 13.2 [Value Engineering].
- (g) Certifying release of second half of the Retention Money under Sub-Clause 14.9 [Release of Retention Money].
- (h) Issuing Final Payment Certificate under Sub-Clause 14.13 [Issue of FPC].
- (i) Sub-Clause _____ *
- (j) Sub-Clause _____ *

**[insert Sub-Clause number (not Sub-Clause 3.7 [Agreement or Determination])]*

Any such requirement shall not be applied to any action by the Engineer under Sub-Clause 3.7 [Agreement or Determination], as stated in Sub-Clause 3.2 [Engineer's Duties and Authority] of the General Conditions.

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

Following is added after the words "the Employer's consent is required" in 4th paragraph:

stating that “the Employer’s consent has been obtained for that specified authority”

4.2 Performance Security

4.2.1 Contractor’s Obligations

The entity issuing the Performance Security and its form shall be as under:

The Performance Security shall be, at the option of the Contractor, issued in the prescribed form included in the Bidding Documents, by (a) a Scheduled Bank in Pakistan or (b) a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan.

In case of Joint Venture, the Performance Security shall be in the name of the Joint Venture or in the name of the Lead/ either firm of the JV or in ratio of shares of the individual JV partners. Following paragraph is added at the end of this Sub-Clause:

“The amount of Performance Security shall be reduced to 50% following issue of the Taking-Over Certificate for the whole of the Works under Clause 10 of Conditions of Contract.”

4.3 Contractor’s Representative

In second paragraph the text “professional engineer as defined in the Pakistan Engineering Council Act, 1975 (Act No. V of 1976) (having temporary license in case of foreign engineer under Section 12 of the Pakistan Engineering Council Act, 1975 (Act No. V of 1976)” are added after the words “qualified, experienced”.

In the 3rd paragraph the words “28 days” are substituted by “14 days”. In 2nd line of 4th paragraph the text “or appoint a replacement” is substituted by “except appointment of a suitable temporary replacement is deployed at the Site”

4.4 Contractor’s Documents

4.4.2 As-Built Records

First paragraph is deleted and the text in the last paragraph is substituted with the following:

“The Contractor shall furnish to the Engineer 6 copies, one reproducible and one electronic copy (provided the Engineer has made available to the Contractor editable form of the Drawings) of all Drawings amended to conform to the Works as built. In case

the Engineer does not make available to the Contractor editable form of the Drawings, the Contractor shall furnish to the Engineer as-built data for incorporation in the Drawings. Upon receipt of PDF versions of the as-built drawings prepared by the Engineer, the Contractor shall furnish to the Engineer 6 copies and one reproducible of these Drawings. The price of such Drawings shall be deemed to be included in the Contract Price.”

Following Sub-Clause is added:

4.4.4 Shop Drawings

The Contractor shall submit to the Engineer for review 3 copies of all shop and erection drawings applicable to this Contract as per provision of relevant Sub-Clause of the Contract.

Review and approval by the Engineer shall not exceed 21 days and be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory and the Engineer's review or approval shall not relieve the Contractor of any of his responsibilities under the Contract.

4.8 Health and Safety Obligations

The following text is added at the end of this Sub-Clause:

In the event of work being carried out outside the normal working hours and in the event of work being carried out at night, the Contractor shall at his own cost, provide and maintain such good and sufficient light as will enable the work to proceed satisfactorily and without danger. The approaches to the Site and the Works where the night work is being carried out shall be sufficiently lighted. All arrangement adopted for such lighting shall be to the satisfaction of the Engineer.

4.20 Progress Reports

At the end of sub-paragraph (g) the word "and" is deleted and at the end of sub-paragraph (h) the full stop (.) is replaced with ";;", and the following new sub-paragraphs are added as:

(i) planned programme for the execution of the Works for next 56 days to enable the Engineer to determine its programme of inspection and testing;

(j) monthly summary of daily job record indicating weather conditions, deployment of Contractor's Equipment, labour employment, local material procurement and material import, if any; and

(k) salient contractual and project information.

5.1 Subcontractors

Add the following text at the end of paragraph (ii):

"under Schedule to Bid"

The following is added at the end of the last paragraph of Sub-Clause 5.1:

"All subcontracts relating to the Works shall include provisions which entitle the Employer to require the subcontract to be assigned to the Employer under sub-paragraph (a) of Sub-Clause 15.2.3 [After Termination]."

The Contractor shall give reasonable opportunity to contractors from Islamic Republic of Pakistan for subcontracts for the Works, and endeavor to employ such contractors as Subcontractors."

5.2 Nominated Subcontractors

5.2.2 Objection to Nomination

In sub-paragraph (c), "and" is deleted from the end of (i);

"." at the end of (ii) is replaced with: ", and".

The following is then added as (iii):

“(iii) be paid only if and when the Contractor has received from the Employer payments for sums due under the Subcontract referred to under Sub-Clause 5.2.3 [*Payment to nominated Subcontractors*].”

6.1 Engagement of Staff and Labour

The following paragraph is added at the end of the Sub-Clause: “The Contractor shall, to the extent practicable and reasonable, employ staff (not less than 50%) and labour (not less than 85%) with appropriate qualifications and experience from sources within the Islamic Republic of Pakistan.”

6.7 Health and Safety of Personnel

The existing text is substituted with the following:

“In order to provide for the safety, health and welfare of persons, and for prevention of damage of any kind, all operations for the purposes of or in connection with the Contract shall be carried out in compliance with the Safety Requirements of the Government of Pakistan with such modifications thereto as the Engineer may authorize or direct and the Contractor shall take or cause to be taken such further measures and comply with such further requirements as the Engineer may determine to be reasonably necessary for such purpose. The Contractor shall also provide all other medical services and appoint a health and safety officer at Site if stated in the Specifications. In case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer immediately by the quickest available means.”

6.8 Contractor’s Superintendence

Insert at the end of sub-paragraph (a) of this Sub-Clause:

"or, if not, the Contractor shall make competent interpreters available during all working hours, in a number sufficient for those persons to properly perform their superintendence duties" The following text is added at the end of this Sub-Clause:

“The Contractor’s authorized representative and his other engineers working at site shall possess valid registration with the Pakistan Engineering Council.

The Contractor’s authorized representative at Site shall be authorized to exercise adequate administrative and financial powers on behalf of the Contractor so as to achieve completion of the Works as per the Contract.”

6.12 Key Personnel

The following is inserted at the end of the last paragraph:

“If any of the Key Personnel are not fluent in this language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.”

The following Sub-Clauses 6.13 to 6.26 are added at the end of Sub-Clause 6.12:

6.13 Foreign Personnel

The Contractor may bring in to the Country any foreign personnel who are necessary for the execution of the Works to the extent allowed by the applicable Laws. The Contractor shall ensure that these personnel are provided with the required

residence visas and work permits. The Employer will, if requested by the Contractor, use all reasonable endeavours in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national, or government permission required for bringing in the Contractor's personnel.

The Contractor shall be responsible for the return of these personnel to the place where they were recruited or to their domicile. In the event of the death in the Country of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial.

- 6.14 Supply of Foodstuffs** The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract.
- 6.15 Supply of Water** The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.
- 6.16 Measures against Insect and Pest Nuisance** The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.
- 6.17 Alcoholic Liquor or Drugs** The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereto by Contractor's Personnel.
- 6.18 Arms and Ammunition** The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so.
- 6.19 Festivals and Religious Customs** The Contractor shall respect the Country's recognized festivals, days of rest and religious or other customs.
- 6.20 Funeral Arrangements** The Contractor shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of its local employees who may die while engaged upon the Works.
- 6.21 Forced Labour** The Contractor, including its Subcontractors, shall not employ or engage forced labour which consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labour, such as indentured labour, bonded labour or similar labour-contracting arrangements.
- 6.22 Child Labour** The Contractor, including its Subcontractors, shall not employ or engage child labour in accordance with relevant law(s) in force in Islamic Republic of Pakistan.

- 6.23 Employment Records of Workers** The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the Engineer. These records shall be included in the details to be submitted by the Contractor under Sub-Clause 6.10 [*Contractor's Records*].
- 6.24 Workers' Organizations** The Contractor shall comply with the relevant labour laws of Pakistan which recognize workers' rights to form and to join workers' organizations/Trade Union of their choosing and to bargain collectively without interference.
- 6.25 Non-Discrimination and Equal Opportunity** The Contractor shall not make decisions relating to the employment or treatment of Contractor's Personnel on the basis of personal characteristics unrelated to inherent job requirements. The Contractor shall base the employment of Contractor's Personnel on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to any aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices.
- Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination. The Contractor shall provide protection and assistance as necessary to ensure nondiscrimination and equal opportunity, including for specific groups such as women, persons with disabilities, migrant workers and children (of working age in accordance with Sub-Clause 6.22).
- 6.26 Epidemics** In the event of any out-break of illness of 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 overcoming the same.

7.7 Ownership of Plant and Materials

The following is added before the first paragraph:

“Except as otherwise provided in the Contract,”

The following is added at the end of the Sub-Clause:

"No Plant and/or Material that is the property of the Employer shall be removed from the Site. If it becomes necessary to:

- (i) remove any item of such Plant from the Site for the purposes of repair, the Contractor shall give a Notice, with reasons, to the Engineer requesting consent to remove the defective or damaged item off the Site. This Notice shall clearly identify the item of defective or damaged Plant, and shall give details of: the defect or damage to be repaired; the place to which defective or damaged item of Plant is to be taken for repair; for proposed inspections and testing the transportation to be used (and insurance required) before the such transportation; the item of Plant shall be returned to the Site. The off the Site; and the Contractor shall also provide any further details that the

Employer may reasonably require; or

- (ii) replace any item(s) of such Plant and/or Materials, the Contractor shall give a Notice, with reasons, to the Engineer clearly identifying the item(s) of Plant and/or Material to be replaced, and giving details of the due date of delivery to the Site of the replacement item(s).

Where any item of Plant and/or Material has become the property of the Employer under this Sub-Clause before it has been delivered to the Site, the Contractor shall ensure that such an item is not moved except for its delivery to the Site.

The Contractor shall indemnify and hold the Employer harmless against and from the consequences of any defect in title or encumbrance or charge (except any reasonable restriction arising from the intellectual property rights of the manufacturer or producer) on any item of Plant and/or Material that has become the property of the Employer under this Sub-Clause."

The following Sub-Clause 7.9 is added after Sub Clause 7.8:

- 7.9 Use of Pakistani Materials and Services** The Contractor shall, so far as may be consistent with the Contract, make the maximum use of materials, supplies, plant and equipment indigenous to or produced or fabricated in Pakistan and services available in Pakistan provided such materials, supplies, plant, equipment and services shall be of required standard.

- 8.1 Commencement of Works** The following is added before the first paragraph:
“After signing of the Contract Agreement by both Parties,” and thereafter the word “The” is replaced with the word “the”.

- 8.5 Extension of Time for Completion** The following is added after paragraph (c):
“for last five years”.

The following Sub-Clause 8.14 is added after Sub-Clause 8.13:

- 8.14 Incentives For Early Completion** If Contract Data does not state applicability of incentives for early completion, this Sub-Clause shall not apply.
- The Contractor shall be entitled subject to Sub-Clause 20.2 [*Claims for Payment and/or EOT*] to bonus payment if the Works and/or each Section is completed earlier than the Time for Completion for the Works or Section (as the case may be). The amount of bonus for early completion of the Works and/or each Section shall be upto a limit and at a rate to 50% of the relevant limit and rate of delay damages prescribed in Contract Data and shall be paid for every day which shall elapse between the relevant Date of Completion of the Works or Section and the relevant Time for Completion.
- For the purposes of calculating any bonus payment, the applicable Time for Completion stated in the Contract Data is fixed and no adjustments of this time by reason of granting an EOT will be allowed.

The following Sub-Clause 11.12 is added after Sub-Clause 11.11:

- 11.12 Supervisory Assistance During DNP** If provided under the Schedule of Prices, the Contractor shall provide supervisory assistance to the Employer during the DNP for the Works. Such supervisory assistance shall be as described in the Specification for the purpose of supporting the Employer's operation and maintenance of the Plant for the period specified in the Schedule of Prices after the Date of Completion.
- 12.2 Method of Measurement** The following paragraph is added at the end of the Sub-Clause:
 “Summary of measured quantity for payment shall be delineated item-wise under four heads namely; “Schedule of Prices Quantity”, “Quantity Executed To-date”, “Quantity Certified Previously” and “Net Quantity Executed under this Certificate”.
- 12.3 Valuation of the Works** The following text is added at the end of fifth paragraph of the Sub-Clause:
 “Sum of overhead charges and profit for sub-paragraph (a) shall be Twenty Five percent (25%)”.
- 13.4 Provisional Sums** The following paragraph is inserted as the penultimate paragraph:
 “The Provisional Sum shall be used to cover the Employer’s share of the DAAB members’ fees and expenses, in accordance with Clause 21. No prior instruction of the Engineer shall be required with respect to the work of the DAAB. The Contractor shall submit the DAAB members’ invoices and the satisfactory evidence of having paid 100% of such invoices as part of the substantiation of those Statements submitted under Sub-Clause 14.3.
- 13.6 Adjustments for Changes in Laws** The following paragraphs are added at the end of the Sub- Clause:
 “Notwithstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the Table of Adjustment Data in accordance with the provisions of Sub-Clause 13.7 [*Adjustments for Changes in Cost*].”

14.1 The Contract Price

The following is added at the end of the Sub-Clause:

(b) Notwithstanding the provisions of subparagraph (a), Contractor's Equipment, including essential spare parts, imported by the Contractor for the sole purpose of executing the Contract shall be temporarily exempt from the payment of import duties and taxes upon initial importation, provided the Contractor shall post with the customs authorities at the port of entry an approved re-export bond or bank guarantee, valid until the Time for Completion plus six months, in an amount equal to the full import duties and taxes which would be payable on the assessed imported value of such Contractor's Equipment and spare parts, and callable in the event the Contractor's Equipment is not re-exported from the Country on completion of the Contract. A copy of the bond or bank guarantee endorsed by the customs authorities shall be provided by the Contractor to the Employer upon the importation of individual items of Contractor's Equipment and spare parts. Upon re-export of individual items of Contractor's Equipment or spare parts, or upon the completion of the Contract, the Contractor shall prepare, for approval by the customs authorities, an assessment of the residual value of the Contractor's Equipment and spare part to be re-exported, based on the depreciation scale(s) and other criteria used by the customs authorities for such purposes under the provisions of the applicable Laws. Import duties and taxes shall be due and payable to the customs authorities by the Contractor on (a) the difference between the initial imported value and the residual value of the Contractor's Equipment and spare parts to re-exported; and (b) on the initial imported value of the Contractor's Equipment and spare parts remaining in the Country after completion of the Contract. Upon payment of such dues within 28 days of being or released accordingly, bank guarantee security shall be called in the full amount remaining."

14.6 Issue of IPC**14.6.1 The IPC**

In the first line of the 1st paragraph the words “28 days” are substituted by “14 days”.

14.7 Payment

The words “or through crossed cheque in favour of the Contractor or JV partners. The Payment to JV partners shall be made at the request of the Joint Ventures in the ratio of their shares specified by them” are added at the end of the Sub-Clause.

- 14.8 Delayed Payment** In the first paragraph, third line, the words “compounded monthly” are deleted.
- The text of 2nd paragraph is deleted and substituted with the following:
- “The Employer shall pay to the Contractor compensation at the rate stated in the Contract Data.”
- 15.2 Termination for Contractor’s Default** 15.2.1 Notice
- Following text is added at the end of sub-paragraph (h) of this Sub-Clause:
- “For the purposes of this Contract, corrupt and fraudulent practices have been defined in Public Procurement Rules 2004.”
- 15.2.3 After Termination
- The word “and” at the end of sub-paragraph (ii) of paragraph (b) is deleted the following paragraph is added after sub-paragraph (iii):
- “(iv) all Employer-Supplied Materials and/or Employer's Equipment made available to the Contractor in accordance with Sub-Clause 2.6 [*Employer-Supplied Materials and Employer's Equipment*], and”
- 15.4 Payment after Termination** The following text is added at the end of this Sub-Clause:
- “The Employer shall be entitled to sell any of the Contractor’s Equipment, Temporary Works and unused materials and apply the proceeds of sale towards payment of any debt due from the Contractor to the Employer under this Clause including any outstanding payments to the Subcontractors.
- 16.2 Termination by Contractor** 16.2.1 Notice
- The sub-paragraph (j) is deleted in its entirety.
- At the end of sub-paragraph (i) “; or” is replaced with “.” and at the end of sub-paragraph (h) “;” is replaced with “; or”.
- In sub-paragraph (f) “84 days” are replaced with “180 days” and text “for reasons not attributable to the Contractor” is added at the end.
- 16.3 Contractor’s Obligations After Termination** Sub-paragraph (c) is deleted and replaced with:
- “(c) deliver to the Engineer all Employer-Supplied Materials and/or Employer's Equipment made available to the Contractor in accordance with Sub-Clause 2.6 [*Employer-Supplied Materials and Employer's Equipment*]; and
- (d) remove all other Goods from the Site, except as necessary for safety, and leave the Site.”
- 17.1 Responsibility for Care of the Works** After the two instances of “Goods” in the last paragraph, the words “Employer-Supplied Materials and/or Employer's Equipment” are added.

The following Sub-Clause 17.7 is added after Sub-Clause 17.6:

- 17.7 Use of Employer's Accommodation/Facilities** The Contractor shall take full responsibility for the care of the items of the Employer's facilities and/or accommodation, if any, as detailed in the Specification, from the date of use and/or occupation by the Contractor until the date on which such use and/or occupation is re-vested in the Employer.
- If any loss or damage happens to any of the above items during a time while the Contractor is responsible for its care, arising from any cause other than a cause for which the Employer is responsible or liable, the Contractor shall promptly rectify the loss or damage at the Contractor's risk and cost.
- 18.1 Exceptional Events** The words "or disorder" are replaced with "disorder or sabotage" in sub-paragraph (c) of the Clause.
- 18.4 Consequences of an Exceptional Event** If the Contractor is the affected Party and suffers delay and/or incurs Cost by reason of the Exceptional Event of which he/she gave a Notice under Sub-Clause 18.2 [Notice of an Exceptional Event], the Contractor shall be entitled subject to Sub-Clause 20.2 [Claims For Payment and/or EOT] to:
- (a) EOT; and/or
 - (b) If the Exceptional Event is of the kind described in sub-paragraphs (a) to (e) of 18.1 [Exceptional Events] and, in the case of sub-paragraphs (b) to (e) of that Sub-Clause, occurs in the Country, payment of such Cost.
- The following is added at the end of sub-paragraph (b) after deleting the "":
- “, including the costs of rectifying or replacing the Works and/or Goods damaged or destroyed by Exceptional Events, to the extent they are not indemnified through the insurance policy referred to in Sub-Clause 19.2 [*Insurance to be provided by the Contractor*].”
- 18.5 Optional Termination** In sub-paragraph (c), the words “and necessarily” are added after the words “was reasonably”.
- 19.1 General Requirements** Following text is added at the end of first paragraph:
- “The Contractor shall immediately after the date of the Letter of Acceptance submit the draft of insurance policies for the Employer's consent.”
- Following text is added at the end of third paragraph:
- “The Contractor shall, within the respective periods stated in the Contract Data submit to the Engineer and the Employer a) evidence that the insurances described in this Clause have been effected, and b) copies of policies of the insurances described in Sub-Clauses 19.2.1, 19.2.4 and 19.2.5.”

19.2 Insurance to be provided by the Contractor

19.2.5 Injury to employees

The words “sickness, disease” are deleted in the fourth line of first paragraph:

The Contractor shall effect and maintain insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising out of the execution of the Works in respect of ~~injury, sickness, disease~~ or death of any person employed by the Contractor or any of the Contractor’s other personnel.

The Employer and the Engineer shall also be indemnified under the policy of insurance, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Employer or of the Employer’s Personnel.

The insurance shall be maintained in full force and effect during the whole time that the Contractor’s Personnel are assisting in the execution of the Works. For any person employed by a Subcontractor, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for the Subcontractor’s compliance with this Sub-Clause.

The following Sub-Clause is added after Sub-Clause 19.2.6:

19.2.7 Insurance Company

~~The Contractor shall be obliged to place all insurances described in this Clause with~~ **M/s National Insurance Company Limited (NICL)** and rated by PACRA/VIS below:

Accepted Contract Amount (Million PKR)	Minimum Rating of Insurance Companies
Up to 1000	A (+)
1001 to no limit	AA

The following Sub-Clause is added after Sub-Clause 19.2.7:

19.2.8 Workman Compensation Policy

The Contractor must secure a proper Workmen's Compensation Policy exclusively from M/s National Insurance Company Limited (NICL). This policy should enable the Contractor to compensate their employees for work-related injuries, as well as provide suitable compensation to the dependents in case of unfortunate death or permanent and total disablement of an employee. The Client bears no liability in this regard. For all publicly financed CAR/EAR projects, the Contractor must engage M/s NICL, ensuring compliance with Section-166 of the Insurance Ordinance, 2000. This applies specifically to Contractors All Risk/Erection All Risk Policies related to the construction, renovation, or maintenance of 'public property'. Additionally, the Contractor is responsible for indemnifying the Client as well as the Consultant staff against any third-party claims arising from accidents or injuries that occur at the site during the execution of works.

21.6 Arbitration

The word “international” is deleted in the sixth line of first paragraph. The text of sub-paragraph (a) is substituted with the following:

“the Dispute shall be finally settled under the Rules of Arbitration, specified in the Contract Data;”

The following Clauses are added after Clause 21

23 Taxes

The Contractor, Subcontractors and their employees shall be liable to pay income tax, withholding tax, super tax and other taxes on income arising out of the Contract. The rates and prices as stated in the contract shall be deemed to cover all such taxes.

24 Integrity Part

If it is found and established at any stage that the Contractor or any of his Subcontractors, agents or servants have violated or involved in violation of the Integrity Pact signed by the Contractor then the Employer shall be entitled to :

- (a) recover from the Contractor an amount equivalent to ten times the sum of any commission, gratification, bribe, finder’s fee or kickback given by the Contractor or any of his Subcontractors, agent or servants;
- (b) terminate the Contract; and
- (c) recover from the Contractor any loss or damage to the Employer as a result of such termination or of any other corrupt business practices of the Contractor or any of his Subcontractors, agent or servants.

The termination under sub-paragraph (b) of this Sub-Clause shall proceed in the manner prescribed under Sub-Clause 15.1 to 15.4 and the payment under Sub-Clause 15.4 shall be made after having deducted the amounts due to the Employer under sub-paragraph (a) and (c) of this Sub-Clause.