



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

RENOVATION OF APARTMENTS FOR FEDERAL
GOVERNMENT EMPLOYEES AT COMMERCIAL
PLOTS FL & SB, SECTOR 24-B, FGEHA HOUSING
SCHEME PHASE-I, KDA SCHEME-33, GULZAR-E-
HIJRI, KARACHI (PACKAGE-II)

TECHNICAL BID

(VOLUME-I)

(SINGLE STAGE TWO ENVELOPE)

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NOTICE INVITING TENDER / BID

**REFER TO THE ADVERTISEMENT PUBLISHED IN NEWSPAPER AND ON FGEHA
& PPRA WEBSITES**



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:

- 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 summarised in the Bidding Data hereinafter referred to as the "Works".
- 1.2 The successful bidder will be expected to complete the Works within the time specified in Appendix-A to Bid.

IB.2 Source of Funds:

- 2.1 The Employer has applied for / received a loan / credit from the source(s) indicated in the Bidding Data 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 loan / credit will be applied to eligible payments under the Contract for which these Bidding Documents are issued.

IB.3 Eligible Bidders:

- 3.1 This Invitation for Bids is open to all bidders meeting the following requirements:
 - (a) Duly licensed by the Pakistan Engineering Council (PEC) in the category relevant to the value of the Works.
 - (b) Duly prequalified / enlisted with the Employer.

IB.4 One Bid per Bidder:

- 4.1 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.16) will be disqualified.

IB.5 Cost of Bidding:

- 5.1 The bidders shall bear all costs associated with the 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.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. General Conditions of Contract, Part-I (GCC).
 4. Particular Conditions of Contract, Part-II (PCC).
 5. Specifications - Special Provisions.
 6. Specifications - Technical Provisions.
 7. Form of Bid & Appendices to Bid.
 8. Bill of Quantities (Appendix-D to Bid).
 9. Form of Bid Security.
 10. Form of Contract Agreement.
 11. Forms of Performance Security and Mobilization Advance Guarantee / Bond.
 12. 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:

- 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 28 days 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.

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.
- 9.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 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 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 Language of Bid:

- 10.1 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 an accurate 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.11 Documents Accompanying the Bid:

- 11.1 Each bidder shall:
 - (a) Submit a written power of attorney authorizing the signatory of the bid to act for and on behalf of the bidder;



- (b) Update the information indicated and listed in the Bidding Data and previously submitted with the application for prequalification, and continue to meet the minimum criteria set out in the prequalification documents which as a minimum, would include the following:
- (i) Evidence of access to financial resources along with average annual construction turnover.
 - (ii) Financial predictions for the current year and the two following years including the effect of known commitments.
 - (iii) Work commitments since prequalification.
 - (iv) Current litigation information; and
 - (v) Availability of critical equipment.
- (c) Furnish a technical proposal taking into account the various Appendices to Bid specially the following:
- Appendix-E to Bid: Proposed Construction Schedule.
 - Appendix-F to Bid: Method of Performing the Work.
 - Appendix-G to Bid: List of Major Equipment.
 - Appendix-K to Bid: Organization Chart for Supervisory Staff and other pertinent information such as mobilization programme etc.

11.2 Bids submitted by a joint venture of two (2) or more firms shall comply with the following requirements:

- (a) The bid and in case of a successful bid, the Form of Contract Agreement shall be signed 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 Form 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, the proportionate participation 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 partner without prior written consent of the Employer.

11.3 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 1.2 hereof.

IB.12 Bid Prices:

- 12.1 Unless stated otherwise in the Bidding Documents, the Contract shall be for the whole of the Works as described in Sub-Clause 1.1 hereof, based on the unit rates and / or prices submitted by the bidder.
- 12.2 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.
- 12.3 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 70.2 of the General Conditions of Contract Part-I.
- 12.4 The rates and prices quoted by the bidders are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 70 of the Conditions of Contract. The bidders shall furnish the prescribed information for the price adjustment formulae in Appendix-C to Bid, and shall submit with their bids such other supporting information as required under the said Clause.



IB.13 Currencies of Bid and Payment:

13.1 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 supplied from outside the Employer's country (referred to as the "Foreign Currency Requirements") shall indicate the same in Appendix-B to Bid. 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.

13.2 The rates of exchange to be used by the bidder for currency conversion shall be the TT&OD Selling Rates published or authorized by the State Bank of Pakistan prevailing on the date 28 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.14 Bid Validity:

14.1 Bids shall remain valid for the period stipulated in the Bidding Data after the Date of Bid Opening specified in Clause IB.23.

14.2 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 shall in no case be more than the original bid validity period. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting his Bid Security. 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.15 in all respects.

IB.15 Bid Security:

15.1 Each bidder shall furnish, as part of his bid, a Bid Security in the amount stipulated in the Bidding Data in Pak Rupees or an equivalent amount in a freely convertible currency.

15.2 The Bid Security shall be, at the option of the bidder, in the form of Deposit at Call or a Bank Guarantee issued by a Scheduled Bank in Pakistan or from a foreign bank duly counter guaranteed by a Scheduled Bank in Pakistan or an insurance company



having at-least AA rating from PACRA/JCR in favour of the Employer valid for a period of 28 days beyond the Bid Validity date.

- 15.3 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.
- 15.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, but not later than 28 days after the expiration of the period of Bid Validity.
- 15.5 The Bid Security of the successful bidder will be returned when the bidder has furnished the required Performance Security and signed the Contract Agreement.
- 15.6 The Bid Security may be forfeited:
- (a) If the bidder withdraws his bid except as provided in Sub-Clause 22.1;
 - (b) If the bidder does not accept the correction of his Bid Price pursuant to Sub-Clause 27.2 hereof; or
 - (c) In the case of successful bidder, if he fails within the specified time limit to:
 - i. Furnish the required Performance Security; or
 - ii. Sign the Contract Agreement.

IB.16 Alternate Proposals by Bidder:

- 16.1 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 Alternate 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 Form of Bid shall be that which represents complete compliance with the Bidding Documents.
- 16.2 Alternate Proposal(s), if any, of the lowest evaluated responsive bidder only may be considered by the Employer as the basis for the award of Contract to such bidder.

IB.17 Pre-Bid Meeting:

- 17.1 The Employer may, on his own motion 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, is as stipulated in the Bidding Data. All prospective bidders or their authorized representatives shall be invited to attend such a pre-bid meeting.



17.2 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.

17.3 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 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.

17.4 Absence at the pre-bid meeting will not be a cause for disqualification of a bidder.

IB.18 Format and Signing of Bid:

18.1 Bidders are particularly directed that the amount entered on the Form of Bid shall be for performing the Contract strictly in accordance with the Bidding Documents.

18.2 All appendices to Bid are to be properly completed and signed.

18.3 No alteration is to be made in the Form of Bid nor in the Appendices 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 out 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.7 and clearly mark them "ORIGINAL" and "COPY" as appropriate. In the event of discrepancy between them, the original shall prevail.

18.5 The original and all copies of the bid shall be typed or written in indelible ink (in the case of copies, Photostats are also acceptable) and shall be signed by a person or persons duly authorized to sign on behalf of the bidder pursuant to Sub-Clause 11.1(a) 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 Form 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 as their file copy.

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 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 name and identification number of the contract as defined 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 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 package.



- (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 will be 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 22.1 and 22.2.
- 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 Form of Bid may result in forfeiture of the Bid Security in pursuance to Clause IB.15.

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



26.2 A substantially responsive bid is one which;

- (i) Meets the eligibility criteria;
- (ii) Has been properly signed;
- (iii) Is accompanied by the required Bid Security; and
- (iv) Conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation.

A material deviation or reservation is one;

- (i) Which affect in any substantial way the scope, quality or performance of the Works;
- (ii) Which limits in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the bidder's obligations under the Contract; or
- (iii) Adoption/rectification whereof would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

26.3 If a bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

IB.27 Correction of Errors:

27.1 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; and
- (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.

27.2 The amount stated in the Form 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 15.6(b) hereof.

IB.28 Evaluation and Comparison of Bids:

28.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause IB.26.



28.2 In evaluating 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 errors pursuant to Clause IB.27;
- (b) Excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including competitively priced Day work; and
- (c) Making an appropriate adjustment for any other acceptable variation or deviation.

28.3 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 Bid evaluation.

28.4 If the Bid of the successful bidder is seriously unbalanced in relation to the Employer's estimate of the cost of work to be performed under the Contract, the Employer may require the bidder to produce detailed price analysis 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 analysis, the Employer may require that the amount of the Performance Security set forth in Clause IB.32 be increased 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.

F. AWARD OF CONTRACT:

IB.29 Award:

29.1 Subject to Clauses IB.30 and IB.34, the Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest evaluated Bid Price, provided that such bidder has been determined to be eligible in accordance with the provisions of Clause IB.3 and qualify pursuant to Sub-Clause IB 29.2.

29.2 The Employer, at any stage of the bid evaluation, having credible reasons for or *prima facie* evidence of any defect in supplier's or contractor's capacities, may require the suppliers or contractors to provide information concerning their professional, technical, financial, legal or managerial competence whether already pre-qualified or not:

Provided that such qualification shall only be laid down after recording reasons therefor in writing. They shall form part of the records of that bid evaluation report.





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IB.30 Employer's Right to Accept any Bid and to Reject any or all Bids:

30.1 Notwithstanding Clause IB.29, the Employer reserves the right to accept or reject any Bid, and 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 except that the grounds for rejection of all bids shall upon request be communicated to any bidder who submitted a bid, without justification of grounds. Rejection of all bids shall be notified to all bidders promptly.

IB.31 Notification of Award:

31.1 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 "Contract Price").

31.2 No Negotiation with the bidder having evaluated as lowest responsive or any other bidder shall be permitted, however, Employer may have clarification meetings to get clarify any item in the bid evaluation report.

31.3 The notification of award and its acceptance by the bidder will constitute the formation of the Contract, binding the Employer and the bidder till signing of the formal Contract Agreement.

31.4 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.

IB.32 Performance Security:

32.1 The successful bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Bidding Data and the Conditions of Contract within a period of 28 days after the receipt of Letter of Acceptance.

32.2 Failure of the successful bidder to comply with the requirements of Sub-Clause IB.32.1 or Clauses IB.33 or IB.35 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

IB.33 Signing of Contract Agreement:

- 33.1 Within 14 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Employer will send the successful bidder the Contract Agreement in the form provided in the Bidding Documents, incorporating all agreements between the parties.
- 33.2 The formal Agreement between the Employer and the successful bidder shall be executed within 14 days of the receipt of the Contract Agreement by the successful bidder from the Employer.

IB.34 General Performance of the Bidders:

The Employer reserves the right to obtain information regarding performance of the bidders on their previously awarded contracts / works. The Employer may in case of consistent poor performance of any Bidder as reported by the employers of the previously awarded contracts, inter alia, reject his bid and / or refer the case to the Pakistan Engineering Council (PEC). Upon such reference, PEC in accordance with its rules, procedures and relevant laws of the land take such action as may be deemed appropriate under the circumstances of the case including black listing of such Bidder and debarring him from participation in future bidding for similar works.

IB.35 Integrity Pact:

The Bidder shall sign and stamp the Integrity Pact provided at Appendix-I. to Bid in the Bidding Documents for all Federal Government procurement contracts exceeding Rupees ten million. Failure to provide such Integrity Pact shall make the bidder non-responsive.

IB.36 Instructions not Part of Contract:

Bids shall be prepared and submitted in accordance with these Instructions which are provided to assist bidders in preparing their bids, and do not constitute part of the Bid or the Contract Documents.



BIDDING DATA

Note: The following specific data for the Works to be bided shall complement, amend, or supplement the provisions in the Instructions to Bidders. Wherever there is a conflict, the provisions herein shall prevail over those in the Instructions to Bidders.

Clause Reference (Instructions to Bidders)	Bidding Data
IB-1 (1.1)	<p>Name of the Employer: Federal Government Employees Housing Authority, Islamabad.</p> <p>Employer Representative & Address: Director General, Federal Government Employees Housing Authority, 10-Mauve Area, G-10/4, Islamabad.</p> <p>Scope of Bid: The Work under this Contract Package comprises of Renovation of Apartments for Federal Government Employees at Commercial Plots FL & SB, Sector 24-B, FGEHA Housing Scheme Phase-I, KDA Scheme-33, Gulzar-e-Hijri, Karachi (Package-II) as per BOQ and Specifications.</p>
IB-2 (2.1)	<p>Source of Funds: The Employer has sufficient funds of its own to cover the cost of the entire project for which these bidding documents are issued.</p>



<p>IB-3 (3.1)</p>	<p>Eligible Bidders:</p> <p>All firms / organizations who meet the qualification criteria provided in NIT and in Bidding Documents.</p> <p>Add following to IB Sub-Clause 3.2:</p> <p>Qualification of Bidder:</p> <p>To be qualified for award of the Contract, bidders shall provide evidence satisfactory to the Employer of their capability and adequacy of resources to carry out the Contract effectively. Bids shall include the following documentation and information on the relevant Forms provided at the end of this section "Bidding Data".</p>
<p>IB-3 (3.2)</p>	<ul style="list-style-type: none"> (a) Copies of original documents defining the constitution or legal status, place of registration and principal place of business; written power of attorney of the signatory of the Bid to commit the bid. (b) Total annual turnover in the civil works construction business expressed as total of payment certificates for work performed in each of the last three years. (c) Performance as prime contractor, management contractor, or proportionately as member of a joint venture or subcontractor, on works of a similar nature and complexity over the last five years, and details of other work in hand and contractual commitments. (d) Major items of Contractor's Equipment proposed for carrying out the Contract. (e) The qualifications and experience of key personnel proposed for administration and execution of the Contract, both on and off site. (f) Reports on the financial standing of the bidder including profit and loss statements, balance sheets and auditor's reports for the past three years. (g) Authority to seek references from the bidder's bankers. (h) Information regarding any litigation or arbitration resulting



	<p>from contracts executed by the bidder in the last five years or currently under execution. The information shall include the names of the parties concerned, the disputed amount, cause of litigation, and matter in dispute.</p> <p>(i) Information regarding historic non-performance and blacklisting of the bidder by government, semi government, autonomous bodies, private parties; and</p> <p>(j) Proposal of work methods and program, in sufficient detail to demonstrate the adequacy of the bidder's proposals to meet the technical specifications and the completion time referred to in Appendix-A to bid.</p> <p>For the purposes of this particular Contract, bidders shall meet the minimum qualifying criteria (Refer Evaluation & Qualification Criteria provided in this bidding document, to establish its qualifications to perform the Contract in accordance with Evaluation and Qualification Criteria, the Bidder shall provide the information requested in the corresponding information forms along with information required in this Sub-Clause 3.2).</p>
IB-6 (6.1)	<p>Site Visit:</p> <p>Delete the text and substitute with:</p> <p>The Bidder or his authorized representative shall visit and inspect the Site of Works including the areas and surroundings to be used for Contractor's Camp, on his own responsibility and at his own expense, and obtain all the information from his own sources which may be necessary for the purpose of preparing the bid. The Employer may assist but will not take any responsibility for the supply or correctness of the information.</p> <p>The Bidder shall, before submitting his bid, satisfy himself in all respects including the following:</p> <ol style="list-style-type: none"> The existing facilities in the vicinity of the Site of Work, the hydrological and climatological conditions, the form and nature of the Site of Work. The quantities and nature of the work and materials



	<p>necessary for completion of the Works.</p> <ul style="list-style-type: none"> c. The means of access to the Site of Work and exit from the Site. d. The available accommodation on land for Contractor's Camp within or outside the Site of Work. e. All necessary information as to risks, contingencies and other circumstances, which may influence or affect the bid. f. Traffic Management during construction etc. <p>Each Bidder shall also enquire and satisfy himself as to the source, the quantity of supply, the sufficiency of and the means of obtaining and transporting all plant, material, labour, fuel, water, electricity, and other matters or things required for or in connection with the Works.</p> <p>In preparing the bid, Bidder shall also consider his obligation to adequately store all materials and maintain existing facilities and all Temporary Works during the period of their usage.</p> <p>The Bidder must make local inquiries as to the physical conditions prevailing at the Site and obtain his own information on all matters and things that may in any way influence him in making a bid and fixing the rates in the Bill of Quantities. He must also satisfy himself as to the risks, obligations and responsibilities to be undertaken in accordance to the Contract to be entered into by him should his bid be accepted.</p> <p>The Bidder shall make his own investigations, enquiries and assessments, on all matters, of all conditions of existing constructions at the site and its vicinity, to his satisfaction before submitting his bid.</p>
IB-7	<p>Contents of Bidding Documents:</p> <p>Delete the text of Sub-Clause 7.1 and substitute with the following:</p> <p>The Bidding Documents are those stated below, and should be read in conjunction with any Addenda issued in accordance with Clause IB.9.</p>



	<p>Technical Bid:</p> <p>7.1.1 Volume - I:</p> <ul style="list-style-type: none"> • Instruction to Bidders. • Bidding Data. • Letter of Technical Bid & Appendices to Bid (excluding Appendix-D). • Forms of Bid Security, Performance Security, Contract Agreement, Mobilization Advance Bank Guarantee. • Part-I - General Conditions of Contract. • Part-II - Particular Conditions of Contract. • Specifications - Special Provisions. • Affidavit of Bid Security stating that the Bid Security is sealed with the Price Bid. <p>Price Bid:</p> <p>7.1.2 Volume - II:</p> <ul style="list-style-type: none"> • Letter of Price Bid. • Preamble to Bill of Quantities (BOQ). • Appendix-D to Bid (Bill of Quantities). • Bid Security.
IB-8 (8.1)	<p>Clarification of Bidding Documents:</p> <p>Time Limit for Clarifications is 7 days instead of 28 days prior to the deadline for submission of bid and after that time limit the Employer will not entertain any clarification / query etc. whatsoever in nature.</p>
IB-9 (9.1)	<p>Add the following at the end:</p> <p>"Which will also be hosted on PPRA website."</p>
IB-10 (10.1)	<p>Language of Bid:</p> <p>English</p>





<p>IB-II (11.1)</p> <p>IB-II (11.1a)</p> <p>IB-II (11.1b)</p> <p>IB-II (11.1c)</p>	<p>Documents Accompanying the Bid:</p> <p>Delete whole Clause 11 and replace with the following:</p> <p>The Bid shall comprise two envelopes submitted simultaneously, one called the Technical Bid containing the documents listed in Clause 11.1a and the other the Price Bid containing the documents listed in Clause 11.1b, both envelopes enclosed together in an outer single envelope.</p> <p>The Technical Bid shall comprise the following:</p> <ol style="list-style-type: none"> Form of Technical Bid Appendices to Bid except Appendix-D. Affidavit of Bid Security stating that the Bid Security is sealed with the Price Bid Written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with Clause 18. Documentary evidence in accordance with Clause 3.2 establishing the Bidder's qualifications to perform the contract <p>The Price Bid shall comprise the following:</p> <ol style="list-style-type: none"> Form of Price Bid Completed Price Bill of Quantities (Appendix-D), in accordance with Clause 11.1c and Clause 12. Bid Security in accordance with Clause 15. <p>The Forms of Technical Bid and Price Bid, and all documents listed under Clause 11.1a and 11.1b shall be prepared using the relevant forms furnished at the end of Bidding Data and in Appendix-D to L. The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested. In case any original document is in other language, translation in</p>
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IB-11 (11.2)	<p>bid language should be provided which must be attested by the consulate of the country of the foreign bidder. The document in bid language shall prevail in case of any discrepancy.</p> <p>Delete the sub clause 11.2.</p> <p>Joint venture and subcontracting is not applicable.</p>
IB-12 (12.2)	<p>Delete the text of Sub-Clause 12.2 and substitute with the following:</p> <p>For Scheduled and Non-Scheduled Items, Bidder Shall Quote Premium in the Form of Percentage Above or Below the estimated price put to bid provided in the Summary of Estimate. Prices provided in the estimate against items are complete inclusive value of the finished work without any hidden technical and / or financial reservations or implications. Bidders shall not modify, change, or add any footnotes or any conditions to the Estimate.</p> <p>Bid Prices:</p> <p>Add the following paragraphs:</p> <p>a) The Bidder, by the act of submitting a bid, acknowledges that he has inspected the Site of Works and determined the general characteristics and conditions. The Employer will not assume any responsibility for information, interpretations and deductions the bidder may make from the information furnished by the Employer or the Engineer. No verbal agreement or conversation with any officer, employee or agent of the Employer before, during or after the execution of the Contract shall affect or modify any of the terms or obligations contained in the Contract.</p> <p>b) The attention of the Bidder is drawn to the fact that local regulations require special formalities to be complied with in connection with the ordering, purchasing and importing of materials from outside Pakistan. Bidder will be deemed to have obtained full information about all such matters and to have allowed in his bid for all delays, additional costs and</p>

IB-12 (12.3)



	<p>financing charges that may arise directly or indirectly there from.</p> <p>c) Any neglect or failure on the part of the Bidder to obtain reliable information on the spot or elsewhere upon the foregoing or any other matters affecting the execution and completion of the Works, the rates, total amounts and the Contract shall not relieve the Bidder whose bid is accepted from any risks or liabilities or from the responsibility of completing and handing over the works.</p> <p>d) The rates and prices set down by the Bidder against all the items in the Bill of Quantities are to be the full inclusive value of the finished work described there under and shall be deemed to include all costs of performing the Works including all taxes, duties, profits and costs of accepting the general risks, liabilities and obligations of every kind set forth or implied in the Contract.</p> <p>e) The Sindh sales tax (SBR), if applicable, should also be included by the bidder in its rates.</p>
IB-13 (13.1)	<p>Currencies of Bid and Payment:</p> <p>The unit rates and the prices shall be quoted by the bidder entirely in Pak rupees (PKR). A bidder expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Employer's country shall bear all costs and risks for arranging the requirements of such currencies through his / her own resources. All payment will be made in PKR only.</p>
IB-13 (13.2)	<p>Delete whole Sub-clause 13.2.</p>
IB-14 (14.1)	<p>Bid Validity:</p> <p>Period of Bid Validity is 120 days after the date of opening of bid.</p>



<p>IB-15 (15.1)</p>	<p>Amount of Bid Security:</p> <p>Bid Security shall be minimum 3% of the quoted amount and affidavit shall be submitted by the Bidder with the Technical Bid that the bid security is sealed with the Financial / Price Bid.</p> <p>Delete and Replace with the following:</p> <p>The Bid Security shall be, at the option of the bidder, in the form of Deposit at Call or a Bank Guarantee issued by a Scheduled Bank in Pakistan or from a foreign bank duly counter guaranteed by a Scheduled Bank in Pakistan in favour of the Employer valid for a period of 28 days beyond the Bid Validity date.</p> <p>The bid Security (Original) should be submitted with the Financial / Price Bid.</p>
<p>IB-16 (16.1 & 16.2)</p>	<p>Alternate Proposals by Bidders</p> <p>Delete the text and substitute with:</p> <p>Alternate proposals by Bidders are not invited. Bidders shall only quote for the bid design.</p>
<p>IB-17 (17.1)</p> <p>IB-17 (17.2)</p>	<p>Venue, time, and date of the Pre-Bid Meeting:</p> <p>As per Notice Inviting Tender (NIT).</p> <p>Add at the end of the Para the following:</p> <p>Errors, Omissions & Queries:</p> <p>The Bidder shall notify "the Employer" of any inconsistencies, errors and omissions found in the Bid Documents, prior to the Bid opening date. Withholding of any such information which will later materially affect the contract price during construction may be considered as sufficient grounds for rejection of Bid. All queries shall be directed to:</p> <p>Project Director, Federal Government Employees Housing Authority, Karachi at the address provided in Sub-Clause 1.1 above.</p> <p>The Employer is not responsible for any verbal communications or instructions to the Bidders.</p>



<p>IB-18 (18.1)</p>	<p>Format and Signing of Bid:</p> <p>Delete Sub-Clause 18.1 and 18.2 and replace with the following:</p> <p>The Bidder shall prepare one original of the Technical Bid and one original of the Price Bid comprising the Bid as described in IB Clause-11 and clearly mark it "ORIGINAL - TECHNICAL BID" and "ORIGINAL - PRICE BID".</p> <p>Bidders are particularly directed that the amount entered on the Form of Price Bid shall be for performing the Contract strictly in accordance with the Bidding Documents.</p> <p>The original and all copies of the Bid shall be typed or written in indelible ink except Price Bid which shall be handwritten in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified below and shall be attached to the bid. All pages of the Bid, except for un-amended printed literature, shall be signed or initialed by the person signing the bid.</p>
<p>IB-18 (18.2)</p>	<p>The written confirmation of authorization to sign on behalf of the Bidder shall consist of:</p> <ul style="list-style-type: none"> (a) Power of Attorney on Judicial Paper of Rs. 100 duly attested by Notary Public; and (b) No person other than the authorized representative is allowed to conduct business during bidding process including correspondence, clarification etc. for and on behalf of bidder and ii. the event of award of the Contract during contract execution. (c) The Employer will not entertain any correspondence/ clarification / query from unauthorized representative whosoever during and after bidding process.
<p>IB-18 (18.4)</p>	<p>Number of copies of the bid to be completed and returned / submitted:</p> <p>Original + One Copy of Technical Bid and Original + One Copy of Financial / Price Bid.</p>



<p>IB-18 (18.5)</p>	<p>Delete the last sentence of this Para from "All pages the bid" and substitute with the following:</p> <p>All pages of the bid including appendices, addendum, corrigenda, clarifications, supplementary information as are issued shall be completed, initialed and stamped by the person or persons signing the bid.</p> <p>One (01) copy of Power of Attorney must be attached with the Technical Bid submitted to the Employer, if the Bid is signed / executed by a person other than the President, Partner or Owner of the Bidder's Company.</p>
<p>IB-18 (18.6)</p>	<p>Delete the text and substitute with the following:</p> <p>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 initialled by the person or persons signing the bid. Each correction shall be separately signed and stamped. Over-writing, erasures, use of whitening fluid, correction tape for making corrections is not permitted. Non-compliance of these instructions may be construed as sufficient ground to render the bid non-responsive.</p>
<p>IB-18 (18.7)</p>	<p>At the end of this Para, add the following:</p> <p>Bids shall be prepared and submitted on the forms of "Technical Bid" and "Price Bid" provided. All blank spaces must be filled in and completed form must be without interlineations or alteration of the original wording. Bids with incomplete and / or unsigned Form of Bids may be rejected / considered non-Responsive. The Bidder shall stamp and sign each page of Bid Documents for the purpose of identification and acknowledgement of acceptance thereof.</p> <p>The Bids must conform in all respects to the Bidding Documents.</p>



<p>IB-19 (19.1)</p>	<p>Sealing & Marking of Bids: Delete Sub-Clause 19.1 and replace with the following:</p> <p>Bidders may always submit their bids by mail or by hand. Procedures for submission, sealing and marking are as follows:</p> <p>Bidders submitting bids by mail or by hand shall enclose the original of the Technical Bid, the original of the Price Bid, and copy of the Technical Bid and copy of the Price Bid, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL - TECHNICAL BID", "ORIGINAL - PRICE BID" and "COPY OF TECHNICAL BID" and "COPY OF PRICE BID." These envelopes, the first containing the originals and the others containing copies, shall then be enclosed in one single envelope per set.</p> <p>Employer's address for purpose of Bid submission: As per Sub-clause 1.1 above.</p> <p>Name and Number of Contract: Renovation of Apartments for Federal Government Employees at Commercial Plots FL & SB, Sector 24-B, FGEHA Housing Scheme Phase-I, KDA Scheme-33, Gulzar-e-Hijri, Karachi. Contract Package No. II.</p>
<p>IB-20 (20.1)</p>	<p>Deadline for submission of bids: As notified in NIT.</p>
<p>IB-23 (23.1)</p>	<p>Venue time and date of Bid opening: Delete Sub-Clause 23.1 and replace with the following:</p> <p>The Employer shall open the Technical Bids in public at the address, date and time specified in the Invitation for bids (NIT) in the presence of Bidders designated representatives and anyone who choose to attend. The Price Bids will remain unopened and will be held in custody of the Employer until the specified time of their opening.</p>



<p>IB-23 (23.3)</p>	<p>Delete Sub-Clause 23.3 and replace with the following:</p> <p>All other envelopes holding the Technical Bids shall be opened one at a time, and the following read out and recorded:</p> <ul style="list-style-type: none"> (a) Name of the Bidder. (b) Whether there is a modification or substitution. (c) Presence of affidavit of Bid Security (stating that Bid Security is submitted with the Price Bid). (d) Any other details as the Employer may consider appropriate. <p>Only Technical Bids read out and recorded at bid opening shall be considered for evaluation. No Bid shall be rejected at the opening of Technical Bids except for late bids, in accordance with Clause 21.</p>
<p>IB-23 (23.4)</p>	<p>Delete Sub-Clause 23.4 and replace with the following:</p> <p>At the end of the evaluation of the Technical Bids, the Employer will invite bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified for award to attend the opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Employer. Bidders shall be given reasonable notice for the opening of Price Bids.</p>
<p>IB-23 (23.5)</p>	<p>Add the following to Sub-Clause 23.5:</p> <p>The Employer will notify bidders in writing who have been rejected on the grounds of their Technical Bids being substantially non-responsive to the requirements of the Bidding Document and return their Price Bids unopened.</p>
<p>IB-23 (23.6)</p>	<p>Add the following to Sub-Clause 23.6:</p> <p>The Employer shall conduct the opening of Price Bids of all Bidders who submitted substantially responsive Technical Bids, in the presence of Bidders representatives who choose to attend at the address, date and time specified by the Employer. The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance.</p>



<p>IB-23 (23.7)</p>	<p>Add the following to Sub-Clause 23.7:</p> <p>All envelopes containing Price Bids shall be opened one at a time and the following read out and recorded:</p> <ul style="list-style-type: none"> (a) Name of the Bidder. (b) Whether there is a modification or substitution. (c) The Bid Prices including any discounts (if any). (d) Any other details as the Employer may consider appropriate. <p>Only Price Bids and discounts (if any) read out and recorded during the opening of Price Bids shall be considered for evaluation. No Bid shall be rejected at the time of opening of Price Bids.</p> <p>Add the following to Sub-Clause 23.8:</p> <p>The Employer shall prepare a record of the opening of Price Bids that shall include, as a minimum: the name of the Bidder, the Bid Price, any discounts, and alternative offers. The Bidders' representatives who are present shall be requested to sign the record.</p>
<p>IB-24 (24.2)</p>	<p>Process to be Confidential:</p> <p>Add the following sub-Para:</p> <p>Documents submitted by Bidders in connection with the Bid for above named Works will be treated as confidential and will not be returned.</p>
<p>IB-26 (26.1)</p>	<p>Examination of Bids and Determination of Responsiveness:</p> <p>Add following paragraph at the end of Sub Clause 26.1:</p> <p>The Employer shall examine the Technical Bid to confirm that all documents and technical documentation requested in Clause-11 have been provided, and to determine the completeness of each document submitted.</p> <p>The Employer shall confirm that the following documents and information have been provided in the Technical Bid. If any of these documents or information is missing, the offer shall be rejected.</p>



- i. Letter of Technical Bid.
- ii. Written confirmation of authorization to commit the Bid.
- iii. Affidavit of Bid Security (stating that the Bid Security is submitted with the Price Bid).

Examination of Bids and Determination of Responsiveness:

Add the following text at the end of Sub-Clause 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 IB-11.

A substantially responsive Technical Bid is one that meets the requirements of the Bidding Document without material deviation.

The Employer shall examine the technical aspects of the Bid submitted in accordance with IB-11 to confirm that all requirements of Works and Bidding Documents have been met without any material deviation. Provided that a bid is substantially responsive, the Procuring Agency may waive any non-conformity in the Bid that does not constitute a material deviation, reservation or omission. Provided that a Technical 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 non-conformities in the Technical Bid related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the Price Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

Provided that a Technical Bid is substantially responsive, the Employer shall rectify non-material non-conformities 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. The adjustment shall be made using the method indicated in Evaluation and Qualification Criteria.

The Employer shall determine to its satisfaction during the evaluation of Technical Bids whether Bidders meet the

IB-26 (26.2)



	<p>qualifying criteria specified in Evaluation and Qualification Criteria.</p> <p>The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to Sub Clause 3.2.</p> <p>An affirmative determination shall be a pre-requisite for the opening and evaluation of a Bidder's Price Bid. A negative determination shall result into the disqualification of the Bid, in which event the Employer shall return the unopened Price Bid to the Bidder.</p>
IB-27 (27.1)	<p>Correction of Errors:</p> <p>Delete the text of Sub-Clause 27.1 and substitute with the following:</p> <p>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:</p> <p>For both Scheduled and Non-Scheduled items:</p> <p>(a) Where there is a discrepancy between the quoted premium (above or below) provided by the bidder in summary of Estimate and in the form of Bid, the quoted premium stated in the form of Bid shall govern.</p> <p>(b) Where there is a discrepancy between the Premium / amount in figures and in words, the premium / amount in words shall govern; and</p> <p>(c) Where there is a discrepancy between the Percentage Premium and the total amount quoted by the Bidder by multiplying the percentage premium with the price put to Bid, the value provided as premium shall govern and total amount shall be corrected.</p>



<p>IB-28 (28.4)</p>	<p>Evaluation and Comparison of Bids:</p> <p>In the text of sub-clause 28.4, in the sixth line, after the words, "the Employer may" add the following words: "take action under sub-clause 28.5 or may".</p> <p>If the successful bidder failed to submit Performance Security of increased amount within twenty-eight (28) days of demand by the Employer, his bid shall be cancelled, and his bid security shall be forfeited.</p> <p>Add the following Sub-Clause 28.5:</p> <p>A bid with highly inflated or unworkable rates of any BOQ items may be considered non-conforming and rejected. The Employer may also disqualify such bidder from participating in the subsequent bids who submits such unbalanced and / or unworkable rates of major items of work.</p>
<p>IB-29 (29.2)</p>	<p>Award of Contract:</p> <p>Add the following sub-Para:</p> <p>The Employer does not bind himself to award the Contract to the lowest or to any Bidder but will take into careful consideration the bidder's prices and such other factors as are deemed applicable.</p>
<p>IB-31 (31.5)</p>	<p>Add new Sub-clause 31.5:</p> <p>The Successful bidder shall furnish to the Employer, detailed Rate Analysis of all items of work within 28 days after the receipt of Letter of Acceptance.</p>

<p>IB-32 (32.1)</p>	<p>Performance Security:</p> <p>Delete the text of Sub-Clause 32.1 and substitute with the following:</p> <p>The successful bidder shall provide a Performance Security in the prescribed Form annexed to these Documents. The said Security shall be furnished by the successful bidder within twenty-eight (28) days after the receipt of Letter of Acceptance. The Performance Security shall be of an amount equal to ten percent (10%) of the Contract Price in the currency(ies) of the Contract at the option of the bidder, in the form of Bank Guarantee from any Scheduled Bank in Pakistan or from a bank located outside Pakistan duly counter-guaranteed by a Scheduled Bank in Pakistan or an insurance company having at least AA rating from PACRA / JCR.</p> <p>Delete Sub-Clause 32.2 and replace with the following:</p> <p>Failure of the successful bidder to comply with the requirements of Sub-Clause IB-31.5 or IB-32.1 or Clauses IB-33 or IB-35 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.</p>
<p>IB-33 (33.3)</p>	<p>Add new Sub-Clause 33.3:</p> <p>Stamp Duty:</p> <p>The formal Agreement between the Procuring Agency and the successful bidder shall be duly stamped at rate of 0.35% of bid price (updated from time to time) stated in Letter of Acceptance.</p>



FORMS OF TECHNICAL QUALIFICATIONS

Form 1: Bidder Information Form:

Company Profile

All individual firms and each partner of a joint venture submitting bid are requested to complete the information in this form.

1.	Name of firm (legal):	
2.	Nature of Business: (Whether the firm is a Corporation, Partnership, Trust etc.) (In case of Consortium; whether the Lead Consortium Member is a Corporation, Partnership, Trust etc.)	
3.	Head Office address:	
4.	Telephone: Fax Number: E-mail address:	
5.	Place of Incorporation/Registration: Year of Incorporation/Registration:	
6.	Applicant's authorized representative: Telephone Fax numbers: E-mail address:	
7.	NATIONALITY OF OWNERS	
	Name:	Country:

Form 2: Historical Contract Non-Performance:

Each Bidder or each member of a JV must fill in this form

Non-Performing Contracts			
<input type="checkbox"/> Contract non-performance did not occur within the last two (02) years prior to the deadline for bid submission based on all information on fully settled disputes or litigation (Affidavit to be provided on Rs. 100 Stamp paper attested by Notary Public)			
<input type="checkbox"/> Contract non-performance during the stipulated period,			
Year	Outcome as Percent of Total Assets	Contract Identification	Total Contract Amount (current value, PKR)
		Contract Identification: Name of Employer: Address of Employer: Matter in dispute:	

Bid Security Declaration
<input type="checkbox"/> Bidder shall not be under execution of a Bid-Securing Declaration (Affidavit to be provided on Rs. 100 Stamp paper attested by Notary Public)

Blacklisting
<input type="checkbox"/> Bidder shall not be blacklisted by government / semi government / autonomous / private organizations (Affidavit to be provided on Rs. 100 Stamp paper attested by Notary Public)



Pending Litigation			
<input type="checkbox"/> No pending litigation (A fully settled dispute or litigation is one that has been resolved in accordance with the Dispute Resolution Mechanism under the respective contract and where all appeal instances available to the Bidder have been exhausted) (Affidavit to be provided on Rs. 100 Stamp paper attested by Notary Public)			
<input type="checkbox"/> Pending litigation (All pending litigation shall in total not represent more than 50% of the Bidder's net worth and shall be treated as resolved against the Bidder)			
Year	Outcome as Percent of Total Assets	Outcome as Percent of Total Assets	Total Contract Amount (PKR)
		Contract Identification: Name of Employer: Address of Employer: Matter in dispute:	



Form 3: Financial Situation:

Each Bidder or each member of a JV must fill in this form

Financial Data for Previous 3 Years

Information from Balance Sheet

	Year 2021-22	Year 2020-21	Year 2019-20
Total Assets			
Total Liabilities			
Current Assets			
Current Liabilities			

Information from Income Statement

Total Revenues of Construction			
Profits Before Taxes			
Profits After Taxes			

- ☐ Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last three years, as indicated above, complying with the following conditions.
- All such documents reflect the financial situation of the Bidder or partner to a JV, and not sister or parent companies.
 - Historic financial statements must be audited by a certified accountant.
 - Historic financial statements must be complete, including all notes to the financial statements.
 - Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).
 - NTN certificate must be attached
 - Foreign firms if participating in the bidding process should submit NTN Certificate of their country duly attested by Consulate of their country



Form 4: Average Annual Construction Turnover:

Each Bidder or each member of a JV must fill in this form

Annual Turnover Data for the Last 3 Years (Construction only)	
Year	Amount (PKR)
2021-22	
2020-21	
2019-20	

Average Annual Construction Turnover

The information supplied should be the Annual Turnover (Construction only) of the Bidder or each member of a JV in terms of the amounts billed to clients for each year for work in progress or completed.



Form 5: 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 as indicated in the Qualification Criteria.

Financial Resources		
No.	Source of financing	Amount (PKR)
1		
2		
3		
4		



Form 6: Current Contract Commitments / Works in Progress:

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

Current Contract Commitments					
No.	Name of Contract	Employer's Contact Address, Tel, Fax	Value of Outstanding Work [PKR]	Estimated Completi on Date	Average Monthly Invoicing Over Last Six Months [PKR/month]
1					
2					
3					
4					
5					
6					





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Sr. No.	1	2	3	4	5
Name of Contractor:					
Country:					
Name of Procuring Agency with Address, Tele, Fax.					
Nature of works and special features relevant to the contract for which applied:					
Contract Role (Mention: Sole, Sub Contractor or Partner in a joint Venture).					
Value of the total contract in Pak/Rs:					
Date of Award:					
Date of Completion:					
Cost per day Index					

Form 7: Details of Contracts of Similar Nature and Complexity completed over the last 05 years:

Form 8: Personnel Capabilities:

Bidder should provide the names of suitably qualified personnel to meet the specified requirements stated in Evaluation and Qualification Criteria.

Sr. No.	Title of Position	Name
1		
2		
3		
4		
5		

Form 09: Curriculum Vitae (CV) for Proposed Experts:

1. Proposed Position: _____
2. Name of Expert & PEC Registration No: _____
PEC Registration No: _____
3. Name of Firm: _____
4. Current Residential address: _____
Telephone No: _____ Fax No: _____
E-Mail Address: _____
5. Date of Birth: _____ Citizenship: _____
6. Qualification: _____
7. Work Experience: Summarize professional experience in reverse chronological order.
Indicate particular technical and managerial experience relevant to the project.

From	To	Company / Project / Position / Relevant Technical and Management Experience



Form 10: Plant & Equipments:

Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment whether owned / leased / rented, listed Evaluation and Qualification Criteria.

A. Equipment Capabilities (Owned by the contractor / firm)

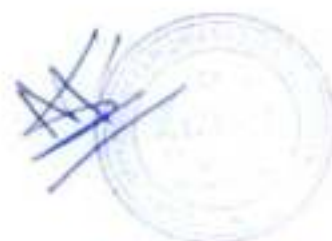
Sr. No	Name of Equipment	Name of Manufacturer	Model and power rating	Capacity	Year of Manufacture	Current Location
1						
2						
3						
4						
5						
6						
7						
8						
9						

Note: Provide copies of ownership of equipment.

B. Equipment Capabilities (Leased / rented by the contractor / firm)

Sr. No	Name of Equipment	Mention whether leased or rented	Name of Owner	Address of owner	Contact name and title with Telephone Fax & Email of the owner	Agreements Details of rental/ lease/ manufacture agreements specific to the project
1						
2						
3						
4						
5						
6						
7						
8						
9						

Note: Provide copies of Lease Agreement / Rent Agreement.



**FORM OF BID AND APPENDICES
TO BID**



FORM OF TECHNICAL BID

Bid Reference No. _____
(Name of Contract/Work)

To:

1. Having examined the bidding documents including Instructions to Bidders, Bidding Data, and Conditions of Contract, Specifications, Drawings and Bill of Quantities and Addenda Nos. _____ for the execution of the above-named work, we/I, the undersigned, offer to execute and complete the work and remedy any defects therein in conformity with the Conditions of Contract, Specifications, Drawings, Bill of Quantities and Addenda.
2. We/I understand that all the Appendices attached hereto form part of this bid.
3. Our bid consisting of the Technical Bid and the Priced Bid shall be valid for a period of _____ based 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. As security for due performance of the undertakings and obligations of this bid, we/I submit herewith a bid security in the amount of Rupees _____ (Rs. _____) drawn in your favour or made payable to procuring agency.
4. We/I 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 Appendix-A to Bid.
5. We/I agree to abide by this bid for the period of _____ days from the date fixed for opening the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
6. 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.
7. We do hereby declare that the bid is made without any collusion, comparison of figures or arrangement with any other bidder for the works.



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

Dated _____ this of _____ 2022.

Signature: _____
in the capacity of _____ duly authorized to sign Bids for and on behalf of

(Name of Bidder in Block Capitals)
(Seal)

Address: _____

Witness-1:

Signature: _____

Name: _____

CNIC: _____

Address: _____

Occupation: _____

Witness-2:

Signature: _____

Name: _____

CNIC: _____

Address: _____

Occupation: _____



SPECIAL STIPULATIONS

S. No.	Description	Clause Conditions of Contract	Explanation
1	Employer's name and address	1.1(a)(i)	Employer: Federal Government Employees Housing Authority, Islamabad. Representative & Address: Director General, Federal Government Employees Housing Authority. 10-Mauve Area, G-10/4, Islamabad.
2	Engineer's name and address	1.1(a)(iv)	Project Director, Federal Government Employees Housing Authority, Karachi. 2 nd Floor, Working Women's Hostel, Opposite Garden Police Headquarters Agha Khan-III Road, Karachi.
3	Notice, Consent, Approval etc.	1.5	Scanned copy via WhatsApp are acceptable, if the original is received within three days.
4	Engineer's Authority to issue Variation in emergency	2.1	2% of the Contract Price stated in the Letter of Acceptance.
5	Variation	2.1(b)	No approval is required by the Engineer if the amount needed is up to PKR. 500,000/-.
6	Subcontracting	4.1	Subcontracting is not allowed.
7	Law	5.1 (b)	The Law of Islamic Republic of Pakistan.
8	Amount of Performance Security	10.1	10% of Contract Price stated in the Letter of Acceptance.



9	Time for Furnishing Programme	14.1	Within 14 days from the date of receipt of Letter of Acceptance.
10	Minimum amount of Third-Party Insurance	23.2	Type of cover: The Third-Party Insurance Policy must contain following conditions of indemnification per occurrence with the number of occurrence unlimited: i) In case of death, PKR 1,000,000/- per person. ii) In case of major injury, PKR 500,000/- per person. iii) In case of minor injury, PKR 100,000/- per person. iv) In case of damage to property, full amount of repair / replacement as the case may be.
11	Minimum amount of Workmen Compensation Insurance	24.2	Workers: i) In case of death, PKR 1,000,000/- per person. ii) In case of major injury, Pak Rs. 500,000/- per person. iii) In case of minor injury, PKR 100,000/- per person.
12	Time for Issue of Engineer's Notice to Commence	41.1	Within 07 days of signing the Contract Agreement.
13	Time for Commencement	41.1	Within 07 days of receipt of the Engineer's Notice to Commence.
14	Possession of Site	42.1	Immediately after receipt of the Engineer's Notice to Commence.
15	Time for Completion	43.1	One hundred fifty (150) days from the date of receipt of the Engineer's notice to commence.



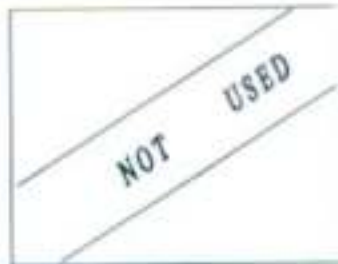
16	Normal Working Hours	45.1	08 hours a day and 06 days a week.
17	Amount of Liquidated Damages	47.1	0.1% of the contract price for each day of delay in completion of the Works subject to a maximum of 10% of Contract Price stated in the Letter of Acceptance.
18	Amount of Bonus	47.3	Not Applicable / Deleted.
19	Taking Over Certificate	48.1	The Work shall be considered substantially completed if whole of the work is completed to the satisfaction of the Engineer, including cleaning of site. Only One Certificate Shall be issued.
20	Taking Over of Sections or Parts	48.2	Deleted
21	Substantial Completions of Parts	48.3	Deleted
22	Defects Liability Period	49.1	Three hundred sixty-four (364) days from the effective date of Taking Over Certificate.
23	Minimum amount of Interim Payment Certificates	60.2	Three Million.
24	Time for Certification of Interim Payment Certificate by the Engineer	60.2	28 days from the receipt of statement from the Contractor.
25	Retention Money	60.2	10% of the amount of Interim Payment Certificate, maximum up to 5% of the Contract Price stated in Letter of Acceptance.
26	Time of payment from delivery of Interim Payment Certificate from the Engineer to the Employer	60.10	28 days.
27	Rate of interest on delayed payment	60.10	Not Applicable / Deleted.
28	Mobilization Advance	60.12	Deleted.



29	Increase or Decrease of Cost	70,1	Not Applicable / Deleted.
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FOREIGN CURRENCY REQUIREMENTS



PRICE ADJUSTMENT UNDER CLAUSE 70
OF CONDITIONS OF CONTRACT



BILL OF QUANTITIES

REFER PRICE BID



PROPOSED CONSTRUCTION SCHEDULE

Pursuant to Sub-Clause 43.1 of the General Conditions of Contract, the Works shall be completed on or before the date stated in Appendix-A to Bid. The Bidder shall provide as Appendix-E to Bid, the Construction Schedule in the bar chart (CPM) 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 parts of the Works may meet Employer's completion targets in days noted below and counted from the date of receipt of Engineer's Notice to Commence (Attach sheets as required for the specified form of Construction Schedule):

<u>Description</u>	<u>Time for Completion</u>
a) Whole Works	_____ days
b) Part-A	_____ days (If applicable)
c) Part-B	_____ days (If applicable)
d) _____	_____ days



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 indicating 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. The method of executing the Works, the procedures for installation of equipment and machinery and transportation of equipment and materials to the site.



LIST OF MAJOR EQUIPMENT – RELATED ITEMS

[The Bidder will provide on Sheet 2 of this Appendix 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 which shall be in sufficient detail to demonstrate fully that the equipment will meet all requirements of the Specifications.]

LIST OF MAJOR EQUIPMENT

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						



CONSTRUCTION CAMP AND HOUSING FACILITIES

The Contractor in accordance with Clause 34 of the Conditions of Contract shall provide description of his construction camp's facilities and staff housing requirements.

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.

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) 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.).



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
N / A	



ESTIMATED PROGRESS PAYMENTS

Bidder's estimate of the value of work which would be executed by him during each of the periods stated below, based on his Programme of the Works and the Rates in the Bill of Quantities, expressed in percentage of Bided Price.

Months	% of Bided Price
(a)	(b)
1st Month	
2nd Month	
3rd Month	
4th Month till completion of project	
Total	100%

ORGANIZATION CHART
FOR THE
SUPERVISORY STAFF AND LABOUR



(INTEGRITY PACT)

**DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC.
PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS**

Contract No. _____ Dated _____

Contract Value: _____

Contract Title: _____

..... [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 (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 Supplier] 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 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, representation or warranty.

[name of Supplier] 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 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.

Name of Buyer:

Name of Seller/Supplier:

Signature:

Signature:

[Seal]

[Seal]



QUALIFICATION CRITERIA

Qualification of Bidders shall be evaluated on the basis of mentioned criteria with 60% score as a whole and at least 50% score in each category regarding the Bidder's financial soundness, experience record, personnel capabilities and equipment capabilities, in addition to fulfillment of mandatory requirements.

The Employer reserves the right to waive minor deviations, if they do not materially affect the capability of the Bidder to perform the Contract.

A. Mandatory Requirements:

- i. Valid registration with PEC in C-6 or above, in relevant code of specializations CE09, CE10, and CE21.
- ii. Affidavit of no blacklisting prepared within the current month of submission of bidding document.
- iii. Information on any litigation or arbitration resulting from contracts completed or under execution by the Bidder. In case, the firm has never been involved in litigation, an affidavit to such effect should be provided.
- iv. Registration with income tax department (Valid NTN).
- v. On Active Tax Payer's List at the time of submission of Bid.

B. Detailed Requirements:

The detailed qualification evaluation shall be carried out on the basis of the criteria for the different categories and minimum passing marks prescribed hereunder:

S.No.	Category	Weightage / Marks	Minimum Passing Marks in Each Category (Mandatory)	Total Minimum Passing Marks
1.	Financial Soundness	40	50%	70%
2.	Work Experience	40		
3.	Key Personnel	10		
4.	Plant & Equipment	10		
	Total:	100		

1. Financial Soundness:

The Bidder shall submit copies of annual audit reports for the last three consecutive years duly certified by the Chartered Accountant.

The minimum annual volume of construction work (Annual Turn-Over) shall be PKR. 25 million during any of last three consecutive years.



BM-2
Appendix-M to Bid

S.No.	Annual Turn Over	Marks	Maximum Marks
a)	PKR 25 Million	35.00	35.00
b)	For Each Increment of PKR 5 Million	1.00	5.00
	Total Marks Allowed		40.00

2. Work Experience:

Points for experience will be given on the basis of the following criteria:

S.No.	Sub-Category	Maximum Marks	Marks Allocation
a)	Project of similar nature and complexity completed as a prime contractor in last five years.	30.00	<ul style="list-style-type: none"> 15 marks will be awarded for each completed project having cost greater than or equal to PKR 20 Million. 10 marks will be awarded for each completed project having cost PKR 15 Million to PKR 19.99 Million. 6 marks will be awarded for each completed project having cost PKR 12 Million to PKR 14.99. No mark will be awarded for completed projects having cost less than 12 Million.
b)	Experience in Construction Industry as Contractor for at least 05 years prior to the Bid submission deadline.	10.00	<ul style="list-style-type: none"> For 05 years experience, 07 marks will be awarded. One mark for each increment of one year. No mark will be awarded for experience less than 05 years.
	Total Marks Allocated	40.00	

Note:

- The bidder must provide Taking-Over / Completion Certificate of completed projects. No marks will be awarded for the projects for which above-mentioned certificate is not provided.
- The bidder must provide Article of Incorporation, Documents of Constitution or Documents of Registration of his / her firm.



3. Key Personnel:

Description / Position with Qualification & Experience	Maximum Marks	Marks Allocation
Site Engineer (B.Sc.in Civil Engineering / Public Health Engineering registered with Pakistan Engineering Council)	6.00	<ul style="list-style-type: none"> 04 marks will be awarded for experience of 03 years. One mark will be awarded for each increment of one year. No mark will be awarded for experience less than 03 years.
Site Supervisor (Diploma of Associate Engineer in Civil Engineering from Board of Technical Education)	2.00	<ul style="list-style-type: none"> One mark will be awarded for experience of 03 years. 0.5 marks will be awarded for each increment of one year. No mark will be awarded for experience less than 03 years.
Quantity Surveyor (Diploma of Associate Engineer in Civil Engineering from Board of Technical Education)	2.00	<ul style="list-style-type: none"> One mark will be awarded for experience of 03 years. 0.5 marks will be awarded for each increment of one year. No mark will be awarded for experience less than 03 years.
Total Marks	10.00	-

Note:

- The bidder must provide verifiable proof of employment of the staff and attach detailed CV's, valid PEC Registration Certificates (for Graduate Engineers), and DAE certificates (for Associate Engineers).

4. Plant & Equipment:

S.No.	Description of Equipment	Minimum Requirement	Marks
1	Vibrator	1.00	1.00
2	Generator (5 KVA)	1.00	1.00
3	Concrete Mixing Machine	1.00	0.5
4	Plumbing Tools & Plants	-	3.00
5	Iron Works Tools & Plants	-	3.00
6	Carpenting Tools & Plants	-	1.5
Total Marks		-	10.00

Note:

- The bidder must provide the ownership documents for owned equipments, and for leased / rented he / she must provide lease / rental agreement(s) / affidavit on stamp paper.



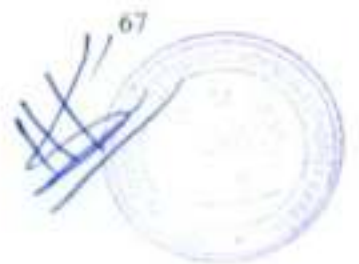
FORMS

BID SECURITY

PERFORMANCE SECURITY

CONTRACT AGREEMENT

MOBILIZATION ADVANCE GUARANTEE / BOND



BID SECURITY
(Bank Guarantee) / Insurance Bond

Security Executed on _____
(Date)

Name of Surety (Bank) with Address: _____
(Scheduled Bank in Pakistan)/Insurance Company

Name of Principal (Bidder) with Address _____

Penal Sum of Security Rupees. _____ (Rs. _____)

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 Bid No. _____ for _____ (Particulars of Bid) to the said Employer; and

WHEREAS, the Employer has required as a condition for considering said Bid that the Bidder furnishes a Bid Security in the above said sum from a Scheduled Bank in Pakistan or from a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan, to the Employer, conditioned as under:

- (1). that the Bid Security shall remain in force up to and including the date 28 days after the deadline for validity of bids as stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Surety is hereby waived;
- (2). that the Bid Security of unsuccessful Bidders will be returned by the Employer after expiry of its validity or upon signing of the Contract Agreement; and
- (3). that in the event of failure of the successful Bidder to execute the proposed Contract Agreement for such work and furnish the required Performance Security, the entire said sum be paid immediately to the said Employer pursuant to Clause 15.6 of the Instruction 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.



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 be the sole and final judge for deciding 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:

1. _____

Corporate Secretary (Seal)

2. _____

Name, Title & Address

SURETY (Bank)

Signature _____

Name _____

Title _____

Corporate Guarantor (Seal)



**FORM OF PERFORMANCE SECURITY
(Bank Guarantee)**

Guarantee No. _____
 Executed on _____
 Expiry date _____

[Letter by the Guarantor to the Employer]

Name of Guarantor (Bank) with address: _____
 (Scheduled Bank in Pakistan)

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 49, Defects Liability, 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 defenses 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 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 be the sole and final judge for deciding 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 (Bank)

Witness:

1. _____

Signature _____

Name _____

Corporate Secretary (Seal)

Title _____

2. _____

Name, Title & Address

Corporate Guarantor (Seal)



FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the "Agreement") made on the _____ day of _____ (month) 20____ between _____ (hereafter called the "Employer") of the one part and _____ (hereafter 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 witnesseth 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 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, viz:
 - (a) The Contract Agreement;
 - (b) The Letter of Acceptance;
 - (c) The completed Form of Bid (Technical and Financial);
 - (d) Special Stipulations (Appendix-A to Bid);
 - (e) The Particular Conditions of Contract - Part II;
 - (f) The General Conditions - Part I;
 - (g) The completed Appendices to Bid (B, C, E to L);
 - (h) The Drawings;
 - (i) The Special Provisions & Technical Specifications.
 - (j) The Priced Bill of Quantities (Appendix-D to Bid);
 - (k) Any other document forming part of 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 the Contactor

(Seal)

Signature of Employer

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

(Name, Title and Address)

Witness:

(Name, Title and Address)

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A handwritten signature in blue ink is written over a circular official stamp. The stamp contains text that is partially obscured by the signature.

MOBILIZATION ADVANCE GUARANTEE

Guarantee No. _____ Date _____

WHEREAS _____ (hereinafter called the 'Employer') has entered into a Contract for _____
(Particulars of Contract)
with _____ (hereinafter called the 'Contractor').

AND WHEREAS, the Employer has agreed to advance to the Contractor, at the Contractor's request, an amount of Rupees _____ (Rs _____) 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, _____
(Scheduled Bank in Pakistan)
(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, of which the Employer shall be the sole and final judge, on the part of the Contractor, 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 Interim Payment Certificates of the Contractor or until _____ whichever is earlier.

(Date)

The Guarantor's liability under this Guarantee shall not in any case exceed the sum of Rupees _____ (Rs _____).



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 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

1. Signature _____
2. Name _____
3. Title _____

WITNESS

1. _____

Corporate Secretary (Seal)

2. _____

(Name Title & Address)

Corporate Guarantor(Seal)



PART-1: GENERAL CONDITIONS OF CONTRACT



GENERAL CONDITIONS OF CONTRACT

PART I GENERAL CONDITIONS

The General Conditions shall be the Conditions of Contract for Construction for Building and Engineering Works prepared by the International Federation of Consulting Engineers (Fédération Internationale des Ingénieurs-Conseils, or FIDIC), and is commonly known as the FIDIC Conditions of Contract. The used version is the **4th Edition 1987, reprinted in 1992 with further amendments.**

Copies of the FIDIC Conditions of Contract can be obtained from:

FIDIC Secretariat
P.O. Box 86
1000 Lausanne 12
Switzerland
Fax: +41 21 653 5432
Telephone: +41 21 654 4411
Email: fidic.pub@fidic.org
URL: <http://www.fidic.org/bookshop>



PART II - PARTICULAR CONDITIONS OF CONTRACT

1.1 Definitions

- (a) (i) The Employer is:
The "Employer" is Federal Government Employees Housing Authority, Islamabad the legal successors and any assignee of such person.
- (a) (iv) The Engineer is:
Project Director, Federal Government Employees Housing Authority, Karachi.

Add the following to sub-clause 1.1(a):

- (vi) **"Employer's Representative"** means the (Director General, FGEHA, Islamabad) or other person from time to time, duly appointed in writing by the Employer.
- (vii) **"Engineer-in-charge"** means the same as The Engineer.

- (viii) **"Bidder or Tenderer"** means any person or persons, company, corporation, firm or joint venture submitting a Bid or Tender, and

The word "Tender" is synonymous with "Bid" and the word "Tender Documents" with "Bidding Documents".

Amend Part I, Clause 1.1(b)(viii) to read as under:

Throughout Part I, the term "Appendix to Tender" shall be replaced by "Appendices to Tender"

"Appendices to Tender" means Appendix A through L, annexed to the Tender and forming a part thereof.

Add the following to sub-clause 1.1(b):

- (ix) **"Programme"** means the programme to be submitted by the Contractor in accordance with Sub-Clause 14.1 and any approved revisions thereto.
- (x) **"Addendum/ Addenda"** means interpretation of and/or changes in the Tender Documents and understood upon issuance by the Employer to become an integral part of the Bid Documents and the Contract Documents, wherever applicable.

- (e) (i) The text is deleted and substituted with the following:

"Contract Price" means the sum stated in the Letter of Acceptance as payable to the Contractor for the execution and completion of the Works subject to such additions thereto or deductions therefrom as may be made and remedying of any defects therein in accordance with the provisions of the Contract.

The Contract Price shall include all taxes, duties and other charges imposed inside and/or outside the Country on the production, manufacture, sale and transport of the Contractor's Equipment, Plant, Materials and supplies to be used on or furnished under the Contract, and on the services to be performed under the Contract.



Add the following to sub-clause 1.1(g):

"Approved" means approved by the Engineer in writing, including subsequent written confirmation of previous verbal approval and "approval means approval in writing, including as aforesaid.

2.1 Engineer's Duties and Authority

With reference to Sub-Clause 2.1(b), the following provisions shall also apply;

The Engineer shall obtain the specific approval of the Employer in writing before taking any of the following actions specified in General Conditions of Contract Part I:

- (i) approving sub-letting of any part of the Works under Clause 4;
- (ii) certifying additional cost under Clause 6
- (iii) certifying additional cost under Clause 12
- (iv) certifying additional cost under Clause 17
- (v) certifying additional cost under Clause 20
- (vi) certifying additional cost under Clause 27
- (vii) certifying additional cost under Clause 40
- (viii) certifying additional cost under Clause 42
- (ix) determining an extension of time under Clause 44
- (x) issuing a taking over certificate (s) under Clause 48
- (xi) issuing a variation order(s) under Clause 51
- (xii) certifying additional costs and/or fixing rates or prices under Clause 52;
- (xiii) notifying acceptance of principles of claims and/or certifying additional cost under Clause-53
- (xiv) issuing instructions under Clause 58
- (xv) issuing a Defects Liability Certificate under Clause 62
- (xvi) certifying additional payment under Clause 65
- (xvii) certifying additional cost under Clause 70

2.2 Engineer's Representative

The following paragraph is added:

The Employer shall ensure that the Engineer's Representative is a professional engineer as defined in the Pakistan Engineering Council Act 1975 (V of 1976)

The following Sub-Clauses 2.7 and 2.8 are added:

2.7 Engineer Not Liable

Approval, reviews and inspection by the Engineer of any part of the Works does not relieve the Contractor from his sole responsibility and liability for the supply of



materials, plant and equipment for construction of the Works and their parts in accordance with the Contract and neither the Engineer's authority to act nor any decision made by him in good faith as provided for under the Contract whether to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Engineer to the Contractor, any Subcontractor, any of their representatives or employees or any other person performing any portion of the Works.

2.8 Replacement of the Engineer

"If the Employer intends to replace the Engineer, the Employer shall, not less than 14 days before the intended date of replacement, give notice to the Contractor, of the name, address and relevant experience of the intended replacement Engineer. The Employer shall not replace the Engineer with a person against whom the Contractor raises reasonable objection by notice to the Employer, with supporting particulars."

The following Sub-Clauses 4.3 and 4.4 are added:

4.1 Subcontracting

Delete the Sub-Clause 4.1 (c).

5.1 Language(s) and Law

- (a) The Contract Documents shall be drawn up in the English language.
- (b) The Contract shall be subject to the Laws of Islamic Republic of Pakistan.

5.2 Priority of Contract Documents

The documents listed at (1) to (6) of the Sub-Clause are deleted and substituted with the following:

- (1) The Contract Agreement (if completed);
- (2) The Letter of Acceptance;
- (3) The completed Forms of Bid;
- (4) The Addenda/Addendum (if any)
- (4) Special Stipulations (Appendix-A to Bid);
- (5) The Particular Conditions of Contract – Part II;
- (6) The General Conditions – Part I;
- (7) The completed Appendices to Bid (B, C, E to L);
- (8) The Drawings;
- (9) Special Provisions and Technical Specifications;
- (10) The Priced Bill of Quantities (Appendix D to Bid); and
- (11) Any other document forming part of the Contract.

In case of discrepancies between drawings, those of larger scale shall govern unless they are superseded by a drawing of later date regardless of scale. All Drawings and Specifications shall be interpreted in conformity with the Contract and these Conditions. Addendum, if any, shall be deemed to have been incorporated at the appropriate places in the documents forming the Contract.



6.6 Details to be Confidential

The Contractor shall treat the details of the Contract as private and confidential, save insofar as may be necessary for the purposes thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the prior consent in writing of the Employer. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract the same shall be referred to the Employer whose determination shall be final

8.3 Temporary Works

Sufficient details, drawing and calculations pertaining to Temporary Works (including formwork design, scaffolding design etc) to demonstrate the adequacy of the Temporary Works shall be submitted by the Contractor not less than 14 days before the work or the erection of any such Temporary Works commences on the Site.

8.4 Specialists Suppliers and Sub-Contractors

Where the Works required the incorporation of proprietary articles manufactured by specialist suppliers, or portions of the work involving design or specification matters to be carried out by specialist sub-Contractors, the Contractor shall be fully responsible for the outcome in the use of such proprietary articles and for such design and specification executed by specialist sub-Contractors.

9.1 Contract Agreement

Substitute the word 'Employer' in the second line of this Para with 'Contractor'.

And add the following at the end of Clause 9.1:

The Contractor shall provide three copies of signed Contract Agreement to the Employer in proper book form for record. The cost will be borne by the Contractor.

10.1 Performance Security

The text is deleted and substituted with the following:

The Contractor shall provide Performance Security to the Employer in the prescribed form. The said Security shall be furnished or caused to be furnished by the Contractor within 28 days after the receipt of the Letter of Acceptance. The performance security shall be in the form of a "unconditional, irrevocable and acceptable bank guarantee from any Scheduled Bank in Pakistan or bank guarantee from a bank located outside Pakistan duly counter-guaranteed by a Scheduled Bank in Pakistan" in the amount of 10% (Ten percent) of the Contract Price stated in the Letter of Acceptance.

The cost of complying with requirements of this Sub-Clause shall be borne by the Contractor.

10.2 Period of Validity of Performance Security

In the fifth line of this Sub-Clause, replace "14" with "28".

Add the following at the end of sub-clause:



The performance security shall be valid until a date 28 days from the date of issue of the Defects Liability Certificate.

10.3 Claims under Performance Security

Delete sub-clause 10.3 in its entirety.

The following Sub-Clause 10.4 is added:

10.4 Performance Security Binding on Variations and Changes

The Performance Security shall be binding irrespective of changes in the quantities or variations in the Works or extensions in Time for Completion of the Works which are granted or agreed upon under the provisions of the Contract.

11.1 Inspection of Site

If any data is provided by the Employer, the Contractor is solely responsible for ascertaining the correctness of such data and the Employer shall not be liable in this behalf and no claim whatsoever in nature shall be entertained by the Engineer.

14.1 Programme to be Submitted

The programme shall be submitted within 14 days from the date of receipt of Letter of Acceptance. The Contractor shall incorporate and mention activities with allotted time and resources for activities. Also, the Programme of work should also clearly identify the activities with time and resources for parts of work as stated in Appendix A (Sub-Clause 43.1).

The Contractor shall pay a penalty of Rs. 50,000/- (Rupees Fifty Thousand only) for each day of delay in the submission of said Programme of works. The Employer shall recover such amount from any payment due to the Contractor under the Contract, on the Engineer's recommendations.

Add the following:

- (a) The Contractor shall submit the Programme of Works on Primavera for the agreement of the Engineer and approval of the Employer. All items of works and activities including mobilization should be included in the Programme of Works. The programme shall identify and highlight those activities, which are on the Critical Path. This programme of works as scheduled shall form basis of Liquidated Damages pursuant to clauses 47.1 and 47.3 of Conditions of Contract. In addition, cash flow estimates shall be supported with inputs of over drafts organized with financial institutions at various stages of the projects to meet the funding requirements of the project. The Contractor shall supply and maintain at his site office for his and Engineer's use a licensed copy of the project management computer software package namely Prima Vera or equivalent as used by the Contractor for programming, to monitor the progress. It shall be supplied complete with manuals and technical training and support for the duration of the Contract as per requirements assessed by the Engineer.



- (b) In order to assist the Engineer, the Contractor shall be required to submit at 2 weeks intervals data to the Engineer on the cost and quantities and other data relevant to the monitoring of progress according to a particular format suitable for computer processing.
- (c) The programme should identify all items of work including temporary work. Progress reporting by the Contractor should be supported on a monthly basis with an up-to-date analysis of the progress including a statement on items, which are or are about to become critical to the progress of the work along with the proposals on how the Contractor intends to alleviate the situation.
- (d) The programme should be resource based and must provide the critical resource. The programme must be drawn up on CPM.

General Requirements:

- a. Programme should be submitted (both hard and soft copy) strictly following the guidelines and format specified in this Clause.
- b. The Engineer at any time during the execution of the Works; direct the Contractor to change/modify the Programme / Schedule based on the Priority of Works.

Construction Schedule: F

- a. Construction Schedule shall be developed on the basis of Work Breakdown Structure provided or approved by the Engineer.
- b. Construction Schedule shall be detailed up to level 4 or as required by the Engineer.
- c. Durations of construction activity should be calculated practically in relation to quantity of work done and allocated resources. Any activity that demands duration greater than seven (07) calendar days should be split into number of activities to monitor the same accordingly.
- d. Construction activities of the schedule should be logically linked with preceding and succeeding activities and showed in submitted construction schedule.
- e. Critical Activities and Critical Path of the project should be highlighted with red colour in bar chart and precedence diagram. Total Float for non-critical activities should also be shown in the schedule.
- f. Appropriate quantity of direct resources (material, labour, equipment and non-consumable material) should be allocated to all activities and showed in submitted construction schedule. Labour resource should be divided according to related trades (e.g. Mason, Operator, helper etc.) Contractor should make sure that no resource is being over allocated. Indirect resources should be allocated to supervision / summary activity.
- g. BOQ amount should be loaded to each construction activity. Accrual basis should be indicated to construction activity.
- h. Construction Schedule should show Activity ID, Activity Description, BOQ Quantity, Duration, Start Date, Finish Date, Total Float,



Predecessors, Resource names with quantity, BOQ Amount and timescale where the bars show start and finish dates.

Progress Curve / Projected Cash Flow:

- a. Progress Curve / Projected Cash Flow should be developed and presented on Project Management Software – Primavera Project Planner as stated above.
- b. S-Curve should be plotted between time (in weeks) and progress of work done (in % of work). The progress should be shown in cumulative percent of work done. Percent of work done should be calculated with the BOQ amount and payment terms.

Critical Resources Usage Chart:

- a. Critical Usage Chart should be developed.
- b. List of Critical Resources included Labourers, equipment, consumable/non-consumable materials and/or identified by the Engineer.
- c. Resource usage chart should show Resource Name and weekly utilization (numbers) of resources on each activity.

Detailed Method Statement:

- a. Detailed method statement should be presented in descriptive format explaining the method of carrying out works, logistics, site layout, flow of work, quality and safety measures for each activity and any other details as required by the Engineer.

Material Procurement Plan:

Material Procurement Plan for major items of purchase should be presented in a Tabular Format to be submitted to the Engineer for pre-approval. The Plan must as a minimum show the list of local & imported materials to be used, their specification reference, and planned dates for submittal to Consultant, approval process, placing of order, vendor contact, required delivery on site, status of Line of Credit (LOC) if applicable, and usage of material.

(b) Cash Flow Estimates:

The Contractor shall, within 28 days from the receipt of the Letter of Acceptance, provide to the Engineer for his information a detailed cash flow estimates in quarterly periods, of all payments to which the Contractor will be entitled under the Contract and the Contractor shall subsequently supply revised cash flow estimates at quarterly intervals, if required to do so by the Engineer.

- (c) Add following at end of Sub-clause 14.2:

14.2 Revised Programme

The revised programme shall be submitted within fourteen (14) days of the request received from the Engineer. The Contractor shall pay a penalty of Rs. 50,000/- (Rupees Fifty Thousand only) for each day of delay in the submission of said revised programme. The Employer shall recover such amount from any payment due to the Contractor under the Contract, on the Engineer's recommendations.



14.3 Cash Flow Estimate to be Submitted

The detailed Cash Flow Estimate shall be submitted within **28** days from the date of receipt of Letter of Acceptance.

The following Sub-Clause 14.5 is added:

14.5 Monthly Progress Report

- (a) During the period of the Contract, the Contractor shall submit to the Engineer not later than

the 8th day of the following month, 10 copies each of Monthly Progress Reports covering:

- (i) A Construction Schedule indicating the monthly progress in percentage;
- (ii) Description of all work carried out since the last report;
- (iii) Description of the work planned for the next 56 days sufficiently detailed to enable the Engineer to determine his programme of inspection and testing;
- (iv) Monthly summary of daily job record;
- (v) Photographs to illustrate progress; and
- (vi) Information about problems and difficulties encountered, if any, and proposals to overcome the same.

- (b) 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.

The following Sub-Clauses 15.2, 15.3 and 15.4 are added:

15.2 Language Ability of Contractor's Representative

The Contractor's authorised representative shall be fluent in the English language. Alternately an interpreter with ability of English language shall be provided by the Contractor on full time basis.

15.3 Contractor's Representative

The Contractor's authorised representative and his other professional engineers working at Site shall register themselves with the Pakistan Engineering Council.

The Contractor's authorised representative at Site shall be authorised to exercise adequate administrative and financial powers on behalf of the Contractor so as to achieve completion of the Works as per the Contract.

15.4 Provision of In-House Design Review / Check Capabilities of the Contractor



The Contractor is required to associate qualified and experienced technical experts to ensure in-house design review capability to deal with technical problems during construction and shall give prompt notice to the Engineer of any error, omission, fault or other defects in design or specifications of the work. The final responsibility of practicality and technical adequacy of construction rests with the Contractor.

The following Sub-Clauses 16.3 and 16.4 are added:

16.3 Language Ability of Superintending Staff of Contractor

A reasonable proportion of the Contractor's superintending staff shall have a working knowledge of the English language. If the Contractor's superintending staff are not fluent in English language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.

16.4 Employment of Local Personnel

The Contractor is encouraged, to the extent practicable and reasonable, to employ local staff and labour and associated sub-Contractors with appropriate qualifications and experience from Pakistan

Add following sub-clauses (d), (e), (f) and (g)

19.1 Safety, Security and Protection of Environment

(d) The contractor, to ensure protections of the environment, shall take all necessary measures and precautions in conformity with statutory and regulatory environmental requirements enforced and amended from time to time.

(e) The Contractor shall exercise due 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 the Works, except where clearing is required for Permanent Works, Approved Temporary Works and for excavation operations. All watercourses, ponds wells 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 conform the natural appearance of the landscape. Where necessary, destruction, scarring, damage or defacing may occur as a result of the Contractor's operations, it shall be repaired, replaced, replanted or otherwise corrected at Contractor's expenses to the satisfaction of the Engineer and national and/or provincial Environment Protection Agency.

(f) Borrow areas shall be located and operated so as not to detract from the future usefulness or value of the sites. Upon completion of operations, borrow areas shall be left in a safe and rightly conditions. No borrow area shall be located within 500m from the right of way, except where approved by the Engineer.

(g) During performance of the work, the Contractor shall carryout proper and efficient measures as often as necessary to reduce the dust pollution.



The following Sub-Clauses 19.3 and 19.4 are added:

19.3 Safety Precautions

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 authorise 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 make, maintain and submit reports to the Engineer concerning safety, health and welfare of persons and damage to property, as the Engineer may from time to time prescribe.

19.4 Lighting Work at Night

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's Representative.

Delete the text and substitute with the following:

20.4 Employer's Risks

The Employer's risks are:

- (a) insofar as they directly affect the execution of the Works in Pakistan:
 - (i) war and hostilities (whether war be declared or not), invasion, act of foreign enemies,
 - (ii) rebellion, revolution, insurrection, or military or usurped power, or civil war,
 - (iii) ionizing radiations, or contamination by radioactivity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof,
 - (iv) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds,
 - (v) riot, commotion or disorder, unless solely restricted to the employees of the Contractor or of his Subcontractors and arising from the conduct of the Works;
- (b) loss or damage due to the use or occupation by the Employer of any Section or part of the Permanent Works, except as may be provided for in the Contract;



- (c) loss or damage to the extent that it is due to the design of the Works, other than any part of the design provided by the Contractor or for which the Contractor is responsible; and
- (d) any operation of the forces of nature (insofar as it occurs on the Site) which an experienced contractor:
 - (i) could not have reasonably foreseen, or
 - (ii) could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures:
 - (iii) prevent loss or damage to physical property from occurring by taking appropriate measures, or
 - (iv) insure against.

21.1 Insurance of Work and Contractor's Equipment

In para (a) of this clause, in the first line, after the word "plant", Add the following words: "whether provided by the Contractor or the Employer".

Add the following words at the end of Sub-para (a) and immediately before the last word of sub-para (b) of sub-clause 21.1

"it being understood that such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred."

The insurance for works and contractor's equipment shall be denominated in the currency or currencies and in the proportions in which the contract is administered.

21.2 Scope of Cover

Amend sub-para. (a) of Sub-Clause 21.2 by deleting the words "from the start of work at the Site" and by substituting therefore the words "from the first working day after the Commencement Date."

Add following sub-clause (c)

It shall be the responsibility of the Contractor to notify the insurance company of any change in the nature and extent of the Works and to ensure the adequacy of the insurance coverage at all times during the period of the Contract

Amend sub-clause 21.4:

21.4 Exclusions

The text is deleted and substituted with the following:

There shall be no obligation for the insurances in Sub-Clause 21.1 to include loss or damage caused by the risks listed under Sub-Clause 20.4 paras (a) (i) to (iv).

25.1 Evidence and Terms of Insurances



Amend Sub-Clause 25.1 by inserting the words "as soon as practicable after the respective insurances have been taken out but, in any case," before the words "prior to the start of work at the Site."

The following Sub-Clause 25.5 is added:

25.5 Insurance Company

The Contractor shall be obliged to place all insurances relating to the Contract (including but not limited to the insurances referred to in clauses 21, 23 and 24) with Insurance Company having at least AA rating from PACRA/JCR in favour of the Employer valid for a period 28 days after the expiry of Defects Liability Period.

Costs of such insurances shall be borne by the Contractor.

27.1 Fossils

Add "/or" in the end of the text appearing under (a) after the word "and"

Add "determined under sub clause 53.5" after the word "Contract Price" appearing in the end of first line of text under (b)

Delete the whole text of this sub-clause and substitute as follows:

30.3 Transport of Material or Plant

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.

Add following sub clause 30.5



30.5 Extraordinary Traffic

Nothing contained above shall excuse the Contractor or any of his sub-contractor(s) from complying with state laws regulating traffic on highway and bridges.

The following Sub-Clause 31.3 is added:

31.3 Co-operation with other Contractors

During the execution of the Works, the Contractor shall co-operate fully with other contractors working for the Employer at and in the vicinity of the Site and also shall provide adequate precautionary facilities not to make himself a nuisance to local residents and other contractors.

The following Sub-Clauses 34.2 to 34.19 are added:

34.2 Rates of Wages and Conditions of Labour

The Contractor shall pay rates of wages and observe conditions of labour not less favourable than those established for the trade or industry where the work is carried out. In the absence of any rates of wages or conditions of labour so established, the Contractor shall pay rates of wages and observe conditions of labour which are not less favourable than the general level of wages and conditions observed by other employers whose general circumstances in the trade or in industry in which the Contractor is engaged are similar.

34.3 Employment of Persons in the Service of Others

The Contractor shall not recruit his staff and labour from amongst the persons in the services of the Employer or the Engineer, except with the prior written consent of the Employer or the Engineer, as the case may be.

34.4 Housing for Labour

Save insofar as the Contract otherwise provides, the Contractor shall provide and maintain such housing accommodation and amenities as he may consider necessary for all his supervisory staff and labour, 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.

34.5 Health and Safety

Due precautions shall be taken by the Contractor, and at his own cost, to ensure the safety of his staff and labour 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.

34.6 Epidemics

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

34.7 Supply of Water

The Contractor shall, so far as is reasonably practicable, having regard to local conditions, provide on the Site, to the satisfaction of the Engineer or his representative, adequate supply of drinking and other water for the use of his staff and labour.

34.8 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Statutes, Ordinances and Government Regulations or Orders for the time being in force, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or suffer any such importation, sale, gift, barter or disposal by his Subcontractors, agents, staff or labour.

34.9 Arms and Ammunition

The Contractor shall not give, barter, or otherwise dispose of, to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid except to those who are employed or hired for security of the work, Plant & Equipment, Material, Camp Sites, Offices, Housing including Employer's/Engineer's facilities, etc.

34.10 Festivals and Religious Customs

The Contractor shall in all dealings with his staff and labour have due regard to all recognised festivals, days of rest and religious and other customs.

34.11 Disorderly Conduct

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

34.12 Repatriation of Labour

The Contractor shall be responsible for the return to the place of recruitment or domicile of all persons recruited and employed for the purpose of or in connection with the Contract and shall maintain suitable accommodation and amenities for such persons until they have left the site.

34.13 Measures against Insect and Pest Nuisance

The Contractor shall at all times take the necessary precautions to protect all staff and labour employed on the Site from insect nuisance, rats, and other pests and reduce the danger to health and the general nuisance caused by the same. The Contractor shall



provide his staff and labour with suitable prophylactics for the prevention of malaria and shall take steps to prevent the formation of stagnant pools of water. He shall comply with all the regulations of the local health authorities in these respects and shall in particular arrange to spray thoroughly with approved insecticide all buildings erected on the Site. Such treatment shall be carried out at least once a year or as instructed by the Engineer. The Contractor shall warn his staff and labour of the dangers of bilharzias and wild animals

34.14 Burial of the Dead

The Contractor shall make any necessary arrangements for the transport, to any place as required for burial, of any of his expatriate employees or members of their families who may die in Pakistan. The Contractor shall also be responsible, to the extent required by the local regulations, for making any arrangements with regard to burial of any of his local employees who may die while engaged upon the Works.

34.15 Supply of Foodstuffs

The Contractor shall arrange for the provision of a sufficient supply of suitable food at reasonable prices for all his staff and labour for the purposes of or in connection with the Contract

34.16 Accident Prevention Officer

The Contractor shall have on his staff at the site an officer dealing only with questions regarding the safety and protection against accidents of all staff and labour. This officer shall be qualified for this work and shall have the authority to issue instructions and shall take protective measures to prevent accidents. Adequate number of Site Safety Inspectors shall be deployed by Contractor to assist Accident Prevention Officer and ensure safety of workers in the hazardous work areas.

34.17 First Aid Facilities

The Contractor shall provide and maintain adequate First Aid Facilities convenient to the site to the approval of the Engineer.

34.18 Dangerous Materials

The Contractor and his subcontractors shall convey, store and make use of all explosives, dangerous petroleum, acetylene, carbide of calcium and other similar material provided by them for use in or on the Works in strict accordance with the provision of all laws, orders and regulations that are in force at the site or may be issued from time to time by the Government.

34.19 Compliance by Subcontractors

The Contractor shall be responsible for compliance by his Subcontractors of the provisions of this Clause.

The following Sub-Clauses 35.2 and 35.3 are added:

35.2 Records of Safety and Health



The Contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Engineer may from time to time prescribe.

35.3 Reporting of Accidents

The Contractor shall report to the Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer immediately by the quickest available means.

Add the following at the end of sub clause:

36.1 Quality of Materials, Plant, Supplies and Workmanship

The place of such tests shall be situated in Pakistan and notified to the contractor whenever the need arises

36.2 Cost of Samples

Correct the clause No. from 36.1 to 36.2 Cost of Samples

36.5 Engineer's Determination where Test not provided for

Add "/or" in the end of the text appearing under (a) after the word "and"

Add "determined under sub clause 53.5" after the word "Contract Price" appearing in the end of first line of text under (b)

The following Sub-Clause 36.6 is added:

36.6 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.

40.2 Engineer's Determination following Suspension

Add "/or" in the end of the text appearing under (a) after the word "and"

Add "determined under sub clause 53.5" after the word "Contract Price" appearing in the end of first line of text under (b)

The text is deleted and substituted with the following:

41.1 Commencement of Works

The Contractor shall commence the Works on Site within the period named in Appendix-A to Bid from the date of receipt by him from the Engineer of a written Notice to Commence. Thereafter, the Contractor shall proceed with the Works with due expedition and without delay.



42.2 Failure to Give Possession

Possession of site within the period named in Appendix-A

Add "/or" in the end of the text appearing under (a) after the word "and"

Add "determined under sub clause 53.5" after the word "Contract Price" appearing in the end of first line of text under (b)

Add the following paragraph at the end of Sub-Clause 45.1:

45.1 Restriction on Working Hours

The Contractor shall pay overtime payment to the Engineer's Support Staff/Personnel who were required by the Contractor to perform their respective work assignment beyond the normal working hours stated in Part A – Particular Conditions (Appendix A). The payment to the Engineer's Staff shall be made in the presence of the Employer's Representative.

47.1 Liquidated Damages

The rate of liquidated damages shall be 0.1% per day of the contract price stated in Letter of Acceptance for every day of delay in which whole or part of the work(s) remained unfurnished subject to a maximum of 10% of the contract price stated in Letter of Acceptance.

Add the following at the end of the sub-clause:

"In addition to the Liquidated Damages, the Contractor shall bear all the cost/expenses related to the supervision of the works by the Project Consultants covering salaries of the Engineer and all of his Site Supervision staff including all the benefits, providing, running and maintenance of all the Engineer's Facilities up to the issuance of the Taking Over Certificate by the Employer. All the above cost/expenses will not be reimbursed/paid to the Contractor beyond the approved completion period of the works"

The following Sub-Clause 47.3 is added:

47.3 Interim Liquidated Damages

Contractor's works programme submitted under clause 14.1 of General Conditions of Contract and Conditions of Particular Applications shall be considered part of the contract agreement. If the contractor's progress is not as per approved programme of works, the contractor shall be liable for interim liquidated damages at the rate of 0.05% of the contract price stated in Letter of acceptance for each day of delay, which shall be refunded if the progress again matches the approved programme of works during the currency of works.

The amount of interim liquidated damages deducted by the Employer from the payment of the contractor and refunded shall be taken into consideration while determining the liquidated damages for the whole of the Works under clauses 47.1 and 47.2.

If the progress of works is observed to be behind approved programme of works against three consecutive months, then the Employer may invoke clause 63.1 (Default of Contractor).

Delete Clauses 48.1 and replace with following:

48.1 Taking over Certificate

When the whole of the Works has been substantially completed and have satisfactorily passed any Tests on Completion prescribed by the Contract, the Contractor shall give a notice to that effect to the Engineer, with a copy to the Employer, accompanied by a written undertaking to finish with due expedition any outstanding work during the Defects Liability Period. Such notice and undertaking shall be deemed to be a request by the Contractor for the Engineer to issue a Taking-Over Certificate in respect of the Works.

Within 14 days of the date of receipt of contractor's notice for issuance of Taking Over Certificate the Employer shall on the written request by the Engineer constitute a committee comprising of Engineer/Engineer's Representative, Employer's and Contractor's Representatives. The Committee shall conduct a detailed inspection of the works completed by the contractor to ascertain the completion or the extent of completion to decide about the issuance of Taking Over Certificate.

The Engineer in pursuance to the recommendations of the committee shall within 28 days of the date of receipt of the report from the committee, either issue to the Contractor, with a copy to the Employer, a Taking-Over Certificate, stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract, or give instructions in writing to the Contractor specifying all the work which, in the Engineer's opinion, is required to be done by the Contractor before the issue of such Certificate.

The Engineer shall also notify the Contractor of any defects in the Works affecting substantial completion that may appear after such instructions and before completion of the Works specified therein.

Add following paragraph before the first para:

49.2 Completion of Outstanding Works and Remedying Defects

At the completion of the Defects Liability Period the Employer shall constitute a committee comprising of Engineer/Engineer's Representative, Employer's and Contractor's Representatives. The Committee shall conduct a detailed inspection of the works to ascertain the issuance of Defects Liability Certificate or otherwise

Add following sub clause 49.5:

49.5 Extension of Defects Liability Period

The defects liability period for the works shall be extended by a period equal to the period during which the Works cannot be used by reason of defect or damage. If only part of the works is affected, the Defect Liability Period shall be extended only for that part. In neither case shall the Defects Liability Period extend beyond 2 years.

Add the following para at the end of this sub-clause in part I:

51.1 Variations

The approval/finalization of rates of all variations shall not relieve the Contractor of his obligations under the Contract. The Contractor shall neither stop the work nor slow down progress of the works in awaiting the approval of rates of all variations.

51.2 Instructions for Variations

At the end of the first sentence, after the word "Engineer", the words "in writing" are added.

52.1 Valuation of Variations

In the tenth line, after the words "Engineer shall" the following is added:

"Within a period not exceeding one-eighth of the completion time subject to a minimum of 56 days from the date of disagreement whichever is later."

53.3 Substantiation of Claims

Add "and approved by the Employer" in the first line after the word "Engineer"

Add "but not more than 28 days" in the end of sixth line after the word "require"

Delete the text "if required by the Engineer so to do" appearing in the second and third last lines.

Delete Clauses 53.4 and replace with following:

53.4 Failure to Comply

Notwithstanding anything contained in the document, the Contractor shall not be entitled for any extension of Time for Completion and/or additional payment in respect of any claim(s) if the Contractor fails to comply with the requirements or any of the requirement of Sub-Clauses 53.1, 53.2 and 53.3 within the time period stipulated there in the clauses above mentioned and or fails in keeping and producing necessary records whenever demanded by the Engineer.

Add following paragraph at the end of sub clause:

54.1 Contractor's Equipment, Temporary Works, and materials; Exclusive use for the Works

The Contractor shall forward to the Engineer at the end of each month returns showing the Construction Plant, Material, etc., on site in a form prescribed by the Engineer. In addition,

the Contractor should submit details of resources (labour, plant & equipment) at the end of each day to the Engineer.

54.5 Conditions of Hire of Contractor's Equipment

The following paragraph is added:

The Contractor shall, upon request by the Engineer at any time in relation to any item of hired Contractor's Equipment, forthwith notify the Engineer in writing the name and address of the Owner of the equipment and shall certify that the agreement for the hire thereof contains a provision in accordance with the requirements set forth above.

Add following sub clause:

55.2 Omission of Quantities

Items of works described in the Bill of quantities for which no rate or price has been entered in the Contract shall be considered as included in other rates and prices in the Contract and will not be paid for separately by the Employer.

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 Work.

Delete sub clause 57.1 and replace with following:

57.1 Method of Measurement

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 FPS system for all items, unless otherwise provided herein or in the Special Provisions. 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 Works shall be measured net notwithstanding any general or local custom except where otherwise specifically described or prescribed in the Contract.

Add following sub clause 57.3:

57.3 Copies of Payment Certificate

The Contractor will supply to the Engineer's Representative six (6) copies of the abstract of Contractor's certificate of payment every month along with two copies of detailed measurements, quality control tests and cross sections with calculations, and any other document or information which form the basis of payment

60 Certificates and Payment

Delete sub clause 60.1 and replace with following:

60.1 Monthly Statements

The Contractor shall submit three copies of the statement to the Engineer at the end of each month, in a tabulated form approved by the Engineer, showing the amounts to which, the Contractor considers himself to be entitled. The statement shall include

the following items, as applicable, which shall be taken into account in the sequence listed:

- (a) the estimated Contract value of the Permanent Works executed up to the end of the month in question, determined in accordance with Sub-Clause 56.1, at the unit rates and prices included in the Contract;
- (b) the actual value certified for payment for the Permanent Works executed up to the end of the previous month, at the unit rates and prices included in the Contract;
- (c) the estimated Contract value at the unit rates and prices included in the Contract of the Permanent Works for the month in question, obtained by deducting (b) from (a);
- (d) the equivalent of the amount set forth in (c), expressed in the various currencies (if applicable) in which the Contract Price is payable, and calculated by applying the proportions and the exchange rates set forth in the Appendix to Bid to the amount set forth in (c);
- (e) the value of any variations executed up to the end of the month in question, less the amount certified in the previous Interim Payment Certificate, expressed in the relevant amounts of foreign (if applicable) and local currencies, pursuant to Clause 52;
- (f) amounts approved in respect of Daywork executed up to the end of the month in question, less the amount for Daywork certified in the previous Interim Payment Certificate, as determined from the Daywork Schedule of the Bill of Quantities;
- (g) amounts in local currency reflecting changes in cost and legislation, pursuant to Clause 70;
- (h) any amount to be withheld under the retention provisions of Sub-Clause 60.3, determined by applying the percentage set forth in Sub-Clause 60.3;
- (i) any amount to be added or deducted as Secured Advance against material at site under the provisions of Sub-Clause 60.11 (if applicable);
- (j) any amounts to be deducted as recovery of the Advance under the provisions of Sub-Clause 60.13;
- (j) adjustment of any other sum, expressed in the applicable currency or currencies, to which the Contractor may be entitled under the Contract or to be recovered from the Contractor; and
- (k) any amounts to be deducted as Withholding Tax under the provisions of Income Tax Laws and Central Board of Revenue regulations.

Delete sub-clause 60.2 and replace with following:

60.2 Monthly Payments

The said statement shall be approved or amended by the Engineer in such a way that, in his opinion, it reflects the amount in various currencies due to the Contractor in accordance with the Contract, after deduction, other than pursuant to Clauses 14.1, 14.2 and 47, of any sums which may have become due and payable by the Contractor to the Employer. In cases where there is a difference of opinion as to the value of any item, the Engineer's view shall prevail. Within 14 days of receipt of the monthly statement referred to in Sub-clause 60.1, the Engineer shall determine the amounts due to the Contractor and shall issue to the Employer and the Contractor a certificate herein called "Interim Payment Certificate", certifying the amounts due to the Contractor.

The Engineer shall not be bound to certify any payment under this Sub-clause if the net amount thereof, after all retention and deductions, would be less than the Minimum Amount of Interim Payment Certificates stated in the Appendix A to Tender. However, in such case, the unpaid certified amount will be added to the next interim payment, and the cumulative unpaid certified amount will be compared to the minimum amount of interim payment.

Notwithstanding the terms of this Clause or any other Clause of the Contract, no amount will be certified by the Engineer for payment until the Performance Security has been provided by the Contractor and approved by the Employer".

Add following paragraph at the start:

60.3 Retention Money

10% Retention Money shall be retained from each interim certificate of the Contractor except interim certificate of Mobilization Advance up to maximum 5%.

The Retention Money shall be binding irrespective of changes in the quantities or variations in the Works or extensions in Time for Completion of the Works which are granted or agreed upon under the provisions of the Contract.

Add following paragraph at the end:

60.6 Final Statement

If, following discussions between the Engineer and the Contractor and any changes to the draft final statement which may be agreed between them, it becomes evident that a dispute exists, the Engineer shall issue to the Employer an Interim Payment Certificate for those parts of the draft final statement which are not in dispute. The dispute shall then be settled in accordance with Clause 67. The Final Statement shall be agreed upon settlement of the dispute.

60.8 Final Payment Certificate

Replace word "Clause 47" with Clauses 14.1, 14.2 and 47 in para (b), line 3

Add the following para at the end of this sub-clause

The Contractor shall also submit following documents with his final statement to the Engineer:

- (a) An affidavit by the Contractor that the Works have been executed according to approved specifications, drawings, designs and standard and have not concealed defects known to him.

Delete the text and substitute:

60.10 Time for Payment

The amount due to the Contractor under any interim certificate issued by the Engineer pursuant to this Clause, or to any other terms of the Contract, shall, subject to Clause 47, be paid by the Employer to the Contractor within 28 days after such interim certificate has been delivered to the Employer, or, in the case of the Final Certificate referred to in Sub Clause 60.8, within 56 days, after such Final Payment Certificate has been delivered to the Employer.

Add following sub clauses:

60.11 Place of Payment

Payments to the Contractor by the Employer shall be made in the currencies in which the Contract Price is payable into a bank account or accounts nominated by the Contractor

- a) The Employer may withhold the whole or a part of any payment certificate issued by the Engineer if it is necessary in the opinion of the Engineer / Employer to protect himself against losses on account of the following reasons.
 - i. Defective work not rectified.
 - ii. Non-fulfilment of any demand regarding guaranties.
 - iii. Claims of third parties raised against the Employer caused through fault of the contractor in connection with the works.
 - iv. Damages caused by the contractor or his personnel or any sub-contractor, to the Employer, or to a third party on the site.
 - v. Non-fulfilment of the contract by the contractor.
- b) After the reasons for withholding of payments have been eliminated, to the satisfaction of the Employer and the Engineer, payments to the contractor will be undertaken by the Employer without delay.

60.12 Financial Assistance to Contractor

This clause is deleted.

Add following as paragraph (b) (iii);

63.1 Default of Contractor



- (b)(iii) If the progress of works with respect to the Programme of Works is observed to be behind the approved program of works against three consecutive months.

Delete the last paragraph of this sub-clause and substitute with:

"then the Employer may, after giving 14 days' notice to the Contractor, enter upon the Site and expel the Contractor therefrom without thereby voiding the Contract, or releasing the Contractor from any of his obligations or liabilities under the Contract, or affecting the rights and powers conferred on the Employer or the Engineer by the Contract, and may himself complete the Works or may employ any other contractor to complete the Works. The Employer or such other contractor may use for such completion so much of the Contractor's Equipment, Plant, Temporary Works, and materials, which have been deemed to be reserved exclusively for the execution of the Works, under the provisions of the Contract, as he or they may think proper, and the Employer may, at any time, sell any of the said Contractor's Equipment, Temporary Works, and unused Plant and materials, and apply the proceeds of sale in or toward the satisfaction of any sums due or that may become due to him from the Contractor under the Contract."

Provided further that in addition to the action taken by the Employer against the Contractor under this Clause, the Employer may also refer the case of default of the Contractor to Pakistan Engineering Council for punitive action under the Construction and Operation of Engineering Works Bye-Laws 1987, as amended from time to time.

63.2 Valuation at Date of Termination

Modify the heading of Sub-Clause 63.2 by substituting "Valuation at Date of Expulsion" for "Valuation at Date of Termination." In Sub-Clause 63.2, delete the word "termination" on the second and fifth lines and substitute "expulsion".

63.3 Payment after Termination

Modify the heading of Sub-Clause 63.3 by substituting "Payment after Expulsion" for "Payment after Termination." In Sub-Clause 63.3, delete the words "terminates the Contractor's employment" on the first line, and substitute "shall enter and expel the Contractor."

63.4 Assignment of Benefit of Agreement

In Sub-Clause 63.4, delete the word "termination" on the second line, and replace with "expulsion".

Add following sub clause:

63.5 Corrupt and fraudulent Practices

If in the judgment of the Employer the Contractor has engaged in corrupt or fraudulent practices, in competing for or in executing the contract, then the Employer may, after having given 14 days notice to the contractor, terminate the contractor's employment under the contract and expel him from the site, and the provision of clause 63 shall apply as if such expulsion had been made under sub-clause 63.1.



For the purpose of this sub-clause:

"Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.

"Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition

65.2 Special Risks

The text is deleted and substituted with the following:

The Special Risks are the risks defined under Sub-Clause 20.4 sub paragraphs (a) (i) to (a) (v).

67.3 Arbitration

In the sixth to eight lines, delete the words "shall be finally settled"to..... "appointed under such Rules" and substitute the following:
shall be finally settled under the Rules and provisions of Arbitration Act 1940 of Islamic Republic of Pakistan enforced for the time being and as amended from time to time by one or more Arbitrators appointed in accordance with said Rules. The place of Arbitration shall be Quetta, Pakistan.

68.1 Notice to Contractor

The following paragraph is added:

For the purposes of this Sub-Clause, the Contractor shall, immediately after receipt of Letter of Acceptance, intimate in writing to the Employer and the Engineer by registered post, the address of his principal place of business or any change in such address during the period of the Contract.

68.2 Notice to Employer and Engineer

For the purposes of this Sub-Clause, the respective addresses are:

1. The Employer
Director General, FGEHA,
10-Mauve Area, G-10/4, Islamabad.
- (a) The Engineer
Project Director, FGEHA, Karachi.
2nd Floor, Working Women Hostel, Opposite Garden Police Headquarters, Agha Khan-III Road, Karachi.

69.1 Refer Clause 60.10 above

A handwritten signature in blue ink is written over a circular official stamp. The signature appears to be 'AB' followed by a flourish. The stamp is mostly illegible but seems to contain some text around the perimeter.

69.3 Payment on Termination

Delete sentence from "but in addition to the payments..... of such termination"

69.4 Contractor's Entitlement to Suspend Work

Add "/or" in the end of the text appearing under (a) after the word "and"

Add "determined under sub clause 53.5" after the word "Contract Price" appearing in the first line of text under (b) Add the following sub-clause.

70.1 Increase or Decrease of Cost

Sub-Clause 70.1 is deleted in its entirety.

70.2 Subsequent Legislation

If, after the date 28 days prior to the latest date for submission of bids for the Contract, there occur in Pakistan changes to any National or State Statute, Ordinance, Decree, or other Law or any regulation or by-law of any local or other duly constituted authority, or the introduction of any such State Statute, Ordinance, Decree, Law, regulation, or by-law that causes additional or reduced cost to the Contractor, other than under sub-clause 70.1 of this clause, in the execution of the Contract, such additional or reduced cost shall, after due consultation with the Employer and the Contractor, be certified by the Engineer and be paid by or credited to the Employer and the Contract Price adjusted accordingly.

Addition/reduction in the cost of Works due to change in the cost of the specified construction inputs in Appendix-C mentioned in paragraphs (i), (ii), (iii) and (iv) of sub clause 70.1 on account of the legislative action described hereinabove, shall not be adjusted under this sub clause as adjusted due to increase or decrease in the price of these inputs is covered by sub clause 70.1 (i), (ii), (iii) and (iv).

Any increase or decrease in the cost of the Works due to increase or decrease in the haulage, cartage of any goods/materials on account of any changes in legislation shall also not be adjusted.

Notwithstanding anything contained herein above, any increase in the rate of Income Tax or Withholding Tax levied upon the Contractor on the incomes or profits arising out of this Contract under the Income Tax Laws of Pakistan applicable in the years of currency shall not be adjusted under this or any other provision of Contract and shall be the sole responsibility of the Contractor

Currency and Rates of Exchange

The Sub-clauses 71.1, 72.1, 72.2 and 72.3 are deleted being not applicable for this Contract as the Currency of the Contract is Pak. Rs.

The following Sub-Clauses 73.1, 73.2, 73.3, 74.1, 75.1, 76.1, 77.1, 78.1, 79.1, 80.1, 81.1, 82.1, 83.1, 84.1, 85.1, 86.1, 87.1, 88.1, 89.1 and 90.1 are added:

73.1 Payment of Income Tax

The Contractor, Subcontractors and their employees shall be responsible for payment of all their income tax, super tax and other taxes on income arising out of the Contract and the rates and prices stated in the Contract shall be deemed to cover all such taxes.

73.2 Cost Inclusive of Duties and Taxes

Local Taxation

The prices bid by the Contractor shall include all customs duties, import duties, business taxes, and income and other taxes that may be levied in accordance with the laws and regulations in being on the date 28 days prior to the latest date for submission of bids in the Employer's country on the Contractor's Equipment, Plant, materials, and supplies (permanent, temporary, and consumable) acquired for the purpose of the Contract and on the services performed under the Contract. Nothing in the Contract shall relieve the Contractor from his responsibility to pay any tax that may be levied in the Employer's country on profits made by him in respect of the Contract.

Foreign Taxation

The prices bid by the Contractor shall include all taxes, duties, and other charges imposed outside the Employer's country on the production, manufacture, sale, and transport of the Contractor's Equipment, Plant, materials, and supplies to be used on or furnished under the Contract, and on the services performed under the Contract.

73.3 Income Tax Provision in Sub-Contracts

Provisions to the like effect as those contained in this clause shall be incorporated by the Contractor in all sub-contracts agreement(s).

74.1 Integrity Pact

If the Contractor or any of his Subcontractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed by the Contractor as Appendix-L to his Bid, 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, agents 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, agents or servants.

The termination under Sub-Para (b) of this Sub-Clause shall proceed in the manner prescribed under Sub-Clauses 63.1 to 63.4 and the payment under Sub-Clause 63.3 shall be made after having deducted the amounts due to the Employer under Sub-Para (a) and (c) of this Sub-Clause.

75.1 Termination of Contract for Employer's Convenience



The Employer shall be entitled to terminate the Contract at any time for the Employer's convenience after giving 56 days prior notice to the Contractor, with a copy to the Engineer. In the event of such termination, the Contractor:

- (a) shall proceed as provided in Sub-Clause 65.7 hereof; and
- (b) shall be paid by the Employer as provided in Sub-Clause 65.8 hereof.

76.1 Liability of Contractor

The Contractor or his Subcontractors or assigns shall follow strictly, all relevant labour laws including the Workmen's Compensation Act and the Employer shall be fully indemnified for all claims, damages etc. arising out of any dispute between the Contractor, his Subcontractors or assigns and the labour employed by them.

77.1 Joint and Several Liability

If the Contractor is a joint venture of two or more persons, all such persons shall be jointly and severally bound to the Employer for the fulfilment of the terms of the Contract and shall designate one of such persons to act as leader with authority to bind the joint venture. The composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer.

78.1 Details to be Confidential

The Contractor shall treat the details of the Contract as private and confidential, save in so far as may be necessary for the purposes thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the prior consent in writing of the Employer or the Engineer. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract, the same shall be referred to the decision of the Engineer whose award shall be final.

80.1 Coordination of Work at Site:

The Contractor shall take cognizance that during the execution of the project, other Contractors will be working concurrently on this site or adjacent to the site.

All works of his responsibility shall be coordinated by the Contractor so as to give the necessary facilities to other Contractors or their workmen or any other employees, who execute or supervise any work on the Site.

The Contractor shall ensure that the necessary safety precautions will be observed and interferences shall be avoided especially for the works executed side-by-side by different Contractors.

Due consideration must be given to permit access to sections of the work as required by other Contractors for the execution of their works. With a view to coordinate the works, the Engineer's Representative may from time to time direct the order of the work to be carried out.



Allowances for coordination of work at site shall be made by the Contractor in his prices & programming.

Add the following sub clause:

81.1 Government and other Regulations in Pakistan

The operation, proceedings and other activities in Pakistan of the Contractor and his sub-Contractors in connection with the works shall be conducted in strict accordance with the requirements and provisions of all laws, decrees, orders, rules and regulations of the Government and other Authorities from time to time in force, which are applicable to the Works.

The Contractor and his Sub-Contractors shall be at all times during the execution and maintenance of the works comply with all municipal and local bye-laws, regulations, rules and orders from time to time in force which are applicable to the works.

Add the following sub clause:

82.1 State of Emergency

In addition to his other responsibilities under the Contract the Contractor shall comply with any police or Military regulations, orders or instructions in force in the area of the Works due to a State of Emergency.

83.1 Contractor to keep Engineer fully informed

The Contractor shall keep the Engineer fully informed, as to all matters connected with the Works and the progress thereof, including any modification in the procedure for carrying out the Works, dispatch and delivery to the Site of materials and plant, moving of items of plant and such like matters.

84.1 Personal Liabilities

Neither any member of the Employer's staff, nor the Engineer nor any member of his staff, nor the Engineer's Representative shall be in any way personally liable for the act or obligations under the Contract, or answerable for any default or omission on the part of the Contractor in the observance of the provisions of the contract or performance of any of the act matters or things which are herein contained.

85.1 Freight Charges, etc.

The Contractor shall pay all freight charges and expenses in connection with the transporting of materials, Plant and other things from the port of importation to the Site and from the Site to the port of exportation.

86.1 Accidents

The Contractor shall within 24 hours of the occurrence of any accident at or about the site or in connection with the execution of the Works report such accident to the Engineer and the Employer.



88.1 Wastage

No payment shall be made under any circumstances for wastage of materials, supplies and/or fixtures supplied by the Contractor. In all cases payment shall be made only on the basis of the net quantities of work done. It is up to the Tenderer/Contractor to calculate and make allowance for any or all such wastage (e.g., cut ends of reinforcement bars, spillage of cement and the like) in establishing the unit rates or prices for the items of works.

89.1 Weather, Flood, Seismic and Traffic Vibrations Conditions

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

90.1 Dealing with 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 those 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 interalia 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 sands shall generally be clear of the Permanent Works unless approved otherwise by the Engineer. If, with the said Approval of the Engineer 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.



TECHNICAL SPECIFICATIONS



SECTION-01: 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 one week 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 at his own cost.



Technical Specifications

- 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 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.
- 1.9 The Contractor shall not use the site for any other purpose than that of carrying out this Contract work.
- 1.10 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.
- 1.11 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.
- 1.12 The works included in this contract are rehabilitation, repair and / maintenance in nature, and, the rates quoted for these in BOQ is for the work complete in all respect including cost of materials, cost of wastages, cost of transportation, cost of cutting & fitting / fixing, cost of breaking through roof slab and / or walls of concrete or masonry, cost of contractor profit & overhead charges etc.



SECTION-02: PVC, uPVC PIPES AND FITTINGS**1. SCOPE:**

- 1.1 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 PVC & 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 & STANDARDS:

- 2.1 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 Unplasticized PVC Pressure Pipes.
- B.S. 3505: Unplasticized PVC pipe for Cold Water Services.
- AWWA Manual M23: PVC-Pipe – Design and Installation.
- ASTM D 1785: Poly Vinyl Chloride (PVC) Plastic Pipe Schedules 40, 80 and 120.
- ASTM D 2665: Poly Vinyl Chloride (PVC) Plastic Drain, Waste and Vent Pipe and Fittings.

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. GENERAL REQUIREMENTS:

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



4. SUBMITTALS:

- 4.1 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.
- 4.2 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.
- 4.3 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.

5. SPECIAL REQUIREMENTS:

- 5.1 Pipes and fittings shall be suitable for the intended use.
- 5.2 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.
- 5.3 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.
- 5.4 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.
- 5.5 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.

6. MATERIALS:

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



- 6.2 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. TRANSPORTATION, HANDLING & STORAGE:

- 7.1 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.
- 7.2 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.
- 7.3 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.
- 7.4 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.
- 7.5 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.
- 7.6 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.
- 7.7 Do not store the pipe close to heat sources or hot objects, such as heaters, boilers, steam lines, or engine exhaust.
- 7.8 When unit packages are stacked, ensure that the stack remains stable to avoid pipe damage or personal injury.

8. MEASUREMENT & PAYMENT:

- 8.1 Measurement of acceptably completed works of PVC & 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.
- 8.2 Payment will be made for the acceptable measured quantity of PVC & uPVC pressure pipes including fittings at the unit rate per linear meter quoted in the Bills of Quantities and shall constitute full compensation for all the works related to the item.



SECTION-03: PLUMBING AND SANITARY FITTINGS

1. SCOPE:

- 1.1 The work shall include, furnishing and supplying as required all labour, materials, fittings, fixtures, accessories, equipment and services for the execution, completion, testing and commissioning of plumbing, sanitary installation works as shown on drawings, specified herein or as directed by the Engineer.

2. SUBMITTALS:

- 2.1 The Contractor shall submit samples of materials such as fittings, fixtures and accessories to be incorporated into the works to the Engineer for approval.

3. SOIL, WASTE AND VENT PIPES:

- 3.1 All PVC & uPVC soil, waste and vent pipes and fittings shall be truly circular of the clear internal diameter as specified of a uniform thickness, smooth and free from flaws, air bubbles, cracks, holes and other defects. They shall allow cutting, chipping or drilling without damage. These shall conform with the provisions provided in Section-02 or approved equivalent.

4. TRAPS AND CLEANOUTS:

- 4.1 **FLOOR TRAPS:** Floor Traps shall be of self-cleaning design, provided with water seal. Traps of the specified size used for underground installation shall be high density PVC generally in accordance with the provisions provided in Section-02.
- 4.2 **GULLY TRAPS:** Gully traps should be of non-absorbent material, and, should have sufficient water seal. These should be self-cleaning and should not obstruct the flow of sewage.

5. FIXTURES:

- 5.1 **WASH BASIN:** The wash basins shall be glazed earthen ware in sizes and colours as specified. The wash basins shall be of specified make and the following shall generally be provided at the time of manufacture;
- A slot for the overflow shall be 6.3 cm (2.5") long and 13 mm (0.5") deep so designed as to facilities cleaning.
 - Soap tray or sinking shall be provided as to drain into the basin.
 - Tap holes shall be square to fit pillar taps shall be bevelled around the opening. They shall be so situated as to allow supply pipes to be clear of waste and vent



- pipes and shall have enough space to prevent the users striking the head on the tap.
- Waste hole shall have a minimum diameter of 6.3 cm (2.5"). The outlet shall be bevelled or rebated. The hole shall be square in shape and each side shall be 2.86 cm (1-1/8") length.
- Plug chain stay hole shall not be lower than the over flow slot. Back skirting shall be true to receive splash back.
- Stud slots shall be monolithically cast with the wash basin. These shall receive the brackets on the inside of the basin, shall be so situated that the brackets remain 5 cm (2") away from the face. These shall not exceed 13 mm (1/2") in dia 8 mm (5/16") in height and shall be 13.5 cm (12") from the back of the basin to the centre of the side.
 - **Brackets:** The length of the brackets shall be such as to enable 10 cm (4") embedding in the wall or fixed to the wall with the help of screws. Bracket shall be of painted iron or white porcelain enameled.
 - **Pillar Taps:** Pillar taps shall be manufactured from gun metal and shall be chromium plated. These shall be of screw type with jam nut. Internal dia of the tap shall be 13 mm (1/2").
 - **Waste Pipe:** This shall be either of PVC, nickel or C.P Brass and shall have diameter to fit at the bottom of the waste fitting flange. Its length shall extend from the bottom of waste flange to the floor.
 - **Pedestal:** Pedestal shall conform to the corresponding specifications of wash basin for composition, manufacture and quality. It shall be completely recessed at the back for the reception of supply and waste pipes. It shall be such that the basin is tightly and adequately supported and shall be so arranged that the height from the floor to the top of the rim of basin is 79 cm (31").
- The Wash Basin shall be supplied complete with fittings and accessories as specified.

5.2 WATER CLOSETS:

- **European Type Water Closets:** The W.C shall be pedestal type white glazed earthen ware or of color as specified durable non-absorbent material with a water pool of good effective seal not less than 5 cm (2"). There shall be no sharp angles, the surface shall be so rounded as to be easily cleaned. The closets shall be of syphonic action or washed down type or as directed by the Engineer-in-Charge. Four holes 6 mm (0.25") shall be provided in the pedestal for fixing the W.C to the floor.
- **Indian Type Water Closets:** The water closets shall be of glazed earthen ware of color as specified nonabsorbent durable material. There shall be no sharp angles, the surface shall be so rounded as to be easily cleaned. The closets shall



be embedded below the floor in lean concrete with its top level with the floor. The foot rest shall be either integral part of the W.C or shall be provided separately in which case shall be of the same material as the pan.

- **Trap:** The trap P or S for European type W.C shall be self-cleaning with a minimum water seal of 50 mm (2") and made of the same materials as the pan.
- **Seat:** The seat for the European type W.C shall be of approved quality backlite plastic seat with lid hinged and fixed to the closets by pillar bolts. The hinged device and pillar and nuts shall be of non-corrosive material. The pillar bolts shall be 6 cm (2-3/8") long and shall be held securely by the nuts underneath the pan seat plugs. The backlite seat should have rubber buffers securely fixed to the under-side to prevent damage to the pan. The seat cover shall be of the same material as that of the seat. The backlite cover shall have rubber buffers.
- **Flushing Cistern:** The Cistern shall be low level cistern. It shall be of PVC or as approved by the Engineer, complete with all internal fittings. The bottom of the cistern shall be 30 cm (2.5 feet) above ground level. The inlet to the cistern shall be controlled by 13 mm (1/2") ball valve and 13mm (1/2") stop cock both made from gun metal or brass. The cistern shall be silent filling with an overflow arrangement. The cistern shall be supported on M.S or C.I cantilever brackets and painted with approved enamel paint with 10 cm (4") support in the wall or it may be attached to the wall with the help of rowl plugs. The flush pipe shall be 30 mm (1-1/4") PVC painted. Moulded rubber cone shall be provided for connection with the pan.
- **Soil Connection:** Ordinarily in case of European type W. C the closet shall have trap above the floor and the connection with the soil pipe through an external wall.
- **Size of Closet:** Ordinarily the closet shall be 40 cm (16") on shorter side. For schools, nurseries 35 cm (14") 30 cm (12") and 25 cm (10") be adopted as per instructions of the Engineer.
- **Connection of Water Closet with Soil Pipe:** If the trap is of earthen ware, it shall be connected with the water closet with 1:2 cement sand mortar joint. If the trap is of cast iron, it shall be connected with gaskets and 1:2 cement sand mortar joint.

5.3 **TOILET PAPER HOLDER:** The toilet paper roll holder shall be wooden/ plastic with either glazed earthenware or CP brass or plastic brackets and screws etc. and shall be fixed in the wall adjacent to water closet.

URINALS: Urinals shall be of stall type. These shall be in colour as specified and glazed fire clay and of the following dimensions: Height from treads to top of division 45 cm (1.5 feet). Width center to center of divisions - 60 cm (2 feet). The urinal range shall be provided with automatic or hand pulled flushing cistern in glazed fire clay or



PVC in colour as specified of the capacity according to the numbers of stalls to be flushed. The flush pipe and spreader shall be of C.P brass. The trap shall be of C.I 62 mm (2.5") to 75 mm (3") depending on the number of stalls in the range and approved by the Engineer.

- 5.5 **SHOWERS:** A shower head shall consist of corrosion resisting cast or fabricated sheet metal rose having perforations and shall be adjustable to give varying degrees of spray. Shower unit shall be complete with or without hot and cold-water mixing arrangements and stainless-steel rigid or flexible pipe extension and an additional low down water trap.
- 5.6 **TAPS, COCKS AND MUSLIM SHOWER:** All the taps, cocks and muslim shower shall be of brass, gun metal or other equally suitable corrosion resisting alloy conforming to BS 1010 and shall be chrome plated. The nominal size specified shall be the nominal bore of the seating. The water area of the way throughout the body shall be not less than the area of a circle of diameter equal to the nominal size of tap / cock / muslim shower. Washers for cold water cocks shall be of specially selected leather, rubber asbestos composition or other equally suitable material. Washers for hot water cocks shall be of good quality fiber, rubber - asbestos composition or other equally suitable material. Every tap/cock shall be tested, complete with its component parts, to a hydraulic pressure of at least 284.4 Psi. During test it shall neither leak nor sweat. The connecting pipe of muslim shower shall be of C.P Chain or of make approved by the Engineer.
- 5.7 **TOWEL RAIL, SOAP DISH & TUMBLER HOLDER:** The towel rail shall be 1/2 inches round or square C.P brass or stainless-steel rod with end brackets and screws of similar material. Soap dish shall be straining type heavy duty glazed earthen ware, chromium plated stainless steel or plastic complete with screws. Tumbler holder shall be of glazed earthen ware, chromium plated, stainless steel or plastic complete with screws. Tooth brush holder with tooth paste dish shall be of glazed earthen ware, chromium plated stainless steel or plastic complete with screws etc.

6. INSTALLATION INSTRUCTIONS:

- 6.1 The contractor shall be responsible for the safety of his work and shall replace any material and equipment that may be damaged or lost without any additional cost to the employer until the works are completed and taken over by the employer.
- 6.2 All openings left in floor for passage of lines of soil, waste, vent etc. shall be covered and protected. All open ends of pipes shall be properly plugged to prevent any foreign material from entering the pipe.
- 6.3 Before erection all pipes, valves, fittings etc. shall be thoroughly cleaned of oil, grease or other material. All metal fixture trimmings shall be thoroughly covered with non-corrosive grease which shall be maintained until all work completed. Upon the completion of the work, all fixtures and trimmings shall be thoroughly cleaned polished and left in first class condition.



Technical Specifications

- 6.4 All pipes shall be properly installed as shown on the drawings and/or as directed by the Engineer and shall be as straight as possible forming right angles and parallel lines with the walls and other pipe lines as far as possible. The position, gradients alignment and inverts shall be 2% for pipes of 200 mm or larger dia or as shown on the drawings and / or as directed by the Engineer.
- 6.5 The arrangement, positions and connections of pipe fittings and appurtenances shall be as shown on the drawings or as directed by the Engineer. Special precautions shall be taken for the installation of concealed pipes as shown on the drawings and / or as required. Should it be necessary to correct piping so installed the contractor shall be held liable for any damage caused to other works in the correction of piping.
- 6.6 A minimum distance between different services shall be maintained as shown on the drawings and / or as approved by the Engineer. Pipes should be installed in such a manner that minimum distance is always maintained between the pipes and the walls, beams, columns etc as shown on the drawings and / or as approved by the Engineer.
- 6.7 Waste-water outlet from each fixture or a battery of fixtures directly connected to the sewerage system shall be equipped with a water-seal trap.
- 6.8 Each vent terminal shall extend to the outer air and terminate in cowl or wire mesh balloon and be so installed as to prevent the possibilities of clogging and the return of foul air to the building. Vent and waste stacks should extend 300 mm above roof if not used by occupants and 2000 mm if used by occupants.
- 6.9 When the roughing in is completed, the plumbing system shall be subjected to test prior to concealing the roughing-in, in order to ascertain that all threads and connections are gas and watertight.
- 6.10 No structural member shall be weakened or impaired by cutting notching or otherwise, except to the extent allowed by the Engineer.
- 6.11 All exterior openings provided for the passage of piping shall be properly sealed with snugly fitting collars of metal or other approved rat-proof material securely fastened into place.
- 6.12 Joints at the roof around vent pipes shall be made watertight by the use of lead or other approved flashing material. Exterior wall openings shall be made watertight.
- 6.13 Bolts and nuts for wall hanging fixtures shall be of heavy construction steel to fully carry the weight that will be placed on the carrier by the fixture and users.
- 6.14 Where different sizes of pipes, or pipes and fittings are to be connected, the proper size reducers or reduced fittings shall be used between the two sizes. Bush fittings shall not be used.



- 6.15 Any fitting or connection, which has an enlargement, chamber or recess with a ledge, shoulder or reduction of pipe area that offers obstruction to flow through the drain is prohibited.
- 6.16 The vertical distance from the fixture outlet to the trap weir shall not exceed 600 mm.
- 6.17 Each fixture trap shall have a water seal of not less than 50 mm and not more than 100 mm.
- 6.18 Where fixture comes in contact with wall and floors, the joint shall be watertight.
- 6.19 Pipes in ground shall be laid on a firm bed for its entire length.
- 6.20 Pipes in the plumbing system shall be installed without undue strains and stresses. Vertical piping shall be securely held to keep the pipe in alignment and carry the weight of the pipe and contents. Horizontal piping shall be supported to keep it in alignment and prevent sagging. Hangers and anchors shall be of metal of sufficient strength to maintain their proportional share of pipe alignments and prevent rattling. Hangers and anchors shall be securely attached to the building. The contractor shall be fully responsible for hangers and supports and shall obtain prior approval of design as to the shape, material, dimensions, spacing etc.
- 6.21 Pipes in concrete or masonry walls or footings shall be placed or installed in sleeves, which will permit access to the piping for repair or replacement. All holes / slots made in the walls, roofs, ceiling and floors for installation of pipes shall be properly made good and finished to original conditions to the satisfaction of the Engineer.
- 6.22 Plumbing fixtures shall be installed in a manner to afford easy access for cleaning. The space between the fixture and the wall shall be closely fitted and painted so that there is no chance for dirt or vermin to collect.
- 6.23 Where practical, all pipes from fixtures shall be run to the nearest wall.
- 6.24 Where fixtures shall be rigidly supported by metal supporting members so that no strain is transmitted to the connections. Flush tanks and similar appurtenances shall be secured by approved non-corrosive screws or bolts.
- 6.25 Fixtures shall be set level and in proper alignment with reference to adjacent walls. No water closet shall be set closer than 400 mm from its center to any side wall. No urinal shall be set closer than 300 mm from its center to any side wall or partition nor closer than 1200 mm center to center. No wash basin shall be set closer than 100 mm to the side wall or partition nor closer than 600 mm center to center.
- 6.26 The supply lines or fittings for every plumbing fixture shall be so installed as to prevent backflow.
- 6.27 All cuttings and holes shall be made good.



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- 6.28 Floor traps shall have openings for connection of inlet pipes from fixtures. The invert level of inlet pipes shall be at least 25 mm above the trap weir level.
- 6.29 Floor traps shall be well set in position so that there is no leakage at the joint between trap and the floor. The requirements specified above for floor traps are equally applicable for floor drains except that no water seal is required and it shall be of the specified size.
- 6.30 Roof drain shall have strainers extending at least 10mm above the roof surface immediately adjacent to them when installed on flat part. Bottom of strainer shall be flush with the roof surface when installed on vertical part. Strainer shall have an available inlet area, above roof level, of not less than 1-1/2" times the area of the down-pipe to which the drain is connected. The connection between roof and roof drain shall be made watertight by use of proper flashing material.
- 6.31 All soil waste and vent pipes and fittings shall be installed plumb and true to lines and grades shown on the drawings or as directed by the Engineer-in-Charge.
- 6.32 Where installed vertically, pipes shall be supported from wall by metal clamps of approved type and make at each floor just below the Horizontal branch pipe connection and at intermediate levels. The spacing of vertical and horizontal pipe supports shall be 1.5 m to 3 m respectively and dia of steel support shall be 13 mm.
- 6.33 Pipes passing through walls, floors or roof shall be placed in metal sleeves of approved design. The annular space between the sleeve and pipe shall be at least 15 mm. The space shall be packed with approved filler (Oakum or Hemp) and shall be sealed at both ends with approved sealant (Bituminous material or mastic).

7. MEASUREMENT AND PAYMENT:

- 7.1 All fixtures shall be measured and paid in numbers unless otherwise specified.



SECTION-04: MS IRON AND STEEL WORKS

1. SCOPE:

- 1.1 This Section covers general requirements of Iron steel, steel work fabrication, methods including precautions for erection of steel structures, painting and other general requirements incidental to steel work, for complete job as shown on the design drawings or as directed by the Engineer. The applicable requirements of this section as determined by the Engineer shall apply to all Iron and structural steel works. The work covered by this section, consists of supply of all material, labour, plant, equipment and appliances including welding, bolts, nuts, washers, anchor bolts, embedded parts etc., fabrication, erection and painting in accordance with the specifications and as per drawings and as directed by the Engineer.

2. APPLICABLE CODES & STANDARDS:

- 2.1 The work shall conform to the requirements of the following Codes and Standards, unless otherwise specified by the Engineer.
- ASTM A-36-81: Structural steel specifications.
 - ASTM A-307-80: Specifications for carbon steel bolts.
 - BS 729-71: Hot dip galvanized coating on iron and steel articles.
 - AWS D-12: Recommended Practice for welding steel.

3. SUBMITTALS:

- 3.1 Prior to execution of work and sufficiently in advance, the Contractor shall submit the following to the Engineer for approval:
- Shop Drawings, which shall show full construction details, quantities and locations, with metal gauges, reinforcing, cut-outs, holdfasts & attachment to adjacent construction and materials.
 - Samples for approval.
 - Methodology for fabrication, installation, erection and fixing.

4. QUALITY ASSURANCE:

- 4.1 All materials / items shall be the product of reputable manufacturer and shall be of the type indicated on the Drawings and shall conform to the requirements specified herein or as instructed by the Engineer.



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- 4.2 Frames shall be fabricated from locally available hot flush hollow pressed sections, 'Z' section angle, tee and channel or pipe sections as specified in the drawings. Materials shall conform to ASTM-A-36.
- 4.3 All frames shall be secured to the structure with strong wrought iron holdfasts. Holdfast shall be 50 mm wide and 6 mm thick and shall be secured to frames. Attachment shall be concealed.
- 4.4 The internal surfaces of frames and shutter including frame shall be painted with one coat of epoxy primer or as directed by the Engineer.
- 4.5 External surfaces in contact with or embedded in concrete shall not be painted, greased or oiled. However, such surfaces shall be given a cement wash after sandblast cleaning. All other external surfaces shall be given two coats of primer and two coats of epoxy enamel paint or as specified.
- 4.6 Accessories such as hinges, steel standard track, roller and guides, standard bracket, anchors, bolts, locks handles, latches, L-drops, stoppers, hydraulic door closure shall be heavy duty and shall conform to the requirements shown on the drawings or as directed by the Engineer.
- 4.7 Window frame and / or ventilator sections shall be of mild steel.
- 4.8 Hinges shall be subject to the approval of the Engineer.
- 4.9 All structural steel shall conform to the requirements of ASTM A-36 or equivalent.
- 4.10 All welding shall be executed and inspected in accordance with the provisions of the applicable code of the American Welding Society.
- 4.11 All bolts, including anchor bolts shall conform to the requirements of ASTM A-307 or equivalent.
- 4.12 Construction joint of steelwork welded to full depth and width, or equivalent splice plates shall be welded on unexposed faces of frames. Exposed surfaces of welded joints shall be dressed and ground smooth to produce invisible connections.
- 4.13 Reinforcement and stiffeners shall be welded to the inside of the frame surfaces.
- 4.14 Doors, Windows, and / or ventilators shall be provided with all necessary clips and anchors required for securing the windows to the structure.
- 4.15 The steel sections shall be thoroughly straightened in the shape by methods that will not injure it before being laid off or worked in any way.
- 4.16 All members shall be so cut and formed that they can be accurately assembled without being unduly cracked strained or forced into position.



- 4.17 The jointing of different parts of the members of mild steel shall be carried out by welding process in conformity with the requirements of American Welding Society for such joints. Welding points shall be made quite smooth by filing them and making smooth.
- 4.18 The Contractor shall be responsible for proper protection and installation of all items (doors / windows / ventilators) furnished. Should the prime coat be damaged, or rust scale appears, he shall at his own expense and at the Engineer direction, have all exposed surfaces cleaned to bare bright and re-primed with an approved priming coat before finish painting.
- 4.19 All items shall be installed plumb and square and shall be solidly anchored in a good workman-like manner in accordance with the approved Shop Drawings. The Contractor shall be responsible for the protection of installed items from damages by other trades. All items shall be left in operating neat and clean condition free from dirt, finger marks, etc. The Contractor shall be responsible for final cleaning before final acceptance.
- 4.20 The non-galvanized doors, windows and ventilators shall be painted with primary coat of red oxide and good quality double boiled linseed oil or any approved anti-corrosion paint after proper grinding. Afterwards two coats of synthetic enamel paint of approved make and shade shall be given.
- 4.21 Two coats of red primer and one coat of synthetic enamel paint shall be applied on all components of shutters except galvanized shutter, after fabrication and before installation. One coat of synthetic enamel paint shall be applied to all exposed surfaces after installation. Before applying paint, all surfaces shall be cleaned from rust, burrs, scale, dust or grease.
- 4.22 The finished work shall be strong and rigid; neat in appearance and free from defects. Plain surfaces shall be smooth and free from warp or buckle. Molded members shall be clean, straight and true. Fastenings shall be concealed where practicable.
- 4.23 The painting as specified shall be carried out in accordance with the applicable provisions or as per directions of the Engineer.

5. MEASUREMENTS & PAYMENT:

- 5.1 The measurement and payment for the items of MS Iron & Steel Works hereof shall be made corresponding to the applicable CSR item as provided in Contract Agreement and shall constitute full compensation, for procurements, transportations, performance in all respect and completion of work as specified including the site clearance as approved by the Engineer.



SECTION-05: PLAIN AND REINFORCED CEMENT CONCRETE

1. SCOPE:

- 1.1 The work shall include furnishing of all labour, materials, plant, equipment, accessories and services as required to complete the concrete items as shown on the drawings, specified herein and/or as directed by the Engineer. The materials herein specified shall be proportioned, mixed, formed and placed in accordance with the herein stated requirements. The stipulations and requirements herein set forth shall apply except when such stipulations and requirements are specifically modified by the Engineer for any particular item of work.

2. CLASSIFICATION OF CONCRETE:

- 2.1 In order to meet the required strength and durability, the concrete shall be divided in to 1:1:2, 1:1.5:3, 1:2:4, 1:3:6, 1:4:8 (Cement: Fine Aggregate: Coarse Aggregate).

3. TYPES OF CONCRETE WORKS:

- 3.1 Concrete may be of the following types:
- **Underground Concrete:** Concrete poured below Natural Surface Level with or without shuttering.
 - **On-ground Concrete:** Concrete poured by erecting formwork with necessary bracings on ground.
 - **Elevated Concrete:** Concrete poured by erecting props, bracing etc. to support the formwork at higher levels.

4. PLAIN AND REINFORCED CEMENT CONCRETE:

- 4.1 **Cement:** Cement shall be fresh, furnished in sacks. Unless otherwise permitted, cement from not more than two plants shall be used and in general, the product of only one plant shall be used in any particular section of the work. Cement recovered through cleaning of sacks shall not be used.

Cement shall be Portland Cement of Pakistan origin and manufacture unless otherwise approved by the Engineer. Portland cement shall conform to Pakistan Standard 232 or to British Standard 12 or to ASTM C 150.

Cement shall be stored at Site in dry, weather tight and properly ventilated stores. All storage facilities shall be subject to approval and shall be such as to permit easy access for inspection and identification of each consignment. The following special precautions shall be observed for storage of cement:



- Reduce the time of storage as much as possible.
- The sack should be stacked closely on damp proof or timber raised a foot or so from the ground with the air space below.
- To avoid bursting of bags and setting under pressure the height of stack should be limited to eight (8) bags.

4.2 **Aggregates:** The aggregates should be free from injurious amount of clay, salt, alkali, organic matter, shale, loam, soft flaky particles and other deleterious substance. Aggregate when not obtained in clean state are invariably washed before use. All deleterious substance shall not exceed 5% in fine aggregates and shall not exceed 3% in coarse aggregate. The extent of these impurities is determined by various field and laboratory tests as described in the testing requirements of fine and coarse aggregates.

Aggregates should be Crushed aggregate which should be sharp, angular and of hard grains, approximately cubical in size. The fine aggregate should be such shape that it covers the maximum voids between coarse aggregates.

To obtain high crushing strength of concrete the maximum size of aggregate should be as large as conveniently possible but it should not be normally greater than one-fourth in plain concrete and one-fifth in reinforced concrete of the smallest dimension in the structure.

Aggregates are required to be graded into different size and mixed in desired proportions for producing mortar and concrete of specified quality and strength. The graded aggregate is one that contains all size of particles between extremes of limits proportions to produce a dense and economical mixture which will use minimum of cement per unit volume to give required strength. The aggregates are graded into minimum of cement per unit volume to give required strength.

Aggregates should be hard to resist grading actions; tough to withstand impact and sound to remain whole during changes in weather conditions. the resistance to grinding action is determined by Los Angeles Abrasion Test. The soundness test is carried out by means of Sodium Sulphate Test. Crushing strength test is carried out to determine the strength.

Aggregates Storing on dusty, muddy or grassy spots, should be avoided. Dump must be protected from exposure to dust.

The fine aggregate shall consist of sand, stone screenings or other approved inert materials with similar characteristics, or a combination thereof, having clean, hard, strong, sound, durable, uncoated grains free from injurious amount of dust, lumps, soft or flaky particles, shale alkali, organic matter, material reactive with alkalis in the cement loam or other deleterious substances and shall not contain more than three (3) % of material passing the No. 200 sieve by washing nor more than one percent of clay lumps or one (1) % of shale. The fine aggregate shall be uniformly graded and when tested in accordance with AASHTO T 11 and T 27.



The coarse aggregate shall consist of crushed or broken stone inert materials with similar characteristics, or a combination thereof, having clean, hard, strong, sound, durable uncoated particles, free from injurious amount of soft, friable, thin elongated, or laminated pieces, alkali, organic or other deleterious matter and conforming to the requirements. Coarse aggregate gradation should conform to the requirements of ASTM C 33. Coarse aggregate shall contain no more than one (1) % by weight of material passing the No. 200 sieve by washing and not more than five (5) % of soft fragments. It shall have an abrasion loss of not more than forty (40) % at five hundred (500) revolutions, when tested in accordance with AASHTO T 96.

When tested in accordance with AASHTO T 104, for five cycles, the loss with the sodium sulphate soundness test shall be not more than 12 percent.

All aggregates shall be subject to testing which shall be carried out by the contractor at his own expense upon instructions of Engineer. Aggregates not meeting the requirements of these Specifications as determined by tests or inspection may be rejected.

- 4.3 **Water:** The water for curing, for washing aggregates and for mixing shall be subject to the approval of the Engineer. Generally, it should be free from oil. The water shall be free from oil, alkali, vegetable matter, salt and other impurities.

When required by the Engineer, the quality of the mixing water shall be determined by the Standard Method of Test for Quality of Water to be used in concrete, AASHTO T 26.

- 4.4 **Proportioning & Mixing of Concrete Mix:** The proportioning of the concrete for its ingredients namely cement, sand and coarse aggregates is specified for CSR items on volume basis and on weight basis for the specified use. The proportioning and batching of concrete mix shall accordingly be done on volume basis. The proportion in which the various ingredients are to be used for different parts of the work shall be as determined from time to time during the progress of the work and as tests are made of the aggregates and the resulting concrete. Mix proportions and water-cement ratio shall be so determined as to produce concrete having suitable workability, density, impermeability, durability or strength. The contractor shall not be entitled to any compensation because of these adjustments.

The amount of water used in the concrete shall be so regulated as to secure concrete of a proper consistency and to adjust for any variation in the moisture contents, or grading of the aggregates as they enter the mixer. Water shall not be allowed to be added to undo the stiffening of the concrete resulting from excessive over-mixing or objectionable drying before placing. Uniformity in concrete consistency from batch to batch shall be required.

For volumetric proportioning suitable gauge boxes shall be used. Cement shall be taken as weighing 50 Kg as per standard bag of 0.035 cubic meter (1.25 ft³). The bulking effect of aggregates shall be taken into the consideration.



The Engineer shall ensure preparations for various strength requirements, based on the availability of local materials. Depending upon the variations in site condition and locally available aggregate (both coarse and fine) the Engineer shall ensure preparation of Concrete mix and get them tested (if required by the Engineer) from an authenticated Government Material Testing Laboratory at the expense of the contractor before commencement of the Job.

Concrete shall have a consistency such that it will be workable in the required position. It shall be of such a consistency that it will flow around reinforcement steel but individual particles of the coarse aggregate when isolated shall show a coating of mortar containing its proportionate amount of sand. The consistency of concrete shall be determined to be as dry as it is practicable to satisfy the requirements for transportation and placing of the concrete as described / directed. Consistency of concrete shall be determined as specified in AASHTO T 119.

The selection of water cement ratio as a basis for designing a concrete mixture involves consideration of both the degree of exposure to which the concrete is to be subjected and the strength requirements of the structure. In general, the mix shall provide for water - cement ratios by weight with aggregate at saturated surface dry condition, which will be determined on the basis of producing concrete having suitable workability, density, impermeability, durability and the required strength without the use of excessive amount of cement. It is expected that water-cement ratio by weight will vary from 0.45 for concrete in thin sections to 0.65 for mass concrete in severe weather conditions. Maximum permissible water cement ratio will also vary from 0.67 for low strength concrete to 0.38 for the concrete 28 days strength of 4000 Psi and above.

The mode of mixing (i.e., hand mixing or machine mixing) shall be as specified and determined by the Engineer keeping in view the size of work. Hand mixing shall not be carried out without the approval of the Engineer.

4.5 **CONVEYING OF CONCRETE:** Concrete shall be conveyed from mixer to the place of final deposit as rapidly as practicable, by methods which will prevent segregation or loss of ingredients and in accordance with ACT304. Any wet batch hopper through which the concrete passes shall be conical in shape. There shall be no vertical drop greater than one metre except where the use of such equipment is approved in writing by the Engineer, in advance of any use.

4.6 **PLACING OF CONCRETE:** The method and equipment used for transporting concrete must ensure that concrete having the required composition and consistency are delivered to the workout objectionable or loss of slump.

Concrete shall be placed only in presence of the Engineer or his / her representative.

Any concrete which has become so stiff that proper placing cannot be assured shall be wasted and no payment shall be made to the contractor for such wasted concrete, including contained cement. Concrete shall be deposited direct in all cases as near as



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practicable to its final position and shall not flow in a manner to permit or cause segregation.

Concrete shall not be placed during rains unless proper protection is afforded.

Each layer of concrete shall be consolidated to the maximum practicable density so that it is free from pockets of aggregates, and close snugly against all surface of forms and embedded materials.

Special care shall be taken in placing concrete when it has to be dropped from a height, especially when reinforcement is in the way, and every effort shall be made to reduce this drop to the minimum.

In placing concrete through reinforcement, care shall be taken that no segregation of the coarse aggregate occurs. In certain cases, like the bottom of beams and slabs, the congestion of steel near the forms may make placing difficult. In such cases, as decided by the Engineer-in-Charge, a layer of mortar of a composition compatible with the required concrete strength shall be first deposited to cover the surface to a depth of 15mm.

- 4.7 **VIBRATION OF CONCRETE:** Recommended Practice given in ACI 309 shall be followed for concrete consolidation. Concrete shall be compacted with mechanical or electrical vibrating equipment supplemented by hand spading and tamping. In no case shall vibrators be used to transport concrete inside the forms. The vibrating equipment shall be of internal type and shall at all times be adequate in number of units and power of each unit to properly consolidate all the concrete. Form or surface vibrators shall not be used unless specifically approved. The duration of vibrations shall be limited to that necessary to produce satisfactory consolidation. Excessive surface working will not be permitted.

- 4.8 **TESTING OF COMPRESSIVE STRENGTH OF CONCRETE:** Concrete compressive strength requirements consist of a minimum strength at the age of twenty-eight (28) days and the minimum strength that must be attained before various loads or stresses are applied to the concrete. The various strengths required are specified as below:

- Minimum 28 days cylinder strength of 1:1.5:3 Concrete: 3500 Psi.
- Minimum 28 days cylinder strength of 1:2:4 Concrete: 3000 Psi.
- Minimum 28 days cylinder strength of 1:3:6 Concrete: 1500 Psi.
- Minimum 28 days cylinder strength of 1:4:8 Concrete: 1200 Psi.

The compressive strength of concrete will be determined from test cylinders, which have been fabricated from concrete sampled and tested in accordance with AASHTO T 23 and T 22.



A set of six (6) cylinders shall be taken from each fifty (50) cu m of each class of concrete or fraction thereof placed each day, three (3) of the six (6) cylinders to be tested after seven (7) days and three (3) after twenty-eight (28) days.

The minimum average twenty-eight (28) days' test result of all samples tested at any time shall be the specified twenty-eight (28) days' strength.

No individual samples tested after 28 days shall show a test result lower than eighty-five (85) % of the required twenty-eight (28) days.

Concrete represented by any single test cylinders that fails to comply with the requirement under above will be rejected unless the Contractor at his expense, provides evidence that the strength and quality of the concrete placed in the work are acceptable. If such evidence consists of tests made on cores taken from the work, the cores shall be obtained and tested in accordance with the specifications of AASHTO T 24. Test results of the cores shall meet the following requirements:

- Average test result of the cores shall not be less than the minimum required twenty-eight (28) days' strength
- No individual core shall show a strength less than ninety-five (95) % of the required twenty-eight (28) days' strength.

Should the above test results fail to comply with the requirements, concrete of that particular pour shall be rejected and removed as directed by the Engineer.

- 4.9. **CONCRETE REINFORCEMENT:** The work shall include providing, cutting, bending, fabricating, assembling and placing of all concrete reinforcement including rods and fabric in accordance with Drawings, Specifications and Standards as referred hereunder. Reinforcement shall not be stacked on the ground to save it from mud, rust or other dangerous coatings. Different sizes shall be stacked separately to facilitate deification. The bent bars ready for fixing shall be correctly marked in order that there is no difficulty in selecting the correct bars. The bar to be fixed shall be free from dust, oil, paint, rust or loose scale. All bending of bars shall be done cold by the application of slow, steady pressure or with a suitable machine.

The Contractor shall submit the following to the Engineer for his / her approval / record before execution of work:

- Shop Drawings for fabrication, bending and placement of concrete reinforcement. ACT 315 shall be complied with showing bar schedules, stirrup spacing, diagrams of bent bars, arrangement of concrete reinforcement and special reinforcement required for openings through concrete structures.
- Samples of materials as specified and as otherwise may be requested by the Engineer including names, sources and descriptions as required.
- Mill certificates or laboratory test reports if required by the Engineer.



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Concrete reinforcement shall be hot rolled deformed steel bars conforming to ASTM Designation A 615 and shall have a minimum yield strength of 40,000 Psi (Grade 40). Steel bars of a high strength, if required, shall have a minimum yield strength of 60,000 Psi (Grade 60) and shall conform to ASTM A-615 or PS 605. Supports, spacers or ties required shall conform with the Specifications and Standards for main reinforcing steel as mentioned before.

Minimum tensile strength requirement for Grade 40 bars is 60,000 Psi and that for Grade 60 bars is 90,000 Psi.

The Contractor shall furnish, cut, bend, and place all steel reinforcement including rods and fabric, as indicated on the Drawings or otherwise required. All reinforcement when surrounding concrete is placed, shall be free from loose flaky rust and scale, and free from oil, grease or other coating which might destroy or reduce its bond with the concrete. All placing and fixing shall be in accordance with Drawings furnished or approved by the Engineer.

The Contractor shall ensure that the bars do not get cracked or damaged during bending and fabrication. Steel reinforcement may be mill or field cut and bent. All bending shall be in accordance with ACI 315 and by approved machine methods. When bending is required, it shall be performed prior to embedding the bars in the concrete. In all such cases, the bars shall be cold bent. Bending or straightening of bars partially embedded in set concrete shall not be permitted.

The spacing of bars shall be as shown on the Drawings or as directed in writing by the Engineer-in-Charge. The variation from indicated spacing, provided that the total area of reinforcement is in accordance with the Drawings.

The cover for all main reinforcement shall conform to the dimensions shown on the Drawings and in no case less than $\frac{1}{2}$ inch or diameter of the bar whichever is more. The protective covering shall not be less than, and shall not exceed by more than 6 mm the values specified on the Drawings. The dimensions, as shown on the Drawings, indicate the clear distance from the edge of the main reinforcement to the concrete surface.

All reinforcement shall be secured in place by use of concrete supports, Chairs, spacers, or ties may be of metal or as approved by the Engineer. Such supports shall be of sufficient strength to maintain the reinforcement in place throughout the concreting operations. Concrete supports shall be manufactured of the same concrete strength as used in the structure to be concreted.

All reinforcement bundled, tagged and marked with complete identification shall be delivered at Site. Reinforcement shall be stored at Site clear of ground and protected from mud and other deleterious materials.

4.10

CONCRETE FORM WORK: The work shall include design, erecting, supporting, bracing and maintaining form work so that it will safely and rigidly support all vertical and lateral loads encountered during construction. The extent of formwork is indicated



by the concrete work shown on the Drawings. Unless otherwise specified, no separate measurement or payment shall be made for "Providing Erection and Removal of Formwork" as specified herein, as all cost thereof shall be considered to be included in the Contract unit prices for the various concrete items requiring formwork.

The form work shall be of New Plywood 19 mm thick with continuous support for edges parallel to framing shall be provided. Approved type forms made of steel, plastic, or other suitable materials may be used in lieu of plywood, provided the formed surfaces obtained conform to the requirements and subject to the approval of the Engineer.

The formwork shall conform to the shape, lines and dimensions as shown on the Drawings and be so constructed as to remain sufficiently rigid during the placing and compacting of the concrete, and shall be sufficiently tight to prevent loss of liquid from the concrete.

Forms for various parts of the structure shall not be removed before the specified time has elapsed after placing the concrete. Consideration shall be given to the weather and other conditions influencing the setting of concrete, curing, and materials in the mix. The exact time shall be determined by the Engineer and will be dependent on curing conditions and the prevalent temperature. Form shall be removed with care so to avoid any injury to concrete. Forms for the openings shall be constructed in such a manner as to be removed until the strength of the concrete is adequate that the removal of form will not result in perceptible cracking, spalling and breaking of edges of surfaces.

- Beams and Slabs: 14 days
- Columns and Wall Faces: 24 hours
- Sides of Beams, Caps, and Other Parts: 24 hours

4.11 MEASUREMENT & PAYMENT OF CONCRETE: All measurements & payments shall be for completed work within the neat lines shown on drawings unless otherwise specifically directed.

Dimensions of length, breadth and thickness shall be measured correct to nearest cm. except for the thickness of slab and partition which shall be measured to nearest 1 inch. Areas shall be worked out to nearest 0.01 Sq. m and the cubic contents of consolidated concrete shall be worked out to nearest 0.01 Cu. m. Any work done in excess over the specified dimension or sections shown in the drawing shall be ignored.

Reinforced cement concrete whether cast-in-situ shall be classified and measured separately as raft, footing, columns and mass concrete etc. all work up to plinth level, column up to plinth level, plinth beams, column above plinth level, beam, slab etc.

Reinforcement shall be measured and paid separately. Measurement of reinforcement shall be made in tonnes / Kgs of reinforcing steel acceptably placed on the basis of the lengths of bars installed in accordance with the approved Drawings or bar schedules or



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as directed by the Engineer. Lengths of each size of bars shall be converted to weights by the use of the unit weights per linear metre for each size as per ASTM A-615 or BS 4449 Standards as approved by the Engineer. No measurement and payment shall be made for the below mentioned specified works for reinforcement. The cost thereof shall be deemed to have been included in the unit rate of the respective items of the BOQ.

- Providing and installing of chairs, supports, hooks, spacers, binding wires and laps not shown on the Drawings.
- Wastage.

The measurement and payment for the items of the work of Plain & Reinforced Concrete the reinforcement hereof shall be made corresponding to the applicable CSR items as provided in Contract Agreement and shall constitute full compensation, for procurement, transportation, performance in all respects and completion of work as specified including the site clearance as approved by the Engineer.



SECTION-06: PAINTING AND VARNISHING

1. INTRODUCTION:

1.1 Painting is meant the application of paint, varnish, enamel and other protective coating in a liquid form to the surface of wood, metal, brick, or other materials to form a thin coating or film which solidifies and sticks to the surface. This coating is applied for one or more of the following reasons:

- To protect the surface from the elements and from wear;
- To improve its appearance and give it the desired color and finish;
- To facilitate cleaning;
- To improve the lighting of interiors of buildings, stains are applied to wood surface to produce the desired color;
- To emphasize the grain or to protect the wood, metal surfaces may also be galvanized, sherardized, tin-plated, tern-plated, chrome-plated, or nickel-plated for their protection or improving their appearance.

2. PREPARATION OF SURFACE:

2.1 It is essential to remove all rust, scale and dirt and have the surface absolutely cleaned before painting. Special attention is paid to the cleaning of corners and re-entrant angle. Usually anyone of the following methods is employed depending upon the nature of surface to be cleaned:

- Loose dust is removed by bristle or wood fiber.
- Rust scale and perished old paints are burnt off by the application of flat oxyacetylene flame and then rubbed off with wire brushes and scrapers.
- Oil and grease can be removed by gasoline (petrol) or benzene, excess of which shall be wiped off from the surface.
- Old paint can be loosened by applying a solution of country soda and fresh slaked lime in equal parts. No chemical of any kind will be allowed to be used for cleaning the metal.

3. PRIMING OR UNDERCOAT AND SUBSEQUENT COATS:

3.1 Priming coat can be a mixture of pure linseed oil and dry red lead in the proportions of 1 gallon of oil to 33 Lbs. of red lead. It is applied by brush or spraying machine immediately after cleaning the surface of the metal when it has completely dried up. If



this coat is spoiled by rain within 24 hours of its application, it is removed and another coat is applied.

- 3.2 The second coat is applied when the priming or first coat has thoroughly dried and set, i.e., after about four days. It may be red oxide paint or paint with aluminum or graphite base (red oxide paint may consist of 6 Lbs. of red oxide paint, 1lb of lamp black and 1 gallon of boiled linseed oil). The third coat is applied when the second coat has dried completely. It may consist of 7 Lbs. of red oxide paint, and 1 gallon of boiled linseed oil. For less important iron works or for roof coverings red oxide paint can be made up of the following constituents:

- Red oxide powder dry 10 parts by weight.
- Raw linseed oil 4 parts by weight.
- Boiled linseed oil 1 parts by weight.
- Turpentine 1 parts by weight One gallon of this paint will cover about 400 square feet of surface in two coats. Standard paints available in market should be used as specified and approved by the Engineer.

4. GUARDING RUSTING OF STEEL WORK:

- 4.1 All structural steel work is primed and preferably given a coat of red oxide paint before erection, except the surfaces to be riveted in contact and the surfaces which have to remain in contact with concrete. Iron and steel work can be protected from rust as a temporary measure by means of a coat of whitewash or by covering it with slaked lime. Iron exposed to weather can be protected temporarily by a coat of paint made with pulverized oxide of Iron, linseed oil, and a drier. A coat of cement wash is also beneficial.

5. PAINTING WALLS AND OTHER CEMENT SURFACES:

- 5.1 For painting walls, Ceiling etc., rubber paints or alkali resisting primers and plastic emulsions or cement paints are usually employed. A brief description of their application is, given below:

- The free alkali in new lime and cement plaster rapidly destroys the oil in paint and prevents it from drying. For this reason, it may not be possible to paint a plastered wall till after 12 months of its completion. In such cases the walls whitewashed in the first instance.
- All loose and flaking material is removed from old walls by scraping or wire brushing. All dust, dirt, oil, grease or efflorescence are carefully removed.
- The walls are primed with boiled linseed oil or glue size (glue mixed with water); glue size is not used if the walls have been whitewashed.



- First two coats normally consist of white lead and boiled linseed oil. The third coat can be of white lead tinted to approach the desired color and mixed with raw linseed oil and a small proportion of turpentine.
- The finishing coat should contain a large proportion of turpentine with a little varnish to serve as a binder and applied when the previous coat is still sticky. This will give a flat finish as a glossy finish coat shows up the irregularities in the plaster.

6. PAINTING WITH BRUSH:

- 6.1 The paint should be applied by the end of the hair, and not by the sides. Application by the sides is not satisfactory, and the brush wears out more rapidly. Brush should be reversed at frequent intervals so that it wears down evenly. A free easy stroke should be cultivated. Short and jerky strokes result in uneven surface. Stretching the stroke too far also results in uneven surface.

7. PAINTING WITH SPRAYING MACHINE:

- 7.1 When spraying machines are being used for painting the instructions given below should be followed:

- The gun should be held 6 to 10 inches from the object to be painted. Gun should be moved across the surface with steady and even strokes made with a free arm action. The gun should be kept perpendicular to and at an equal distance from the surface throughout the operation. Before actual work, gun should be tried on a cardboard surface, etc.
- The adjusting screw on the gun should be closed while starting and opened gradually till the spray runs right. A distorted spray indicates dirty air caps in which case it should be taken off and washed carefully in a clean solvent.
- Spray painting should not be employed for paints containing lead or for painting joinery work which should be done invariably by brush to obtain proper penetration into joints, cracks, etc.

8. PAINTING & VARNISHING (GENERAL):

For painting & varnishing the provisions of Clauses 1 to 8 as pertinent shall apply.

- 8.1 **WEATHER:** Unless otherwise specified, no painting shall be done during wet, foggy or dusty weather or in the direct rays of the hot sun. Paint or finish to any surface shall be applied when ambient temperature is 10 degrees centigrade or above and less than 43 degrees centigrade unless otherwise recommended by manufacturer of paint. No painting shall be done above 90% humidity.
- 8.2 **NUMBER OF COATS:** Unless otherwise specified all wood and iron work shall be given three coats including the priming coat. Color of priming coat shall be lighter than



finish coat. All paints shall be of make where specified and as approved by the Engineer.

8.3 **CLEANING & PREPARATION OF SURFACE:** Surface shall be thoroughly cleaned of all dust, rust, dirt, oil, grease, etc., and rendered smooth and dried before preparing it for painting or varnishing.

8.4 **PAINT:** Paint and varnish shall be of an approved make and quality, ICI, Berger, Nippon or equivalent as approved by the Engineer.

8.5 **PAINTING:**

- Paints shall be applied with proper brushes of approved quality or spraying machine as specified.
- Paint shall be constantly stirred, while it is being applied. It shall be stirred with a smooth stick and under no circumstances with a brush.
- When more than one coat has to be given, every coat must be completely dry, rubbed and all dust removed before the next is applied.
- Each coat shall differ slightly in tint from the preceding one, to distinguish quickly between each coat. The last coat shall be of the tint required for the finished work.
- Each coat shall be approved by the Engineer before the next is applied.
- All coats shall be applied evenly and properly so that the work does not show any hair or brush marks or drops of paints. The method of crossing and laying off shall be normal applied, the latter in the direction of grains in the case of wood work.
- Paints, when not in use, shall be kept away from the air. The surface of the kegs of ground and mixed paints which have been partly used shall be covered.
- Drop cloths shall be placed to adequately protect all finished work.

9. **MEASUREMENTS:**

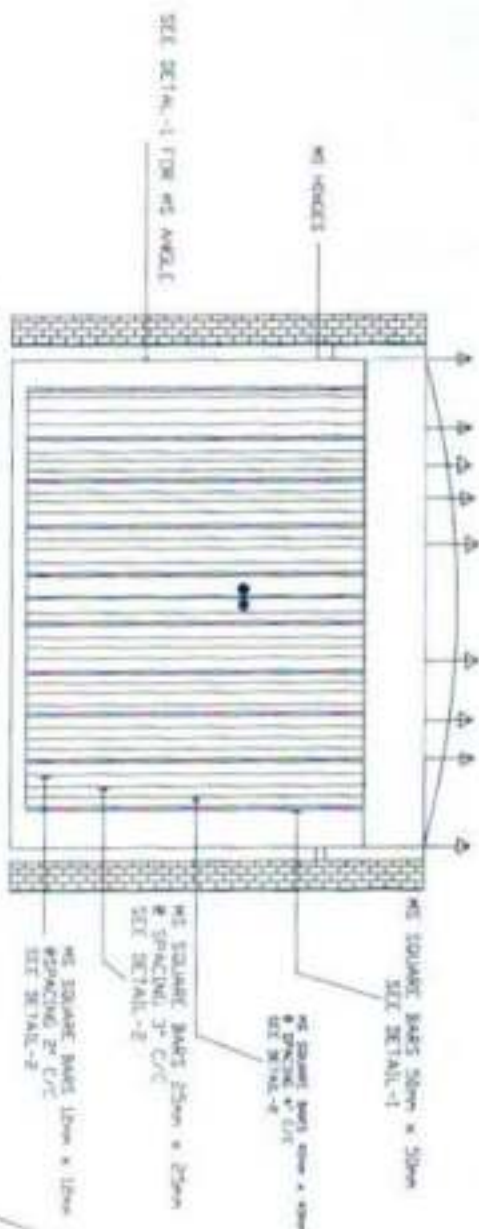
9.1 The length and breadth shall be measured correct to an inch. The area shall be calculated in Sft (correct to two places of decimal), except otherwise stated.

9.2 The measurement and payment for the items of the work of Paints and Varnishing hereof shall be made corresponding to the applicable CSR items as provided in Contract Agreement and shall constitute full compensation, for procurement, transportation, performance in all respects and completion of work as specified including the site clearance as approved by the Engineer.



MILD STEEL MS ENTRANCE GRILL GATE

DIMENSIONS
8'-3" X 6'-9"



DETAIL-1
SOLID ANGLE
DIMENSIONS
50mm X 50mm



DETAIL-2
MS SOLID SQUARE BARS
DIMENSIONS
a) 40mm x 40mm
b) 25mm x 25mm
c) 12mm x 12mm

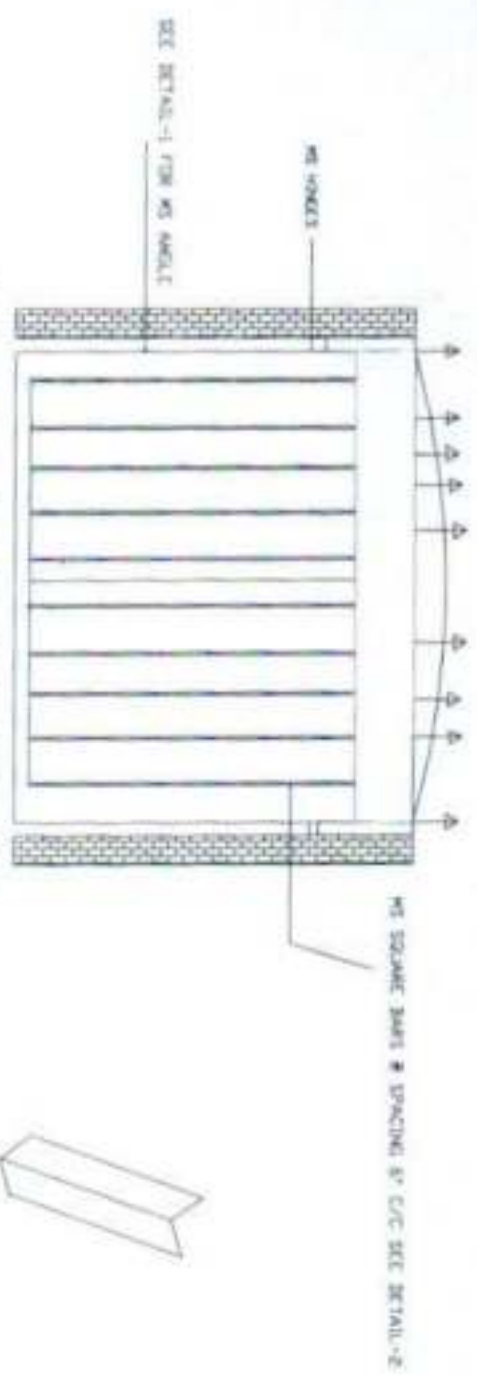
MS GATE # 1

PROJ. ENGINEER'S SIGNATURE AND SEAL WITH DATE & TIME AND SIGNATURE OF CLIENT



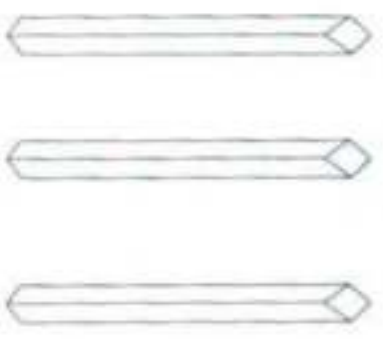
MILD STEEL MS ENTRANCE GRILL GATE

DIMENSIONS
7'-0" X 6'-0"



DETAIL-1
SOLID ANGLE
DIMENSIONS
50mm X 50mm

(a) (b) (c)



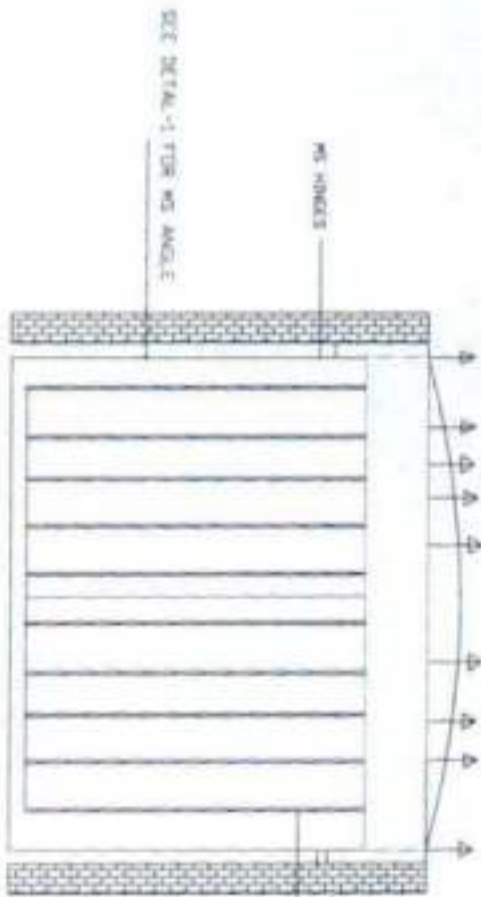
DETAIL-2
MS SOLID SQUARE BARS
DIMENSIONS
a) 40mm X 40mm
b) 25mm X 25mm
c) 12mm X 12mm

MS GATE & F	7/20/24. CONSTRUCTION / MATERIALS DESIGNING UNIVERSITY AND STANDARDS FOR THE CONSTRUCTION OF BRIDGE
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MILD STEEL MS ENTRANCE GRILL GATE

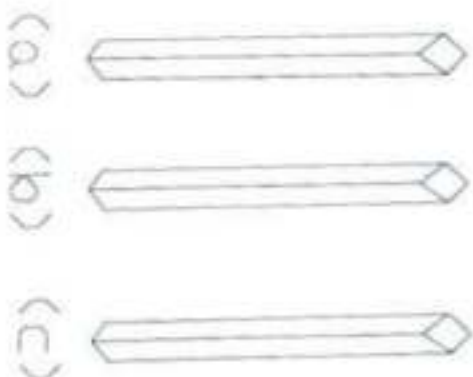
DIMENSIONS
13'-0" X 7'-0"



MS SQUARE BARS & TOPPING 6" C/P SEE DETAIL-2



DETAIL-1
SOLID ANGLE
DIMENSIONS
50mm X 50mm



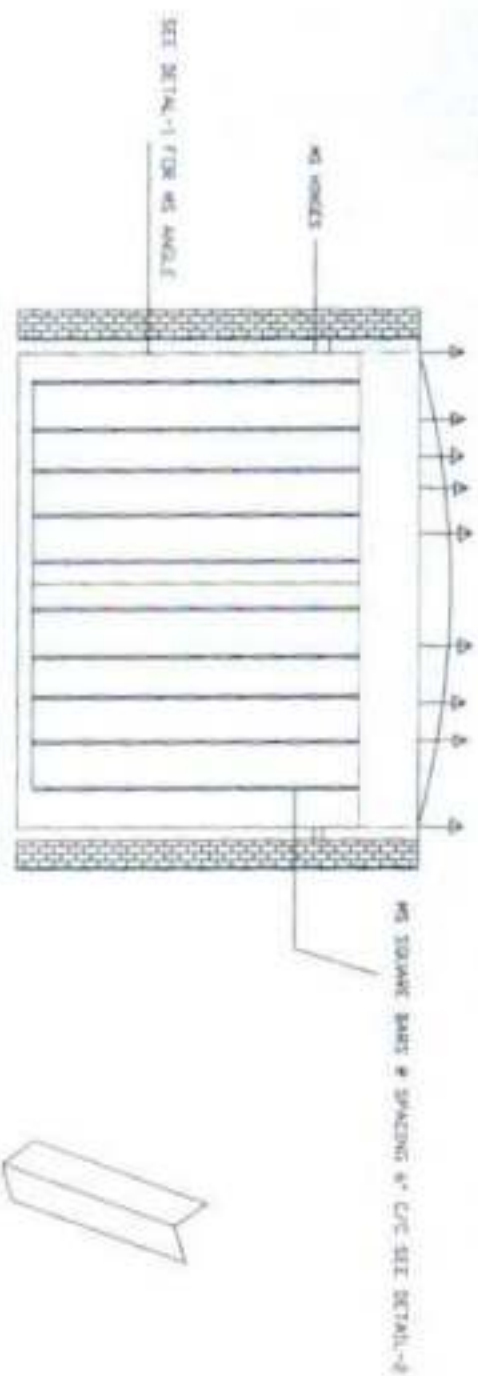
DETAIL-2
MS SOLID SQUARE BARS
DIMENSIONS
a) 40mm X 40mm
b) 25mm X 25mm
c) 12mm X 12mm

MS GATE N 3	THESE DIMENSIONS ARE FOR REFERENCE ONLY. THE ACTUAL DIMENSIONS SHALL BE AS PER THE REQUIREMENTS OF THE PROJECT.
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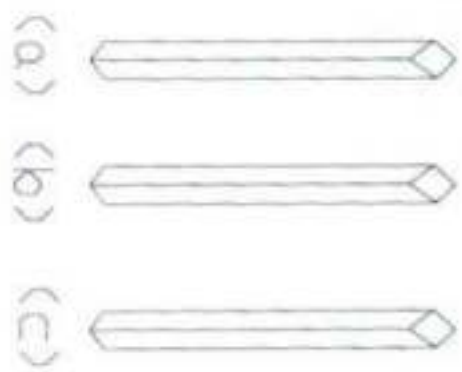


MILD STEEL MS ENTRANCE GRILL GATE

DIMENSIONS
7'-6" X 7'-0"



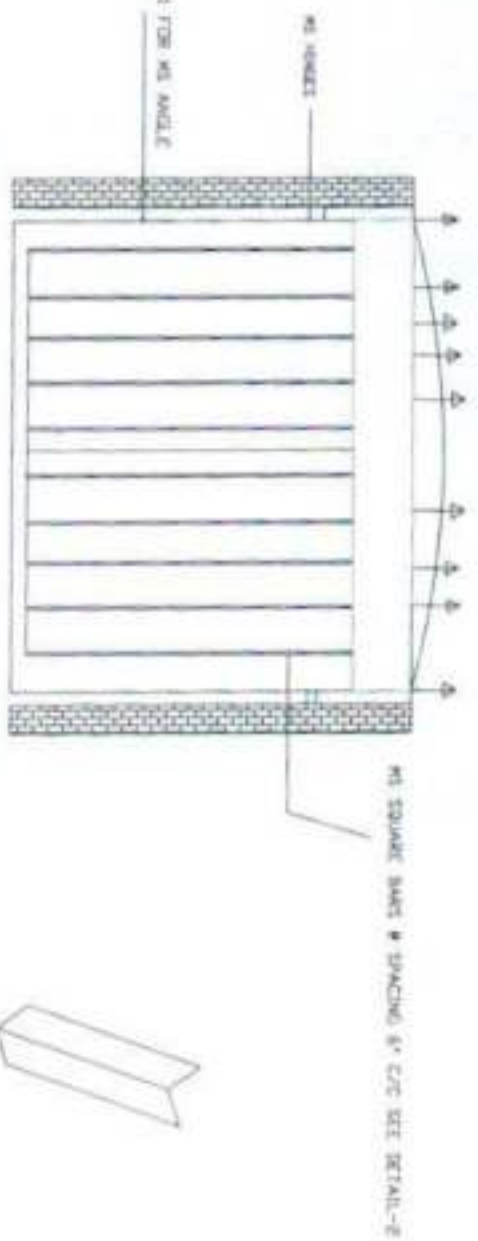
DETAIL-1
SOLID ANGLE
DIMENSIONS
50mm X 50mm



DETAIL-2
MS SOLID SQUARE BARS
DIMENSIONS
a) 40mm x 40mm
b) 25mm x 25mm
c) 12mm x 12mm

MS GATE # 4	FOR MS ENTRANCE GRILL GATE WITH 7'-6\"
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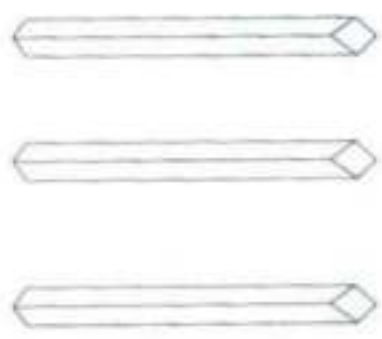


MILD STEEL MS ENTRANCE GRILL GATE

DIMENSIONS
7'-0" X 7'-0"



DETAIL-1
MS SOLID ANGLE
DIMENSIONS
50mm X 50mm



(a) (b) (c)

DETAIL-2
MS SOLID SQUARE BARS
DIMENSIONS
a) 40mm X 40mm
b) 50mm X 50mm
c) 60mm X 60mm

MS GATE @ 5	1.10mm (0.043in) DEPTH OF NOTCH REQUIRED FOR THE GRILL GATE TO BE USED AS A GATE TO THE ROAD
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