

GOVERNMENT OF SINDH



IRRIGATION DEPARTMENT

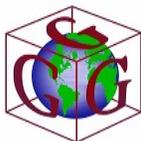
SUPPLY & INSTALLATION OF PUMPS FOR RAW & BRINE WATER PUMPING STATION

Contract Package: THAR-PUMPS

BIDDING DOCUMENT



January 2016



**G3 ENGINEERING
CONSULTANTS (PVT.) LTD.**
www.g3ec.com

In Association with
M/S BM Consulting Engineers

INVITATION FOR BIDS

Date: _____
Loan / Credit No. _____
Bid Reference No. THAR-PUMPS

Reference: - ANCILLARY WORKS

1. We hereby inform you that you are Pre-qualified for bidding for the above cited Contract as intimated vide this office letter No. _____ Dated _____ Bidding is open to all pre-qualified bidders.
2. We now invite you to submit sealed bids for the execution and completion of the above cited contract.
3. You may obtain further information and acquire the Bidding Documents from the office of The Executive Engineer Thar Coal Water Works Division Hyderabad.
4. A complete set of Bidding Documents may be purchased on submission of a written application to the above office and upon payment of a non-refundable fee of Rs. 3000/=
5. All bids must be accompanied by a Bid Security of at least two percent of Bid Price or an equivalent amount in a freely convertible currency, and must be delivered to office of The Executive Engineer Thar Coal Water Works Division Hyderabad, at or before 13:00 hours, on _____. Bids will be opened at 1500 hours on the same day, in the presence of bidder's representatives who choose to attend at the same address
6. Irrigation and Power Department reserves right to annul the bidding process and reject all bids or proposals, as per SPP Rules 2010.

Executive Engineer
Thar Coal Water Works
Division Mirpurkhas

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 Procuring agency as defined in the bidding data hereinafter called “the procuring agency” wishes to receive bids for the construction and completion of works as described in these bidding documents, and summarized in the bidding data hereinafter referred to as the “Works”.
- 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 Procuring agency has received/allocated/] applied for loan/grant/ Federal/ Provincial/Local Government funds from the source(s) indicated in the bidding data in various currencies towards the cost of the project /scheme specified in the bidding data, and it is intended that part of the proceeds of this loan/grant/funds 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 interested bidders who are eligible under provisions of Sindh Public Procurement Rules as mentioned below and the criteria given in the Notice Inviting Tender (NIT)/ Bidding Document.

Firms and individuals, national or international, may be allowed to bid for any project where international competitive bidding is feasible. Any conditions for participation shall be limited to those that are essential to ensure the bidder’s capability to fulfill the contract in question.

- (a) Bidders may be excluded if;
 - (i) as a matter of law or official regulations, commercial relations are prohibited with the bidder’s country by the federal government in case of ICB, or
 - (ii) a firm is blacklisted/ debarred by the procuring agency and the matter has been reported to the Authority, subject to Rule 30 of Sindh Public Procurement Rules 2010.

- (b) Government-owned enterprises or institutions may participate only if they can establish that they are;
 - (i) legally and financially autonomous, and
 - (ii) operate under commercial law.

Provided that where government-owned universities or research centers in the country are of a unique and exceptional nature, and their participation is critical to project implementation, they may be allowed to participate; and

Bidders shall include all those contractors who are registered or incorporated in Pakistan, irrespective of the nationality of their owners and professional staff, or

- (c) Bidders are:-
 - (i) pre-qualified with procuring agency for particular project/scheme;
 - (ii) registered with Pakistan Engineering Council in particular category and discipline,
 - (iii) registered with relevant tax authorities (income/sales tax, wherever applicable)

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 procuring agency 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 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 procuring agency 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 procuring agency, 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 (SSP RULE 21)

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.

- a. Instructions to Bidders.
- b. Bidding Data.
- c. General Conditions of Contract, Part-I (GCC).
- d. Special Conditions of Contract, Part-II (SCC)
- e. Specifications.
- f. Form of Bid and Appendices to Bid.
- g. Bill of Quantities (Appendix-D to Bid).
- h. Form of Bid Security.
- i. Form of Contract Agreement.
- j. Forms of Performance Security, Mobilization Advance Guarantee, Integrity Pact and Indenture bond for secured advance.
- k. 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 BD will be rejected.

IB.8 Clarification of Bidding Documents (SSP RULE 23(1)):

Any interested bidder requiring any clarification(s) in respect of the bidding documents may notify the procuring agency in writing at the procuring agency's address indicated in the Invitation for Bids/NIT. Procuring agency will respond to any request for clarification provided they are received at least five calendar days prior to the date of opening of bid.

Provided that any clarification in response to query by any bidder; shall be communicated to all parties who have obtained bidding documents.

IB.9 Addendum/Modification of Bidding Documents:

At any time prior to the deadline for submission of bids, the procuring agency may, for any reason, whether at his own initiative or in response to a clarification requested by a interested bidder, modify the bidding documents by issuing addendum.

9.1 Any addendum thus issued shall be part of the bidding documents pursuant to sub-clause IB 7.1 hereof and shall be communicated in writing to all bidders. Interested

bidders shall acknowledge receipt of each addendum in writing to the procuring agency.

- 9.2 To afford bidders reasonable time in which to take an addendum into account in preparing their bids, the procuring agency may extend the deadline for submission of bids in accordance with 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 procuring agency shall be in the language stipulated in the bidding data and Special Conditions of the 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 authorization on the letterhead of the bidding firm, 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 following two years, including the effect of known commitments;
 - (iii) Work commitments since prequalification;
 - (iv) Current litigation information; and
 - (v) Availability of critical equipment.

And

- (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) 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;
- (b) the bid, and in case of a successful bid, the Form of Contract Agreement shall be signed by the authorized partner so as to be legally binding on all partners;
- (c) the partner-in-charge shall always be duly authorized to deal with the procuring agency 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 (a) above as well as in the Form of Bid and in the Form of Contract Agreement (in case of a successful bid);
- (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 partners without prior written consent of the procuring agency;
- (f) submission of an alternative Letter of Intent to execute a Joint Venture Agreement shall be mandatory.

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 sub- clause IB 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 IB 1.1 hereof, based on the unit rates or prices submitted by the bidder or percentage quoted above or below on the rates of Composite Schedule of Rates (CSR), as the case may be.

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 procuring agency when executed and shall be deemed to be covered by rates and prices for other items in the Bill of Quantities. In case of Composite

Schedule of Rates, if the bidder fails to mention the percentage above or below, it shall be deemed to be at par with the rates of Composite Schedule of Rates.

- 12.3 The bid price submitted by the contractor shall include all rates and prices including the taxes. All duties, taxes and other levies payable by the contractor under the contract, or for any other cause during the currency of the execution of the work or otherwise specified in the contract as on the date seven days prior to the deadline for submission of bids.

Additional / reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed / deducted as per Sub-Clause 13.7 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 13.7 of GCC. 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. Adjustment in prices quoted by bidders shall be allowed as per Sub-Para 4(ii) of Section C of Instructions to bidders and bidding data.

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 procuring agency'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 the bid.
- 13.2 The rates of exchange to be used by the bidder for currency conversion shall be the selling rates published and authorized by the State Bank of Pakistan prevailing on the date, 07 (seven) 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 from the date of opening of bid specified in clause IB.23.
- 14.2 In exceptional circumstances, prior to expiry of the original, the procuring agency may request the bidders to extend the period of validity for a specified additional period, which shall not be for more than one third of the original period of bid

validity. The request and the responses thereto, shall be made in writing. A bidder may refuse the request without the forfeiture of the bid security. In case, a bidder agreed to the request, shall not be required or permitted to modify the bid, but will be required to extend the validity of the 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 the 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, Pay order 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 procuring agency, which should commensurate with the bid validity period. The bank guarantee for bid security shall be acceptable in the manner as provided at Annexure BS-1
- 15.3 Any bid not accompanied by an acceptable bid security shall be rejected by the procuring agency as non-responsive.
- 15.4 Bid security shall be released to the unsuccessful bidders once the contract has been signed with the successful bidder or the validity period has expired.
- 15.5 The bid security of the successful bidder shall 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 IB 22.1;
 - (b) if the bidder does not accept the correction of his bid price pursuant to sub-clause IB 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/Bids

- 16.1 Each bidder shall submit only one bid either by himself, or as a member of a joint venture, until and unless they have been requested or permitted for alternative bid, then he has to purchase separate bidding documents and alternate bid shall be treated as separate bid.
- 16.2 Alternate proposals are allowed only for procurement of works where technical complexity is involved and more than one designs or technical solutions are being offered. Two stage two envelope bidding procedure will be appropriate when alternate proposal is required.

16.3 Alternate bid(s) shall contain (a) relevant design calculations; (b) technical specifications; (c) proposed construction methodology; and (d) any other relevant details / conditions, provided that the total sum entered on the Form of Bid shall be that which represents complete compliance with the bidding documents.

IB.17 Pre-Bid Meeting

17.1 Procuring agency may, on his own motion or at the request of any bidder, 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, shall be communicated to all bidders. All bidders or their authorized representatives shall be invited to attend such a pre-bid meeting at their own expense.

17.2 The bidders are requested to submit questions, if any, in writing so as to reach the Procuring agency 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 bidders. Any modification of the bidding documents listed in sub- clause IB 7.1 hereof, which may become necessary as a result of the pre-bid meeting shall be made by the procuring agency 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 Alteration is not to be made neither 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 without alterations and shall provide an original copy along with photocopies as per the requirement of the procuring agency specified in the bidding data. The original as well as copies of the document shall be clearly marked as "ORIGINAL" and „COPY", as the case may be. If there is any discrepancy between original and copy (ies) then 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(s) duly authorized to sign on behalf of the bidder pursuant to sub- clause IB 11.1(a) hereof. All pages of the bid shall be initialed and stamped by the person(s) signing the bid.

18.6 The bid shall contain no alterations, omissions or additions, except to comply with instructions issued by the procuring agency, or as are necessary to correct errors made by the bidder. Such corrections shall be initialed by the person(s) signing the bid.

18.7 Bidders shall indicate in the space provided in the Form of Bid their full and proper postal 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 2 COPIES of the bid shall be separately sealed and put in separate envelopes and marked as such.
- (b) The envelopes containing the ORIGINAL and COPIES shall be put in one sealed envelope and addressed as given in sub – clause IB 19.2 hereof.

19.2 The inner and outer envelopes shall:

- (a) be addressed to the procuring agency 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 IB 19.2 hereof, the inner envelope shall indicate the name and postal 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 procuring agency 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 procuring agency at the address specified not 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 shall be entertained for refund of such
- (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 Procuring Agency may, at its discretion, extend the deadline for submission of bids by issuing an amendment in accordance with IB 09. In such case, all rights and obligations of the procuring agency and the bidders shall remain the same as mentioned in the original deadline.

IB.21 Late Bids

- (a) any bid received by the procuring agency after the deadline for submission of bids prescribed in to clause IB 20 shall be returned unopened to such bidder.
- (b) delays in the mail, 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 submit the bid in time.

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 procuring agency 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 to sub - clauses IB 22.1 and IB 27.2.

22.4 Withdrawal of a bid during the interval between the deadlines 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 Procuring agency will open the bids, including withdrawals, substitution and modifications made pursuant to Clause IB.22, in the presence of bidders' representatives who choose to attend, at the time, date and location stipulated in the bidding data. The bidders or their representatives who are in attendance shall sign an attendance sheet.

23.2 Envelopes marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL" shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to clause IB.22 shall not be opened.

23.3 Procuring agency shall read aloud the name of the bidder, total bid price and price of

any Alternate Proposal(s), if any, discounts, bid modifications, substitution and withdrawals, the presence or absence of bid security, and such other details as the procuring agency may consider appropriate, and total amount of each bid, and of any alternative bids if they have been requested or permitted, shall be read aloud and recorded when opened.

- 23.4 Procuring Agency shall prepare minutes of the bid opening, including the information disclosed to those present in accordance with the sub-clause IB.23.3.

IB.24 Process to be Confidential. (SPP Rule 53)

- 24.1 Information relating to the examination, clarification, evaluation and comparison of bid and recommendations for the award of a contract shall not be disclosed to bidders or any other person not officially concerned with such process before the announcement of bid evaluation report in accordance with the requirements of Rule 45, which states that Procuring agencies shall announce the results of bid evaluation in the form of a report giving reasons for acceptance or rejection of bids. The report shall be hoisted on website of authority and that of procuring agency if it website exists and intimated to all bidders at least seven (7) days prior to the award of contract. The announcement to all bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the bids evaluated. Any effort by a bidder to influence the procuring agency's processing of bids or award decisions may result in the rejection of such bidder's bid. Whereas, any bidder feeling aggrieved, may lodge a written complaint as per Rule 31; however mere fact of lodging a complaint shall not warrant suspension of the procurement process.

IB.25 Clarification of Bid (SPP Rule 43)

- 25.1 To assist in the examination, evaluation and comparison of bids, the procuring agency may, at its discretion, ask any bidder for clarification of the bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the procuring agency in the evaluation of the bids in accordance with clause IB 28.

IB.26 Examination of Bids and Determination of Responsiveness

- 26.1 Prior to the detailed evaluation of bids, the procuring agency will determine whether the bidder fulfills all codal requirements of eligibility criteria given in the tender notice such as registration with tax authorities, registration with PEC (where applicable), turnover statement, experience statement, and any other condition mentioned in the NIT and bidding document. If the bidder does not fulfill any of these conditions, it shall not be evaluated further.
- 26.2 Once found to be fulfilling the eligibility criteria, as mentioned in sub-clause 26.1, the bids of eligible bidders will be evaluated for technical responsiveness as per specification and criteria given in the bidding documents. Technical and financial evaluations may be carried out in accordance with single stage-single one envelope, single stage-two envelopes, two stage or two stage-two envelopes bidding procedures,

depending on the selection procedure adopted by the procuring agency.

26.3 A bid will be considered technically responsive if it (i) has been properly signed; (ii) is accompanied by the required bid security; and (iii) 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 procuring agency'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.

26.4 If a bid has major deviations to the commercial requirements and technical specifications will be considered technically non responsive. As a general rule, major deviations are those that if accepted, would not fulfill the purposes for which the bid is requested, or would prevent a fair comparison or affect the ranking of the bids that are compliant with the bidding documents.

(A). Major (material) Deviations include:-

- (i) has been not properly signed;
- (ii) is not accompanied by the bid security of required amount and manner;
- (iii) stipulating price adjustment when fixed price bids were called for;
- (iv) failing to respond to specifications;
- (v) failing to comply with Mile-stones/Critical dates provided in Bidding Documents;
- (vi) sub-contracting contrary to the Conditions of Contract specified in Bidding Documents;
- (vii) refusing to bear important responsibilities and liabilities allocated in the Bidding Documents, such as performance guarantees and insurance coverage;
- (viii) taking exception to critical provisions such as applicable law, taxes and duties and dispute resolution procedures;
- (ix) a material deviation or reservation is one :
 - (a) which affect in any substantial way the scope, quality or performance of the works;
 - (b) adoption/rectification whereof would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

(B) Minor Deviations

Bids that offer deviations acceptable to the Procuring Agency and

Which can be assigned a monetary value may be considered substantially responsive at least as to the issue of fairness. This value would however be added as an adjustment for evaluation purposes only during the detailed evaluation process.

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

IB.27 Correction of Errors before Financial Evaluation

- 27.1 Bids determined to be substantially responsive will be checked by the procuring agency for any arithmetic errors. Errors will be corrected by the procuring agency 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 procuring agency 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 procuring agency in accordance with the above procedure for the correction of errors and with the concurrence of the bidders. The amount thus corrected shall be considered as binding upon the bidder. If the bidder does not accept the corrected bid price, his bid will be rejected, and the bid security shall be forfeited in accordance with sub- clause IB 15.6(b) hereof.

IB.28 Financial Evaluation and Comparison of Bids

- 28.1 The procuring agency 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 procuring agency 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 (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 procuring agency's estimate of the cost of work to be performed under the contract, the procuring agency may require the bidder to produce detailed price analyses for any or all items of the Bill of Quantities to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the procuring agency 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 procuring agency against financial loss in the event of default of the successful bidder under the contract.

28.5 Bidders may be excluded if involved in “**Corrupt and Fraudulent Practices**” means either one or any combination of the practices given below SPP Rule2(q);

- (i) “**Coercive Practice**” means any impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence the actions of a party to achieve a wrongful gain or to cause a wrongful loss to another party;
- (ii) “**Collusive Practice**” means any arrangement between two or more parties to the procurement process or contract execution, designed to achieve with or without the knowledge of the procuring agency to establish prices at artificial, noncompetitive levels for any wrongful gain;
- (iii) “**Corrupt Practice**” means the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence the acts of another party for wrongful gain;
- (iv) “**Fraudulent Practice**” means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (v) “**Obstructive Practice**” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a procurement process, or affect the execution of a contract or deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements before investigators in order to materially impede an investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or acts intended to materially impede the exercise of inspection and audit rights provided for under the Rules.

28.6 Evaluation Report (SPP Rule 45)

After the completion of evaluation process, as described in clauses IB 27 and IB 28, the procuring agency shall announce the results of bid evaluation in the form of report (available on the website of the authority) giving reasons for acceptance and rejection of bid. The report shall be hoisted on website of the authority and that of procuring agencies if its website exists and intimated to all bidders at least seven (7) days prior to the award of contract.

F. AWARD OF CONTRACT

IB.29 Award (SPP Rule 49)

29.1 Subject to clauses IB 30 and IB 34 and provision of the rule: The procuring agency shall 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, but not necessarily the lowest submitted price, within the original or extended period of bid validity. Provided that such bidder has been determined to be eligible in accordance with the provisions of clause IB 03 and qualify pursuant to sub-clause IB 29.2.

- 29.2** Procuring agency, at any stage of the bid evaluation, having credible reasons for or having *prima facie* evidence of any deficiency(ies) in contractor's capacities, may require the contractor to provide information concerning their professional, technical, financial, legal or managerial competence whether already pre-qualified or not for the said project.

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

IB.30 Procuring Agency's Right to reject all Bids or Annul/Cancellation the Bidding Process (SPP Rule 25)

Notwithstanding clause IB 29 and provision of the rule: (1) A procuring agency reserves may cancel the bidding process at any time prior to the acceptance of a bid or proposal; (2) The procuring agency shall incur no liability towards bidders solely by virtue of its invoking sub –rule (1); (3) Intimation of the cancellation of bidding process shall be given promptly to all bidders and bid security shall be returned along with such intimation; (4) The procuring agency shall, upon request by any of the bidders, communicate to such bidder, grounds for cancellation of the bidding process, but is not required to justify such grounds.

IB.31. Notification/Publication of the Award of Contract (SPP Rule 25).

- 31.1 Prior to expiry of the period of bid validity, including extension, prescribed by the procuring agency, the procuring agency shall notify the successful bidder in writing ("Letter of Acceptance") that his bid has been accepted. This letter shall mention the sum which the procuring agency will pay to 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, procuring agency may hold meetings to 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 procuring agency and the bidder till signing of the formal Contract Agreement.
- 31.4 Upon furnishing by the successful bidder of a Performance Security and signing of the contract, the procuring agency will promptly notify the name of the successful bidder to all bidders and return their bid securities accordingly.
- 31.5 Within seven days of the award of contract, procuring agency shall publish on the website of the Authority and on its own website, if such a website exists, the results of the bidding process, identify the bid through procurement identifying numbers, and the following information:

- (1) Evaluation Report;
- (2) Form of Contract and letter of Award;
- (3) Bill of Quantities or Schedule of Requirement.

31.6 Debriefing (SPP Rule 51).

- (a) A bidder may ask the procuring agency for reasons for non acceptance of his bid and may request for a debriefing meeting and procuring agency shall give him the reasons for such non acceptance, either in writing or by holding a debriefing meeting with such a bidder.
- (b) The requesting bidder shall bear all the costs of attending such a debriefing.

IB.32 Performance Security (SPP Rule 39)

- 32.1 The successful bidder shall furnish to the procuring agency a Performance Security in the form of pay order or demand draft or bank guarantee, 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.
- 32.3 Validity of performance security shall extend at least ninety days beyond the date of completion of contract, or as mentioned in the bidding data to cover defects liability period or maintenance period subject to final acceptance by the procuring agency.

IB.33 Signing of Contract Agreement (SPP Rule 39)

- 33.1 Within 14 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the procuring agency 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 procuring agency and the successful bidder shall be executed within 14 days of the receipt of the Contract Agreement by the successful bidder from the procuring agency.
- 33.3 A procurement contract shall come into force when the procuring agency requires signs contract, the date on which the signatures of both the procuring agency and the successful bidder are affixed to the written contract. Such affixing of signatures shall take place within the time prescribed in the bidding documents.

Provided that the procuring agency may reduce the maximum time limit for signing of contract, as and when required, and shall be mentioned in the bidding documents.

33.4 Stamp Duty.

The formal Agreement between the Procuring Agency and the successful bidder shall be duly stamped at rate of 0.3% of bid price (updated from time to time) stated in Letter of Acceptance

IB.34 General Performance of the Bidders

Procuring agency may in case of consistent poor performance of the contractor and his failure to remedy the underperforming contract may take such action as may be deemed appropriate under the circumstances of the case including the rescinding the contract and/or black listing of such contractor and debarring him from participation in future bidding process.

IB.35 Integrity Pact (SPP Rule 89)

The bidder shall sign and stamp the Integrity Pact provided at Appendix-L to the bidding documents for all Provincial/Local 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.

IB.37 Arbitration (SPP Rule 34)

Any dispute that is not amicably resolved shall be finally settled, unless otherwise specified in the Contract, under the Arbitration Act 1940 updated from time to time and would be held anywhere in the Province of Sindh at the discretion of procuring agency.

Bidding Data

The following specific data for the works to be tendered 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.

use Reference

- 1.1 The employer is Project Director Thar Coal Water Works Project Mirpurkhas
Camp office Left Bank Barrage Colony Hyderabad.
Phone No. 022-9210131
Fax No. 022-9210133
- 1.1 Name and address of the procuring agency: *Irrigation Department Government of Sindh.*
- 1.2 Name of the Project and Summary of the works: Supply & installation of Pumps for Raw & Brine Water Pumping Stations.

Summary of the Works:

Supply & installation of Pumps for Raw & Brine Water Pumping Stations, Motors, cables, cable tray, change over etc. Diesel Generators, Gantry chains, Fuel Storage Tanks, Commissioning and operation and maintenance for 30 days.

- 2.1 Name of the Borrower/Source of Financing/Funding Agency/Funding Source;
Government of Sindh
- 2.1 Amount and Type of Financing/Scheme Cost and Allocated Funds.
Rs. _____ Million
- 8.1 Time limit for clarification: *28 days prior to the date fixed for submission of bids*
- 10.1 Bid language: *English*
- 11.1 (b) Furnish and Technical Proposal: *The bidder has to submit a technical proposal in sufficient detail to demonstrate the adequacy of the bid in meeting requirements for timely completion of the works.*
- 11.2 Add the following para at the end
(f) Any bid submitted by the joint venture with a name or partners different than pre-qualified, for which approval of the Employer is not obtained prior to submission of Bid, shall be considered as non responsive.
- 13.1 Bidders to quote entirely rate *Pak. rupees*
- 14.1 Period of Bid Validity: *91*
- 15.1 Amount of Bid Security: *(2%)*

Bidding Data

- 17.1 Venue, time, and date of the pre-Bid meeting:
Office of Project Director Thar Coal Water Works Project Mirpurkhas
Camp office Left Bank Barrage Colony Hyderabad.
Time _____ and Date _____
- 18.4 Number of copies of the Bid to be completed and returned: *One Original and Two copies*
- 19.2 (a) Address for the purpose of Bid submission:
Office of Executive EIngineer Thar Coal Water Works Division Mirpurkhas.
Phone No. _____
Fax No. _____
- (b) Name and Identification Number of the Contract: *Installation Ancillary Works*
- 20.1 (a) Deadline for submission of bids: _____ 1:00 Pm
- (b) Venue, time, and date of bid opening:
Office of Executive EIngineer Thar Coal Water Division Hyderabad.
Phone No. _____
Fax No. _____
- 32.1 Standard form and amount of Performance Security acceptable to the procuring agency: *Bank Guarantee from any Scheduled Bank of Pakistan for an amount shall be 10% of the Contract Price stated in the Letter of Acceptance.*
- 32.3 Stamp duty : **0.3%** *will be paid by successful bidder as stamp duty*

FORM OF BID

Bid Reference No. **THAR-PUMPS**

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 Works, we, the undersigned, offer to execute and complete such Works and remedy any defects therein in conformity with the Conditions of Contract. Specifications, Drawings, Bill of Quantities and Addenda for the sum of Rs. _____ (Rupees _____) or such other sum as may be ascertained in accordance with the said conditions.
2. We understand that all the Appendices A to L attached hereto form part of this Bid.
3. As security for due performance of the undertakings and obligations of this Bid, we submit herewith a Bid Security in the amount of Rupees _____ (Rs. _____) drawn in your favour or made payable to you and valid for a period of _____ days beginning from the date Bids are opened.
4. We undertake, if our Bid is accepted, to commence the Works and to complete the whole of the Works comprised in the Contract within the time stated in Appendix-A to Bid.
5. We agree to abide by this Bid for the period of 90 days following the date fixed for receiving 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 _____ day of _____ 20 _____

Signature: _____

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

(Name of Bidder in Block Capitals)
(Seal)

Address: _____

Witness:

Signature: _____

Name: _____

Address. _____

Occupation _____

Appendix-A to Bid

SPECIAL STIPULATIONS

**Clause
Conditions of Contract**

1	Amount of Performance Security	4.2	10% of Contract Price stated in the Letter of Acceptance in the form of Bank Guarantee from a Scheduled Bank of Pakistan
2	Time for Furnishing Programme	8.3	Within 42 days from the date of receipt of Letter of Acceptance.
3	Minimum amount of Third Party Insurance	18.3	Rs.2.0 Million- per occurrence with number of occurrences unlimited, to be kept renewed throughout the Contract Period from National Insurance Corporation of Pakistan or any other insurance company operating in Pakistan and acceptable to the Employer.
4	Time for Commencement	8.1	Within 14 days from the date of receipt of Engineer's Notice to Commence which shall be issued within fourteen (14) days after issue of letter of Acceptance.
5	Time for Completion	8.2 & 10.2	365 days from the date of receipt of Engineer's Notice to Commence
6	Amount of Liquidity Damages	8.7	0.05% of Contract Price for each day delay in completion of the Works subject to a maximum of 10% of Contract Price stated in the Letter of Acceptance.
7	Defects Liability Period	11.1	364 days from the effective date of Taking Over Certificate.
8	Percentage of Retention Money	14.2	10% of the amount of Interim Certificate.
9	Limit of Retention Money	14.2	5% of Contract Price stated in the Letter of Acceptance
10	Minimum amount of Interim Payment Certificates	14.2	Rs. 2.0 Million
11	Time of Payment from delivery of Engineer's Interim/Running Payment Certificate to the procuring agency.	14.7	28 days
12	Mobilization Advance.	14.2	10% of Contract Price stated in the Letter of Acceptance.

Appendix-B to Bid

FOREIGN CURRENCY REQUIREMENTS

1. The Bidder may indicate here in below his requirements of foreign currency (if any), with reference to various inputs to the Works.
2. Foreign Currency Requirement as percentage of the Bid Price excluding Provisional Sums _____%.
3. Table of Exchange Rates

Unit of Currency	Equivalent in Pak. Rupees
Australian Dollar	-----
French Frank	-----
German Mark	-----
Japanese Yen	-----
U.K. Pound	-----
U.S. Dollars	-----
-----	-----
-----	-----

NOT APPLICABLE

Appendix-C To Bid**PRICE ADJUSTMENT UNDER CLAUSE 70/13.8****OF CONDITIONS OF CONTRACT**

The source of indices and the weight ages or coefficients for use in the adjustment formula under Clause 13.8 shall be as follows:

Cost Element	Description	Weightages	Applicable index
1	2	3	4
(i)	Fixed Portion	0.35	
(ii)	Labour a) Skilled b) Unskilled	0.1 0.15	Government of Pakistan (GP) Federal Bureau of Statistics (FBS) Monthly Statistical Bulletin for Mirpurkhas 28 days prior to bid closing date.
(iii)	Cement – in bags	0.2	“ “ “
(iv)	Reinforcing Steel ½ dia M/s bars	0.05	“ “ “
(v)	High Speed Diesel (HSD)	0.15	“ “ “
(vi)	Bricks	-	“ “ “
(vii)	Bitumen	-	“ “ “
	Total	1.000	

Notes:**Notes:**

- 1) Indices for “(ii)” to “(vii)” are taken from the Government of Pakistan Federal Bureau of Statistics, Monthly Statistical Bulletin. The base cost indices or prices shall be those applying 15 days prior to the latest day for submission of bids. Current indices or prices shall be those applying 28 days prior to the last day of the billing period.
- 2) Any fluctuation in the indices or prices of materials other than those given above shall not be subject to adjustment of the Contract Price.

(Employers using this price adjustment provisions may add or delete any elements as deemed appropriate to the project).

Appendix-D to Bid

BILL OF QUANTITIES

A. Preamble

1. The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specifications and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work executed and measured by the Contractor and verified by the Engineer and valued at the rates and prices entered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix as per the Contract (in case of item not mentioned in Bill of Quantities).
3. The rates and prices entered in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the contract include all costs of contractor's plant, labour, supervision, materials, execution, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the contract. Furthermore all duties, taxes and other levies payable by the contractor under the contract, or for any other cause, as on the date 14 days prior to deadline for submission of Bids in case of ICB/NCB respectively, shall be included in the rates and prices and the total bid price submitted by the bidder.
4. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the contractor will have failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities and shall not be paid separately.
5. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the works.
6. General directions and description of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the bidding documents shall be made before entering prices against each item in the priced Bill of Quantities.
7. Provisional sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with sub-clause 13.5 of Part I, General Conditions of Contract.

BILL OF QUANTITIES

C. Day work Schedule

General

1. Reference is made to Sub-Clause 13.6 of the General Conditions of Contract. Work shall not be executed on a day work basis except by written order of the Engineer. Bidders shall enter basic rates for day work items in the Schedules, which rates shall apply to any quantity of day work ordered by the Engineer. Nominal quantities have been indicated against each item of day work, and the extended total for day work shall be carried forward to the bid price.

Day work Labour

2. In calculating payments due to the contractor for the execution of day work, the actual time of classes of labour directly doing the day work ordered by the Engineer and for which they are competent to perform will be measured excluding meal breaks and rest periods. The time of gangers (charge hands) actually doing work with the gang will also be measured but not the time of foreman or other supervisory personnel.
3. The contractor shall be entitled to payment in respect of the total time that labour is employed on day work, calculated at the basic rates entered by him in the Schedule of day work Rates for labour together with an additional percentage, payment on basic rates representing the contractor's profit, overheads, etc., as described below:
 - a) the basic rates for labour shall cover all direct costs to the contractor, including (but not limited to) the amount of wages paid to such labour, transportation time, overtime, subsistence allowances and any sums paid to or on behalf of such labour for social benefits in accordance with Pakistan law. The basic rates will be payable in local currency only; and

the additional percentage payment to be quoted by the bidder and applied to costs incurred under (a) above shall be deemed to cover the contractor's profit, overheads, superintendence, liabilities and insurances and allowances to labour timekeeping and clerical and office work; the use of consumable stores, water, lighting and power; the use and repair of staging's, scaffolding, workshops and stores, portable power tools, manual plant and tools; supervision by the contractor's staff, foremen and other supervisory personnel; and charges incidental to the foregoing

BILL OF QUANTITIES

B. Work Items

1. The Bill of Quantities contains the following Bills and Schedule:
Bill Nr. 1 Supply and install Pumps & Motors for RAW water
Bill Nr. 2 Supply and install Pumps & Motors for Brine water

SUMMARY OF BILL OF QUANTITIES

2. Bidders shall price the Bill of Quantities in Pakistani Rupees only.

Bill of Quantities
Supply & Installation of Pumps for Raw and Brine Water Pumping Station
CONTRACT PACKAGE-THAR-PUMPS

Summary

Bill Nr.	Description	Amount (Rs)
1	Supply & Installation of Pumps & Motors for RAW water	
2	Supply & Installation of Pumps & Motors for Brine water	
	Total	

Note: All Provisional Sums are to be expended in whole or, in part at the direction and discretion of the Engineer in accordance with Sub-Clauses 52.4 and 58.2 of the General Conditions of Contract Part- I.

Bill of Quantities

Bill Nr. 2, Installation of Pumps & Motors for Raw Water

Item Nr.	Description	Unit	Quantity	Rate (Rs)		Amount (Rs.)
				Figure	Words	
1-1	Providing, installing, testing & commissioning of Vertical Shaft Pumps including drive coupling, foundation block, vertical shaft, pump base, nuts bolts, painting/coatings and other accessories, complete in all respects. Suitable for discharge of 25 cusec against head of 27 ft can with stand to pump water upto 10,000 TDS (SS-316 L material)	Nr.	5			
1-2	Siemens Standard V1 Design Motor (Suitable for ambient 40 deg, 120 hp, 400 V 3 phase, 6 Pole, 50 Hz)	Nr.	5			
1-3	Motor Control Unit Consisting of Metallic Box, circuit Breaker, magnetic contactor, on/off switch control fuse, under/over voltage relay, electronic over current relay, indication lamps, ampere meter, volt meter, hour run meter, Auto Star Delta Starter, high temperature protection, Phase reversal protection and indication lamps	Nr.	5			
1-4	Foundation (MS angle iron)	Nr.	5			
1-5	Cable (250mm x Single core x1000') for 5 pumps	Nr.	5			
1-6	Main Pannels	Nr.	2			
1-7	Cable tray, Junction box, Change over,	Nr.	1			
1-8	Cable (700mm 4 core x 200') for Transformer.	Nr.	1			
1-9	Cable (700mm 4 core x 200') for Generator.	Nr.	1			

Bill of Quantities

Bill Nr. 2, Installation of Pumps & Motors for Raw Water

Item Nr.	Description	Unit	Quantity	Rate (Rs)		Amount (Rs.)
				Figure	Words	
1-10	Deisel genrtor set 800 Kva	Nr.	1			
1-11	Supplying & Installation of M.S Black steel Pipe 30" dia, API SL Grade X-42 (6.4mm) thick sheet straight welded jointed with MS Flange including Nut Bolts, rubber packing and externally coated with bitumen fiber glass 5mm thick (AWWA Specification) internally cement lining 8mm thick including jointing including cost of installation and transportation from Lahore to Ex-Site Work and testing with Water to specified pressure.	Rft	50			
1-12	Supply & Installtion of Gantry Chain upto 25ft length including all accessories etc complete.	Nr.	1			
1-13	Commissioning, Operation and maintenance for 30 days including POL, Fuel Storage Tanks for 15 days storage capacity.	Job	1			
TOTAL FOR BILL Nr. 1						

Bill of Quantities

Bill Nr. 3, Installation of Pumps & Motors for Brine Water

Item Nr.	Description	Unit	Quantity	Rate (Rs)		Amount (Rs.)
				Figure	Words	
3-1	Providing, installing, testing & commissioning Vertical Shaft Pumps in Pumping including drive coupling, foundation block vertical shaft, pump base, anchor bolts, painting/coatings and other accessories, complete in all respects. Suitable for discharge of 15 cusec against head of 21 ft can with stand to pump water upto 20,000 TDS (Duplex Steel Material)	Nr.	3			
3-2	Siemens Standard V1 Design Motor (Suitable for ambient 40 deg, 100 hp, 400 V 3 phase, 4 Pole, 50 Hz)	Nr.	3			
3-3	Motor Control Unit Consisting of Metallic Box, circuit Breaker, magnetic contactor, on/off switch control fuse, under/over voltage relay, electronic over current relay, indication lamps, ampere meter, volt meter, hour run meter, Auto Star Delta Starter, high temperature protection, Phase reversal protection and indication lamps	Nr.	3			
3-4	Foundation (MS angle iron)	Nr.	3			
3-5	Cable (200mm x Single core x 600') for 3 pumps	Nr.	3			
3-6	Main Pannels	Nr.	1			
3-7	Cable tray, Junction box, Change over	Nr.	1			
3-8	Cable (600mm 4 core x 200') for Transformer.	Nr.	1			
3-9	Cable (600mm 4 core x 200') for Generator.	Nr.	1			

Bill of Quantities

Bill Nr. 3, Installation of Pumps & Motors for Brine Water

Item Nr.	Description	Unit	Quantity	Rate (Rs)		Amount (Rs.)
				Figure	Words	
3-10	Deisel genrtor set 450 Kva	Nr.	1			
3-11	Supply & Installtion of M.S Black steel Pipe 24" dia, API SL Grade X-42 (6.4mm) thick sheet straight welded jointed with MS Flange including Nut Bolts, rubber packing and externally coated with bitumen fiber glass 5mm thick (AWWA Specification) internally cement lining 8mm thick including jointing including cost of istallation and transportation from Lahore to Ex-Site Work and testing with Water to specified pressure.	Rft	50			
3-12	Supply & Installtion of Gantry Chain upto 25ft length including all accessories etc complete.	Nr.	1			
3-13	Commissioning, Operation and maintenance for 30 days including POL, Fuel Storage Tanks for 15 days storage capacity.	Job	1			
	TOTAL FOR BILL Nr. 3					

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 his Bid Construction Schedule in the bar chart *Preferably in Primavera* (CPM, PERT or any other to be specified herein) showing the sequence of work items and the period of time during which he proposes to complete each work item in such a manner that his proposed Program 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):

Description	Time for Completion
a) Whole works	182 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 to the site, 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

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 Program of the Works and the Rates in the Bill of Quantities, expressed in thousands of Pakistani Rupees:

Quarter/ Year/ Period	Amount
1	2
Ist Quarter	
2nd Quarter	
3rd Quarter	
4th Quarter	
Bid Price	

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 IN
CONTRACTS WORTH RS. 10.00 MILLION OR MORE**

Contract No. _____ Dated _____
Contract Value: _____
Contract Title: _____

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

Without limiting the generality of the foregoing, [name of 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 the Bidder/Contractor] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

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

Notwithstanding any rights and remedies exercised by GoP in this regard, [name of 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 Bidder/Contractor:

Signature:

[Seal]

BID SECURITY**(Bank Guarantee)**

Security Executed on _____
(Date)

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

Name of Principal (Bidder) with Address _____

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

Bid Reference No. **THAR-PUMPS.**

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's) 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's; and

WHEREAS, the 'Employer's 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's , 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's 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's 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 therefore, on the prescribed form presented to him for signature enter into a formal Contract with the said 'Employer's 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's for the faithful performance and proper fulfillment of the said Contract or in the event of non-withdrawal of the said Bid within the time specified for its validity then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

BS-2

PROVIDED THAT the Surety shall forthwith pay the 'Employer's the said sum upon first written demand of the 'Employer's (without cavil or argument) and without requiring the 'Employer's to prove or to show grounds or reasons for such demand, notice of which shall be sent by the 'Employer's by registered post duly addressed to the Surety at its address given above.

PROVIDED ALSO THAT the 'Employer's 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's 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.

SURETY (Bank)

WITNESS:

Signature _____

1. _____

Name _____

Corporate Secretary (Seal)

Title _____

Corporate Guarantor (Seal)

2. _____

Name, Title & Address

FORM OF PERFORMANCE SECURITY

(Bank Guarantee)

Guarantee No. _____

Executed on _____

Expiry date _____

[Letter by the Guarantor to the Employer's Representative]

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's) 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's Representative, 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's, 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's 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's 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 _____

Corporate Secretary (Seal)

Name _____

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's") of the one part and _____ (hereafter called the "Contractor") of the other part.

WHEREAS the 'Employer's 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;
 - (d) The Special Stipulations (Appendix-A to Bid);
 - (e) The Particular Conditions of Contract – Part II;
 - (f) The General Conditions– Part I;
 - (g) The priced Bill of Quantities (Appendix-D to Bid);
 - (h) The completed Appendices to Bid (B, C, E to L);
 - (i) The Drawings;
 - (j) The Specifications.
 - (k) _____ (any other)
3. In consideration of the payments to be made by the 'Employer's 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's 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

Signature of Employer's

(Seal)

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

Witness:

(Name, Title and Address)

(Name, title and Address)

MOBILIZATION ADVANCE BOND

Bond No. _____ Date _____

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

AND WHEREAS, the Employer's 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's has asked the Contractor to furnish Bond to secure the mobilization advance for the performance of his obligations under the said Contract.

AND WHEREAS, _____ (Recognized Insurance Company in Pakistan acceptable to the Employer's) (hereinafter called the "Guarantor") at the request of the Contractor and in consideration of the Employer's Representative agreeing to make the above advance to the Contractor, has agreed to furnish the said Bond.

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 fulfillment of any of his obligations for which the advance payment is made, the Guarantor shall be liable to the Employer's for payment not exceeding the aforementioned amount.

Notice in writing of any default, of which the Employer's shall be the sole and final judge, on the part of the Contractor, shall be given by the Employer's to the Guarantor, and on such first written demand, payment shall be made by the Guarantor of all sums then due under this Bond without any reference to the Contractor and without any objection.

This Bond 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 Bond shall not in any case exceed the sum of Rupees _____ (Rs _____).

This Bond 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

MG-2

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)

[Notes on the Conditions of Contract]

The Conditions of Contract comprise two parts:

- (a) Part I - General Conditions of Contract**
- (b) Part II - Particular Conditions of Contract**

Over the years, a number of “model” General Conditions of Contract have evolved. The one used in these Standard Bidding Documents was prepared by the International Federation of Consulting Engineers (Federation Internationale des Ingenieurs-Conseils, or FIDIC), and is commonly known as the FIDIC Conditions of Contract. (The used version is the fourth edition, 1987, reprinted in 1992 with further amendments).

The FIDIC Conditions of Contract have been prepared for an ad measurement (unit price or unit rate) type of contract, and cannot be used without major modifications for other types of contract, such as lump sum, turnkey, or target cost contracts.

The standard text of the General Conditions of Contract chosen must be retained intact to facilitate its reading and interpretation by bidders and its review by the Client. Any amendments and additions to the General Conditions, specific to the contract in hand, should be introduced in the Particular Conditions of Contract.

The use of standard conditions of contract for all civil Works will ensure comprehensiveness of coverage, better balance of rights or obligations between Employer and Contractor, general acceptability of its provisions, and savings in time and cost for bid preparation and review, leading to more economic prices.

The FIDIC Conditions of Contract are copyrighted and may not be copied, faxed, or reproduced. Without taking any responsibility of its being accurate, Pakistan Engineering Council with prior consent of FIDIC Secretariat, has reproduced herein the FIDIC General Conditions of Contract for reference purpose only which cannot be used by the users for preparing their bidding documents. The bidding document may include a purchased copy, the cost of which can be retrieved as part of the selling price of the bidding document. Alternatively, the FIDIC Conditions of Contract can be referred to in the bidding documents, and the bidders are advised to obtain copies directly from FIDIC.*

* Add the following text if the bidding documents, as issued, do not include a copy:

“Copies of the FIDIC Conditions of Contract can be obtained from:
FIDIC Secretariat
P.O. Box 86
1000 Lausanne 12
Switzerland
e-mail: fidic.pub@fidic.org – FIDIC.org/bookshop]

PART II - PARTICULAR CONDITIONS OF CONTRACT

1.1 Definitions

Delete para (a) (i) and Substitute with;

- (a) (i) The "Employer" is The Chief Engineer Irrigation Development Region-II, Hyderabad and others notified for the purpose of the Contract.

Delete para (a) (iv) and Substitute with;

(a) (iv) The "Engineer" for site supervision duties is Executive Engineer Thar Coal Water Work Division Hyderabad. Phone No. _____, Fax No. _____

Add the following paragraph

- (a) (vii) "Bidder or Tenderer" means any person or persons, company, corporation, firm Or joint venture submitting a Bid or Tender.

Add the following paragraph

- (b)(v) Add the following at the end of the paragraph:

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

Add the following paragraph:

- (b)(ix) "Program" means the Program to be submitted by the Contractor in accordance with Sub-Clause 14.1 of General conditions of Contract and any approved revisions thereto.

- (e)(i) Delete the text and substitute 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.

2.1 Engineer's Duties and Authority

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

The Engineer shall obtain the specific approval of the Employer/ Employer's Representative before carrying out his duties in accordance with the following Clauses:

- (i) Consenting to the sub-letting of any part of the Works under Sub-Clause 4.1 "Subcontracting" of General conditions of Contract.
- (ii) Certifying additional cost determined under Sub-Clause 6.3, 12.2 & 42.1 of General Conditions of Contract "Not Foreseeable Physical Obstructions or Conditions".
- (iii) Any action under Clause 10 "Performance Security" and Clauses 21,23,24 and 25 "Insurance" of sorts of General Conditions of Contract.

- (iv) Any action under Clause 40 “Suspension” of General Conditions of Contract.
- (v) Any action under Sub-Clause 44.1 “Extension of Time for Completion of General Conditions of Contract” recommendation.
- (vi) Any action under Clause 47 “Liquidated Damages for Delay” of General Conditions of Contract.
- (vii) Issuance of “Taking Over Certificate” under Clause 48 of General Conditions of Contract.
- (viii) Issuing a Variation Order under Clause 51 of General Conditions of Contract, except:
 - a) in an emergency* situation, as stated here below.
- (ix) Fixing rates or prices under Clause 52 of General Conditions of Contract.
- (x) Extra payment as a result of Contractor’s claims under Clause 53 of General Conditions of Contract.
- (xi) Release of Retention Money to the Contractor under Sub-Clause 60.3 “Payment of Retention Money” of General Conditions of Contract.
- (xii) Issuance of “Final Payment Certificate” under Sub-Clause 60.8 of General conditions of Contract.
- (xiii) Issuance of “Defect Liability Certificate” under Sub-Clause 62.1 of General Conditions of Contract.
- (xiv) Any change in the ratios of Contract currency proportions and payments thereof under Clause 72 “Currency and Rate of Exchange” of General Conditions of Contract.

(Note: Employer may further vary according to need of the project)

* (if in the opinion of the Engineer, the emergency occurs affecting the safety of life or of the works or of adjoining property, the Engineer may, without relieving the Contractor of any of his duties and responsibilities under the contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 52 and shall notify the contractor accordingly, with a copy to Employer.)

2.2 Engineer’s Representative

Add the following paragraph:

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)

Add the following Sub-Clause:

2.7 Engineer Not Liable

Approval, review 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.

Add the following Sub-Clause:

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.”

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 PEC , Islamic Republic of Pakistan.

5.2 Priority of Contract Documents

Delete the documents listed at (1) to (6) of the Sub-Clause and substitute with the following:

- (1) The Contract Agreement (if completed);
- (2) The Letter of Acceptance;
- (3) The Form of Bid;
- (4) The Special Stipulations (Appendix-A to Bid);
- (5) The Particular Conditions of Contract – Part II;
- (6) The General Conditions of Contract – Part I;
- (7) The Priced Bill of Quantities (Appendix – D to Bid);
- (8) The Appendices to Bid (B, C, E to L);
- (9) The Drawings;
- (10) The Specifications.
- (11) _____ (any other)

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.

Add the following Sub-Clauses:

6.6 Shop Drawings

The Contractor shall submit to the Engineer for review 3 copies of all shop and erection drawings applicable to this Contract as per provision of relevant Sub-Clause of the Contract. Review and approval by the Engineer shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory and that the Engineer’s review or approval shall not relieve the Contractor of any of his responsibilities under the Contract.

6.7 As-Built Drawings

At the completion of the Works under the Contract, the Contractor shall furnish to the Engineer 6 copies and one reproducible of all drawings amended to conform with the Works as built. The price of such Drawings shall be deemed to be included in the Contract Price.

10.1 Performance Security

Delete the text and substitute 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 of an amount equal to 10% of the Contract Price stated in the Letter of Acceptance. Such Security

shall be in the form of Insurance Bond from any recognized Insurance Company acceptable to the Employer.

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

Add the following Sub-Clause:

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.

14.1 Programme to be submitted

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

The Program shall be submitted within 42 days from the date of receipt of Letter of Acceptance, which shall be in the form of:

- (i) a Bar Chart identifying the critical activities.

14.3 Cash Flow Estimate to be submitted

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

The detailed Cash Flow Estimate shall be submitted within 21 days from the date of receipt of Letter of Acceptance.

Add the following Sub-Clause:

14.5 Detailed Programme and Monthly Progress Report

- (a) For purposes of Sub-Clause 14.1 of General conditions of Contract, the Contractor shall submit to the Engineer detailed Program for the following:
 - (1) Execution of Works;
 - (2) Labour Employment;
 - (3) Local Material Procurement;
 - (4) Material Imports, if any; and
 - (5) Other details as required by the Engineer.
- (b) During the period of the Contract, the Contractor shall submit to the Engineer not later than the eighth day of the following month, 10 copies each of Monthly Progress Reports covering:
 - (1) A Construction Schedule indicating the monthly progress in percentage;
 - (2) Description of all works carried out since the last report;
 - (3) Description of the work planned for the next 56 days sufficiently detailed to enable the Engineer to determine his Program of inspection and testing;
 - (4) Monthly summary of daily job record;
 - (5) Photographs to illustrate progress; and
 - (6) Information about problems and difficulties encountered, if any, and proposals to overcome the same.

- (c) During the period of the Contract, the Contractor shall keep a daily record of the work progress, which shall be made available to the Engineer as and when requested. The daily record shall include particulars of weather conditions, number of men working, deliveries of materials, quantity, location and assignment of Contractor's equipment.

Add the following Sub-Clauses:

15.2 Language Ability of Contractor's Representative

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

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

Add the following Sub-Clauses:

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 is 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 staff and labour from sources within Pakistan.

Add the following Sub-Clauses:

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 authorize or direct and the Contractor shall take or cause to be taken such further measures and comply with such further requirements as the Engineer may determine to be reasonably necessary for such purpose.

The Contractor shall 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.

20.4 Employer's Risks

The Employer's risks are:

Delete the text and substitute with the following:

- (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:
 - (a) prevent loss or damage to physical property from occurring by taking appropriate measures, or
 - (b) insure against.

21.0 Insurance of Works and Contractor's Equipment

In the second line add "prior to Commencement of Works" in between "The Contractor Shall" and "insure in the joint names"

Add the following Sub-Clause:

For fulfilling his obligations under Sub-clause (1) of this clause, the Contractor shall be reimbursed on a prime cost basis the actual amount of premium paid by the Contractor for providing the required Insurance. The Contractor's overhead costs, profits and all other costs incidental to providing the specified Insurance shall be deemed to be covered by the rates and prices entered in the Bill of Quantities and no separate payment on this account shall be made by the Employer.

21.4 Exclusions

Delete the text and substitute with the following:

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

23.0 Third Party Insurance (including Employer's property)

Add the following Sub-Clause:

Such Insurance shall be for an amount not less than Rs. 2.00 Million per occurrence, with the number of occurrences unlimited

Add the following Sub-Clause:

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) of General conditions of Contract with either National Insurance Corporation of Pakistan or other recognized insurance company operating in Pakistan and acceptable to the Employer.

For fulfilling his obligation under such insurance, the contractor shall be reimbursed on a prime cost basis the actual amount of premium paid by the Contractor for providing the

required insurance. The Contractor's overhead costs, Profits and all other costs incidental to providing the specified insurance shall be deemed to be covered by the rates and prices entered in the Schedule of Prices and no separate payment on this account will be made by the Employer.

30.1 Avoidance of damage to roads

Add the following paragraph to Sub-clause (1)

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

Add the following Sub-Clause:

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.

34.0 Engagement of Staff and Labour

Delete the text of Sub-clause (1) and substitute:

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour with required qualification and experience from sources within Pakistan particularly in the vicinity of the Site.

Add the following Sub-Clause:

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

Add the following Sub-Clauses:

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, or otherwise dispose of to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid.

34.10 Festivals and Religious Customs

The Contractor shall in all dealings with his staff and labour have due regard to all recognized 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 Compliance by Subcontractors

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

Add the following Sub-Clauses:

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 Sub-Clause:

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.

41.1 Commencement of Works

Delete the text and substitute with the following:

The Contractor shall commence the Works on Site within the period named in Appendix-A to

Bid from the date or 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.

48.2 Taking Over of Sections or Parts

For the purposes of para (a) of this Sub-Clause, separate Times for Completion shall be provided in the Appendix-A to Bid "Special Stipulations" if required.

51.2 Instructions for Variations

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

52.1 Valuation of Variations

In the tenth line, after the words "Engineer shall" add the following:
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.

Add the following Sub-Clause

52.2 Power of Engineer to Fix Rates

At the end of the first paragraph:
Provided further that no change in the rate or price for any item contained in the Contract shall be considered unless such item accounts for an amount more than 2 percent of the Contract Price, and the actual quantity of work executed under the item exceeds or falls short of the quantity set out in the Bill of Quantities by more than 25 percent.

53.4 Failure to Comply

Delete this Sub-Clause in its entirety.

54.5 Conditions of Hire of Contractor's Equipment

Add the following paragraph:
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.

58 Provisional Sums

Add Sub-Clause (4): - Substitution of Prime Costs with Actual costs.
(4) Every sum in the Bill of Quantities, which contains (either as whole or part of the sum) a prime cost (P.C), shall be revised at direction of the Engineer, by the substitution of the actual price paid by the contractor for the prime cost price.

Add the following Sub-Clauses:

59.4 Payments to Nominated Subcontractors

NOT APPLICABLE

59.5 Certification of Payments and Nominated Subcontractors

Before issuing a Payment Certificate which includes an amount payable to a nominated Subcontractor, the Engineer may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:

- a) submits reasonable evidence to the Engineer, or
- b) i) satisfies the Engineer in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and
- ii) submits to the Engineer reasonable evidence that the nominated

Subcontractor has been notified of the Contractor's entitlement, then the Employer may (at his sole discretion) pay direct to the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Employer, the amount which the nominated Subcontractor was directly paid by the Employer.

60.1 Monthly Statements

In the first line after the word "shall", add the following:

"on the basis of the joint measurement of work done under Clause 56.1, of General conditions of Contract"

In Para (c) delete the words "the Appendix to Tender" and substitute with the words "Sub-Clause 60.11 (a)(6) of General Conditions of Contract hereof".

60.10 Time for Payment

Delete the text and substitute with the following:

The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other term of the Contract, shall , subject to Clause 47 of General conditions of Contract, be paid by the Employer to the Contractor within 28 days after such Interim Payment Certificate has been delivered to the Employer, or, in the case of the Final Certificate referred to in Sub Clause 60.8 of General conditions of Contract, within 56 days after such Final Payment Certificate has been delivered to the Employer. In the event of the failure of the Employer to make payment within the time stated without any valid reason, the Employer shall pay to the Contractor compensation at the rate of 8% per annum in local currency, upon all sums unpaid from the date by which the same should have been paid. The provisions of this Sub-Clause are without prejudice to the Contractor's entitlement under Clause 69 of General Conditions of Contract.

Add the following Sub-Clauses:

60.12 Financial Assistance to Contractor

Financial assistance shall be made available to the Contractor by the Employer by adopting the following alternative:

- a) An interest-free Mobilization Advance up to 5 % of the Contract Price stated in the Letter of Acceptance shall be paid by the Employer to the Contractor in two equal installments on the submission by the Contractor of a Mobilization Advance Bond for the full amount of the Advance in the specified form from recognized Insurance Company acceptable to the Employer.
 - (1) First part within 14 days after signing of the Agreement or date of receipt of Engineer's Notice to Commence, whichever is earlier; and
 - (2) Second part within 42 days from the date of payment of the first part, subject to the satisfaction of the Engineer as to the state of mobilization of the Contractor.
- b) This Advance shall be recovered in equal installments; first installment at the expiry of third month after the date of payment of first part of Advance and the last installment two months before the date of completion of the Works as per Clause 43 hereof.

63.1 Default of Contractor

Add the following para at the end of the Sub-Clause:

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.

65.2 Special Risks

Delete the text and substitute with the following:

The Special Risks are the risks defined under Sub-Clause 20.4 paragraph a (i) to (v) of General conditions of Contract.

67.3 Arbitration

In the sixth to eight lines, delete the words “shall be finally settled under such Rules” and substitute with the following:

shall be finally settled under the provisions of PEC Rules of conciliation Arbitration of 2005

Add the following paragraph:

The place of arbitration shall be Hyderabad, Pakistan.

68.1 Notice to Contractor

Add the following paragraph:

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.

Delete Sub-Clause 68.2 (b) and substitute with

68.2 Notice to Employer and Engineer

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

1. The "Employer"
Project Director, Thar Coal Water Works Project Mirpurkhas
Camp Office Left Bank Barrage Colony
Hyderabad
Phone No. 022-9210131
Fax No. 022-9210133
2. The “Employer’s Representative”
Superintending Engineer
Thar Coal Water Works Project
Mirpurkhas.
Phone No. _____
Fax No. _____
3. The “Engineer”
For site supervision duties
Executive Engineer
Thar Coal Water Works Division
Mirpurkhas.
Phone No. _____
Fax No. _____

70.1 Increase or Decrease of Cost

Delete Sub-Clause 70.1 of General conditions of Contract in its entirety, and substitute with the following:

The amounts payable to the Contractor, pursuant to Sub-Clause 60.1 of General Conditions of Contract, shall be adjusted in respect of the rise or fall in the cost of labor, materials, and other inputs to the Works, by applying to such amount the formula prescribed in this Sub-Clause.

(a) Other Changes in Cost

To the extent that full compensation for any rise or fall in costs to the Contractor is not covered by the provisions of this or other Clauses in the Contract, the unit rates and prices included in the Contract shall be deemed to include amounts to cover the contingency of such other rise or fall of costs.

(b) Adjustment Formula

The adjustment to the monthly statements in respect of changes in cost shall be determined from the following formula:-

$$P_n = A + b \frac{L_n}{L_o} + c \frac{M_n}{M_o} + d \frac{E_n}{E_o} + \dots$$

Where:

P_n is a price adjustment factor to be applied to the amount only for the payment of the work carried out in the subject month, determined in accordance with Paragraph 60.1 (a) No variations and day work are subject to price adjustment.

A is a constant, specified in the Appendix-C to Bid, representing the nonadjustable portion in contractual payments;

$b, c, d, \text{ etc.},$ are weightages or coefficients representing the estimated proportion of each cost element (labour, cement and reinforcing steel etc.) in the Works or Sections thereof, net of Provisional Sums and Prime Cost; the sum of $A, b, c, d, \text{ etc.},$ shall be one;

$L_n, M_n, E_n, \text{ etc.},$ are the current cost indices or reference prices of the cost elements for month "n", determined pursuant to Sub-Clause 70.1(d) of General conditions of Contract, applicable to each cost element; and

$L_o, M_o, E_o, \text{ etc.},$ are the base cost indices or reference prices corresponding to the above cost elements at the date specified in Sub-Clause 70.1(d) of General conditions of Contract.

(c) Sources of Indices and Weightages

The sources of indices shall be those listed in the Appendix-C to Bid, as approved by the Engineer. As the proposed basis for price adjustment, the Contractor shall have submitted with his bid the tabulation of Weightages and Source of Indices if different than those given in the Appendix-C to Bid, which shall be subject to approval by the Engineer.

(d) Base, Current, and Provisional Indices

The base cost indices or prices shall be those prevailing on the day 28 days prior to the latest date for submission of bids. Current indices or prices shall be those prevailing on the day 28 days prior to the last day of the period to which a particular monthly statement is related. If at any time the current indices are not available, provisional indices as determined by the Engineer will be used, subject to subsequent correction of the amounts paid to the Contractor when the current indices become available.

(e) Adjustment after Completion

If the Contractor fails to complete the Works within the time for completion prescribed under Clause 43 of General conditions of Contract, adjustment of prices thereafter until the date of completion of the Works shall be made using either the

indices or prices relating to the prescribed time for completion, or the current indices or prices, whichever is more favorable to the Employer, provided that if an extension of time is granted pursuant to Clause 44 of General Conditions of Contract, the above provision shall apply only to adjustments made after the expiry of such extension of time.

(f) **Weightages**

The weightages for each of the factors of cost given in the Appendix-C to Bid shall be adjusted if, in the opinion of the Engineer, they have been rendered unreasonable, unbalanced, or inapplicable as a result of varied or additional work executed or instructed under Clause 51 of General Conditions of Contract. Such adjustment(s) shall have to be agreed in the variation order.

72.2 Currency Proportions

Delete the contents of this Sub-Clause entirely and substitute “all payments shall be made in local currency only”.

72.3 Currencies of Payment for Provisional Sums

Delete the contents of this Sub-Clause entirely and substitute “all payments shall be made in local currency only”.

Add the following Sub-Clauses:

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 Custom Duty and Taxes

The price tendered 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, Material and supplies to be used on or furnished under the Contract and on the service performed under the Contract.

Add the following Sub-Clause:

74.1 Bribery and Collusion

(1) The Employer shall be entitled to terminate the Contract and recover from the Contractor the amount of any loss resulting from such termination if the Contractor shall have offered or given to any person any gift or consideration of any kind as an inducement or reward for doing, or forbearing to do, any action in relation to obtaining, or in the execution of the Contract or any other contract with the Employer, or for showing favour to any person in relation to the Contract or any other contract with the Employer, or if any of the like acts shall have been done by any person employed by the Contractor or acting on his behalf (whether with or without the knowledge of the Contractor), or if the Contractor shall have come to any agreement with another contractor or number of contractors whereby an agreed quotation or estimate shall be offered as a bid to the Employer by one or more Contractors.

(2) In the event of such termination, the Contractor shall:

- (a) proceed as provided in Sub-Clause 65.7 of General conditions of Contract hereof; and
- (b) be paid by the Employer as provided in Sub-Clause 65.8 of General conditions of Contract hereof, provided that any loss referred to in Sub-Clause (1) of this Sub-Clause shall first be deducted.

Add the following 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 of General Conditions of Contract hereof; and
- (b) shall be paid by the Employer as provided in Sub-Clause 65.8 of General Conditions of Contract hereof.

Add the following Sub-Clause:

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.

Add the following Sub-Clause:

77.1 Joint and Several Liabilities

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 fulfillment 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.

Add the following Sub-Clause:

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.

**PART-II
SPECIAL PROVISIONS**

LIST OF CONTENTS

S.Nr	Title	Page Nr.
SPECIAL PROVISIONS		
1.0	Location of Project	SP-1
2.0	The Site	SP-1
3.0	Scope of the Works	SP-1
4.0	Description of the Works	SP-1
5.0	Construction Program and Method Statements	SP-2
6.0	Extent of Work	SP-3
7.0	Drawings	SP-3
8.0	Right to Change	SP-4
9.0	Quality of Material	SP-4
10.0	Standards and Specifications	SP-4
11.0	Inspection and Tests.....	SP-5
12.0	Canal Closure	SP-6
13.0	Datum of Levels.....	SP-6
14.0	Survey	SP-6
15.0	Notice of Operations	SP-7
16.0	Natural Materials	SP-7
17.0	Existing Irrigation Channels and Watercourses	SP-7
18.0	Access and Haul Routes.....	SP-7
19.0	Climatological Data	SP-7
20.0	Groundwater Level	SP-8
21.0	Contractor's Camps	SP-8
22.0	Transport and Communication	SP-8
23.0	Construction Materials	SP-8
24.0	Disposal of Waste Materials	SP-8
25.0	Restorations of Rights-of-Way	SP-8

26.0	Landscape Preservation	SP-8
27.0	Prevention of Water Pollution	SP-8
28.0	Abbreviations	SP-9
29.0	Engagement of Staff and Labour	SP-9
30.0	Repatriation of Labour	SP-9
31.0	Supply of Foodstuffs	SP-9
32.0	Religious Customs and Festivals	SP-10
33.0	Safety Precautions	SP-10
34.0	Records of Safety and Health	SP-10
35.0	Measures against Insect and Pest Nuisance	SP-10
36.0	Epidemics	SP-10
37.0	Burial of the Dead	SP-10
38.0	Disorderly Conduct	SP-10
39.0	Alcohol, Drugs, Arms and Ammunition	SP-11
40.0	Contractor's Responsibility	SP-11
41.0	Reporting of Accidents	SP-11

SPECIAL PROVISIONS

1.0 Location of Project

The project includes Supply and installation of Pumps and Motors for Raw water Pumping Station, and Supply and installation of Pumps and Motors for Brine Water Pumping Station at LBOD RD 364 near Ahori Village Road Bridge part of construction of water carrier (100 cusec) from spinal Drain RD 362 (LBOD) to Nabisar for Thar Coal Power Generation Units.

2.0 The Site

The site of the Works is defined as the area for the construction of carrier lining together with their appurtenant structures within the Right-of-Way lines, boundaries and limits shown on the Drawings and such additional areas adjacent there to as may be designated by the Engineer from time to time for the construction to be performed under the Contract Documents.

Within the areas which may from time to time be defined as the Site, the Contractor shall carry out and perform the construction of the Works, and subject to the approval of the Engineer, will be permitted to construct temporary roadways, camps, buildings and Temporary Works which he may require for the construction of the Works. If the Contractor wishes to use any land other than as aforesaid for construction of camps or for any other Contract purposes, the Contractor shall make all necessary arrangements with the owner thereof and shall bear all rentals or other costs connected therewith.

The Employer will give to the Contractor possession of as much of the area designated and defined as ‘the Site’ and shown on the drawings as may be required to implement the Works, when the Engineer’s order to commence work is given.

3.0 Scope of the Works

Under the Contract Documents, the Contractor shall construct water carrier lined various existing channels as shown on the Drawings and in strict adherence to the Specifications. The Contractor shall do all the work required for the completion of the Works as specified in the Contract including, but not limited to the construction of water carrier lining of the project.

The works would generally consist of:

- a) Supply and installation of pumps, motors for Raw water pumping station;
- b) Supply and installation of pumps, motors for Brine water pumping station;

4.0 Description of the Works

The works include but not limited to the following, in respect of supply and installation of pumps including motor and electrical parts Raw Water Pumping Station with Capacity of 100 Cusec 5 pumps of 25 cusec each one as standby at RD 364, supply and installation of pumps including motor and electrical parts Brine Water Pumping Station with Capacity of 30 Cusec 3 pumps of 15 cusec each one as standby at RD 362 Borrow pit excavation undressed, lead up to 100ft:

- (i) Supply and installation of pumps, motors for Raw water pumping station for Raw water pumping station
- (ii) Supply and installation of pumps, motors for Raw water pumping station for brine water pumping station.

5.0 Construction Program and Method Statements

(1) Construction Program

Before commencing the Works, the Contractor shall submit to the Engineer for his approval a program pursuant to Clause 14.1 of the Conditions of Contract showing the order in which he proposes to carryout the Works. The submission shall be accompanied by the Construction Schedule in bar chart form containing adjustments, if any, to the bar chart construction schedule submitted with his bid. The Contractor shall revise his program as necessary to ensure completion of the Works within the time allowed. The program shall include the following details:

- (a) Statement giving the numbers and categories of supervisory and technical staff and skilled and unskilled Labour to be employed on the Works.
- (b) A list and type details of major constructional plant (including vehicles) which the Contractor proposes to use on the Works
- (c) Details of Contractor's methods of work for all operations
- (d) Statement giving proposals for the location or locations and sizes of base camps, accommodation, offices, workshops and stores; and
- (e) Details of the program for the Works in accordance with Clause 14.1 of Conditions of Contract including a complete resource allocation showing the number of units and the allocated times for each unit of constructional plant, materials and Labour allocated to each part of the Works.

The work must be program so that completion is generally achieved working from downstream to the upstream end of the Channel.

The Program to be furnished by the Contractor shall be prepared using CPM network or other approved method. Presentation shall be by bar chart; table or other approved method and shall split up the Works into activities. For each activity the program shall show:

- * Early start
- * Late start
- * Duration
- * Float
- * Resources of labour, plant and materials allocated

The activities shown in the program shall include, in addition to construction of permanent and temporary works, for the procurement and delivery to Site of materials and equipment. Allowance for all public and religious holidays shall be made in the program.

(2) Method Statements

In addition to the program herein above referred, method statements shall be furnished by the Contractor for earthworks, Carrier lining and construction of new structures.

6.0 *Extent of Work*

The Contractor shall carry supply and installation of pumps for Raw and Brined water pumping station including all items provide in BoQ at RD 364 to Spinal drain near Ahori Bridge LBO, Contract Package: **Thar-Pumps**. As shown on the Drawings and in strict adherence to the Specifications. The Contractor shall do all the work required for the completion of the Works as specified in the Contract including but not limited to the said works.

The Contractor shall procure, furnish, provide and arrange for all the necessary electric power, water and services; be responsible for the construction and maintenance of the necessary construction camps, offices and warehouses; and perform all other work necessary for completion of the Works described herein in strict conformity with these Specifications.

The information about project area stated hereof is only for guidance of the bidders and the Contractor. The Employer however does not guarantee the correctness of information and the designations of any material as described nor any interpretations, deductions or conclusions relative to them. Each bidder and the Contractor must form his own opinion of the character of the work and of the materials to be excavated; he must make his own interpretations, and satisfy himself by his own investigations and research regarding all conditions affecting the work to be done. Bidders and the Contractor must assume all responsibility for deductions and conclusions as to the nature or condition of the materials to be excavated and of doing other work affected by the geology and all other factors at the Site of the works.

7.0 *Drawings*

The Drawings issued in the Bid dossier are listed at the end of the bidding documents hereinafter are referred to as the Bid Drawings, showing the scope of the Works to be performed by the Contractor. The Bid Drawings shall not be used as a basis for construction but may be used as a basis for placing preliminary orders for materials, subject to corrections based on the future issue of Drawings as specified below.

After award of Contract, the Bid Drawings will be replaced by Drawings issued for construction including supplements to the Specifications as may be necessary. Such Drawings and Specifications shall be construed to be further drawings and instructions as provided for in Sub-Clauses 1.1 (b)-i. and 1.1 (b)-ii of the Conditions of Contract. The drawings issued for construction will include re-issued Bid Drawings. Bid Drawings as may be modified, and additional Drawings as required to develop the work in greater detail. Further modifications will be made as necessary to detail the construction requirements. The Drawings issued for construction that show changes from the Bid Drawings and Specifications will be reviewed by the Engineer for his determination of adjustments (if any) of the Contract Price in accordance with the provisions of Sub-Clauses 51.1 “Variations” of the Conditions of Contract. The work shall be executed in conformity with the Drawings issued for construction.

The Contractor shall check all Drawings issued for construction carefully as soon as practicable after receipt thereof, and shall promptly bring to the notice of the Engineer any errors, which are discovered.

The Contractor shall be responsible for the preparation of all record or “as built drawings” as the work proceeds. These drawings shall be for the permanent record of the Employer and shall be in the form of softcopy in AutoCAD Drawings format on CD/DVD together with 10 prints for each drawing produced. The quality and format of these drawings shall be subject to the approval of the Engineer.

The issue of Certificate of Completion for the whole Works, in accordance with the Conditions of Contract Sub-Clause 48.1 shall be conditional upon the Contractor having completed for the said Works and submit a complete set of the record drawings to the satisfaction of the Engineer. The contractor shall first submit draft drawings for review and approval by the Engineer.

Thereafter the Contractor shall submit the completed drawings not later than 56 days after the issue of the Certificate of Completion.

8.0 *Right to Change*

When additional information regarding the geological formations or other conditions becomes available as a result of excavation, drilling, testing, model studies, or exploratory work, the Engineer may find it desirable to change dimensions or design of one or more of the features of the Works to conform to the newly disclosed conditions. Towards this end the Engineer reserves the right to make any such reasonable changes, and the Contractor's plant shall be deployed and his operations shall be conducted so as to accommodate any such reasonable changes in the Works with no increase in the cost to the Employer.

9.0 *Quality of Material*

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

Prior to procurement, the Contractor shall furnish to the Engineer, for his approval, the names of the manufacturers of all equipment and materials, which he contemplates incorporating in the Works. With this information the Contractor shall also furnish such pertinent information as to capacities, efficiencies and sizes, and the Engineer may require such other information as. Samples of materials shall be submitted to the Engineer for approval when so directed. Equipment, materials, supplies and articles installed or used without the Engineer's approval shall be at the risk of subsequent rejection.

10.0 *Standards and Specifications*

Except where otherwise specified all materials and workmanship shall conform with the requirements of the relevant British Standards and British Standard Codes of Practice (hereinafter referred to as BS or CP) issued by the British Standards Institution on 1st January 1999 and American Standards issued by the American Society for Testing and Materials in 1999 (hereinafter referred to as ASTM Standards). Other equivalent National or International Standard Specifications may be substituted at the sole discretion of the Engineer or as may have been agreed in the Contract.

Except as otherwise provided by these Specifications or Drawings, all materials, equipment, fabrication and testing thereof shall conform to the latest applicable standards and specifications contained in the following list or to equivalent applicable standards and specifications established and approved in the country of manufacture or supply

Where relevant British Standards and Codes of Practice now quote metric units only, these are to be interpreted as required to the nearest equivalent imperial (foot/pound) unit for the purposes of this Contract.

All materials and workmanship not fully specified herein or covered by an approved Standard shall be of such a kind as is used in first class work and suitable to the climate in the Project Area.

The Standards and other publications shall include the following:

BS	British Standards
CP	British Codes of Practice
AASHTO	American Association of State Highway & Transportation Officials
ASTM	American Society for Testing and Materials
ASA	American Standard Association
ACI	American Concrete Institute
USBR	U. S Bureau of Reclamation

If the Contractor, at any time and for any reason, wishes to deviate from the above standards or desires to use material or equipment not covered by the above standards, he shall state the exact nature of the changes, the reason for making the change and shall submit complete Specifications of the materials and equipment to the Engineer for approval, together with any other evidence to demonstrate that the alternative proposal is equal to or superior to the above specified list.

All materials, equipment and workmanship shall conform to the respective standard specifications referred to in the Specifications. Where the standards for workmanship, materials and equipment are not stated in the Specifications, they shall conform with appropriate and most recent British Standards (hereinafter referred to as BS), or to the American Society for Testing and Materials standards (hereinafter referred to as ASTM standards) or American Concrete Institute (ACI) or US Bureau of Reclamation (USBR). Other equivalent National or International Standard Specifications may be substituted at the sole discretion of the Engineer or as may have been agreed in the Contract.

If the Contractor proposes equivalent standard specifications of equivalent materials and equipment, the Contractor shall state the exact nature of the change and shall submit complete standard specifications and information and data on the material and equipment in the English language for approval of the Engineer. Such submission shall be timely, and failure to do so or purchase of any proposed equivalent materials and equipment prior to approval by the Engineer shall be at the Contractor's risk.

11.0 Inspection and Tests

All equipment and materials furnished under the Specifications and all work performed in connection therewith will be subject to rigid inspection by the Engineer or his authorized agent. Inspection at the manufacturer's plant will be made to determine that the equipment and materials meet the requirements of the Specification.

The Contractor shall notify the Engineer not less than 14 days in advance of the date and place that the equipment or materials will be available for inspection. No equipment or material shall be transported until inspection at the manufacturer's plant has been made and final drawings have been furnished by the Contractor and accepted by the Engineer.

Acceptance of equipment and materials or the waiving of inspection thereof shall in no way relieve the Contractor of the responsibility for furnishing equipment and materials meeting the requirements of the Contract.

12.0 Canal Closure

There is a canal closure period in December/January during which all Canals are emptied of water.

13.0 Datum of Levels

The Standard Bench Mark (SBM) established by Geological Survey of Pakistan with reduced level 36.345 situated on Sloore Minor Top of R/S Wing wall RD 32 of Spinal Drain of Sloor minor left side of Minor Bridge. Left Wing Wall of Bridge from R/S of Drain.

14.0 Survey

Based on the Datum (Clause 13.0), the Contractor shall establish benchmarks on which the entire construction work shall be based.

Accuracy of double levelling work for establishment of benchmarks shall be $(0.25 \sqrt{CM})$ inches, where CM is the length of the levelling line in canal miles

(1 canal mile = 5,000 feet). Benchmark coordinates shall be determined at an accuracy of 1:4000. Following standards shall be maintained for carrying out double levelling

- The interval of benchmarks along the irrigation channels shall be one benchmark per RD. Each benchmark shall be numbered.
- Staff reading shall be observed up to third place of decimal
- Closing error falling within permissible limit of $(0.25 \sqrt{CM})$ inch shall be adjusted for calculation of final heights. Lines not closing within permissible limit shall be completely revised.
- A list shall be prepared giving number, description, height and coordinates of each benchmark.
- Results of all site work shall be subject to approval of the Engineer.

Where required, the Contractor shall submit to the Engineer, plotted positions of original ground levels for measurement of earthworks.

The method of surveying shall be to the approval of the Engineer. Field books and tabulated data shall be properly maintained and made available to the Engineer for inspection as and when required.

The contractor shall cooperate with the Engineer in checking the setting-out and in performing the measurement surveys for record and payment purposes. The contractor

shall render all necessary assistance to the Engineer and shall provide, as required by and for the sole use of the Engineer, sufficient quantities of pegs, poles, straight edges, staging, moulds, templates, profiles and all other requisite items for checking the Contractor's setting out and measurement of the Works.

Before commencing the Works, joint inspections shall be carried out during which surveys shall be carried out as required for the purposes of measuring the Works and checking the setting out.

The cost of all labour and materials required by the Engineer for the said purposes shall be borne by the Contractor. No payment shall be made for the costs incurred by the

Contractor in complying with the requirements of this sub-clause, which cost shall be deemed to be included in the unit prices in the various items in the Bill of Quantities.

15.0 *Notice of Operations*

The Contractor shall give full and complete written notice of all important operations to the Engineer, sufficiently in advance to enable the Engineer to make such arrangements as the Engineer may consider necessary for inspection and for any other purpose. The Contractor shall not start any important operation without the written approval of the Engineer.

16.0 *Natural Materials*

The Contractor shall make all arrangements for the location, selection and processing of natural materials to comply with the Specifications and shall submit to the Engineer for approval full information regarding the proposed location, well in advance of commencement of working of the material. Approval of a source shall not imply that all the material from that source is approved.

17.0 *Existing Irrigation Channels and Watercourses*

The Contractor shall take all measures necessary to prevent disruption to flow in existing Irrigation Channels and watercourses that may be affected by the Contractor's working unless otherwise sanctioned in writing by the Engineer.

18.0 *Access and Haul Routes*

The Contractor shall make his own investigation of the condition of available public or private roads and of clearance, restrictions, bridge load limits and other limitations that affect or may affect transportation and ingress and egress at the work locations.

The operations of the Contractor on haul routes in hauling of materials and other intra job hauling and transportation over public highways, roads and bridges shall be in compliance with local regulations. Where haul routes cross public highways or roads, the Contractor shall provide barricades, flagmen and other necessary precautions for safety.

The repair and replacement of roadways drain and canal banks either damaged or removed shall be the responsibility of the Contractor. The Contractor shall limit his loads, speeds and hauling operations over the existing roads so as to minimize damage by Contractor activities to existing facilities. Ruts and scars resulting from the Contractor's operations shall be removed; damage to ditch banks shall be corrected; and the banks and operating roads shall be restored as nearly as practicable to their original condition before final acceptance of the work.

Where haul is necessary to take material from a borrow area to the site of an earthworks filling operation, the Contractor shall submit to the Engineer full details of the route and the distance, for his approval.

The cost incurred by the Contractor for performance of his responsibilities referred to in the above paras, shall be included in the prices tendered in the Bill of Quantities for other items of work.

19.0 *Climatological Data*

The area of project is under the influence of wind coming from sea which keeps the temperature down. The hottest months of the project area are, May and June. January and February are coldest months with mean temperature of 7⁰ C to 10⁰ C.

20.0 *Groundwater Level*

The increase in surface water supplies, due to construction of Barrages has caused the water table in area to rise. Depth to water table in the area keeps on fluctuating throughout the year. In general the ground water table in the area is at shallow depth.

21.0 *Contractor's Camps*

The Contractor shall make his own arrangement for camps. The Contractor's camps as are required for the proper and efficient progress of the Works and shall comply with the rules of the Pakistan Labour Camp Rules, 1960, issued by the Pakistan Health, Welfare and Local Government Department and the requirements therein set forth.

The Contractor shall remove his camp and facilities after 56 days of the completion date and leave the camp site in the condition it was before he arrived.

The Contractor shall make at his own expense the arrangements for water and power supplies required for his camp, offices, workshops and for all other requirements at site.

22.0 *Transport and Communication*

The project area is well connected with metalled roads and railway lines leading to the major markets of Sindh and important cities in the province. The main markets for agricultural products are Tando Allahyar and Hyderabad.

23.0 *Construction Materials*

Construction material is available in the cities of Tando Allahyar and Hyderabad.

24.0 *Disposal of Waste Materials*

Waste materials including, but not restricted to, refuse, garbage, industrial wastes, and oil and other petroleum products shall be disposed of by the Contractor. Disposal of waste materials shall be by burying, where burial of such materials is approved by the Engineer; by burning, where burning of such materials is permitted in accordance with local laws; or by removal from the Site.

25.0 *Restorations of Rights-of-Way*

- a) The Contractor shall be responsible for restoring, before the Completion Date, the surface of the lands disturbed by the work within the right-of-way to as close as possible to the original condition as found, to the satisfaction of the Engineer.
- b) Any damage or disturbance to the Employer's facilities or public or private property caused by the Contractor's operations shall be repaired or replaced at the Contractor's expense

26.0 *Landscape Preservation*

The Contractor shall exercise care to preserve 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.

27.0 *Prevention of Water Pollution*

The Contractor shall ensure that his activities are performed by methods that will prevent entrance, or accidental spillage, of solid matter, contaminants, debris, and other objectionable pollutants and wastes into canals, drains, flowing streams, flowing or dry watercourses, lakes and underground water sources.

28.0 Abbreviations

The following abbreviations are used in these Specifications:

in	inch
ft	Foot
rft	Running foot
RD	Reduced Distance
sft	Square foot
cft	Cubic foot
lb	Pound
mm	Millimeter
Rs	Rupees
cwt	Hundred weight
kg	Kilogram
vm	Vehicle Month
Nr	Number
nr	Number
C	Celsius
%	Percent
CM	Canal Mile
hr	hour

29.0 Engagement of Staff and Labour

The Contractor shall, unless otherwise provided in the Contract, make his own arrangement for the engagement of all staff and labour, local or others and for their payment, housing, feeding, transport and all required for their performance in connection with the Contract.

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour (with the required qualification and experience) from sources within Pakistan particularly in the vicinity of the Site.

The Contractor shall not recruit his staff and labour from amongst the personnel in the service of the Employer or the Engineer.

30.0 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 shall have left Pakistan or the Site, as appropriate.

31.0 Supply of Foodstuffs

The Contractor shall arrange for the provision of a sufficient supply of suitable food at reasonable prices for all persons employed by him or his sub-contractors for the purposes of or in connection with the Contract.

32.0 *Religious Customs and Festivals*

The Contractor shall in all dealings with his employees at the Site have due regard to all recognized festivals, days of rest and religious or other customs and shall make special arrangements whenever the exigencies of the Contract demand that work at the Site shall proceed during such festivals and the days of rest.

33.0 *Safety Precautions*

In order to provide for the safety, health and welfare of persons and for the prevention of damage to all operations on the Site for the purpose of or in connection with the Contract, work shall be carried out in compliance with the Manual entitled "Safety Requirements for Construction by Contract, June 1961" published by the Employer with such modifications thereto as the Engineer may authorize or direct and the Contractor shall take such further measures and comply with such further requirements as the Engineer may determine to be reasonably necessary for such purpose.

34.0 *Records of Safety and Health*

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

35.0 *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 dangers 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 take steps to prevent the formation of stagnant pools of water. The Contractor 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 bilharzia and wild animals.

36.0 *Epidemics*

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

37.0 *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.

38.0 *Disorderly Conduct*

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

39.0 *Alcohol, Drugs, Arms and Ammunition*

The Contractor shall not, otherwise than in accordance with the State laws, ordinances, regulations or orders in force import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs or any arms or ammunition to any person or persons whatsoever nor permit or suffer any such importation, sell, gift, barter or disposal by his subcontractors, agents, staff or Labour.

40.0 *Contractor's Responsibility*

The Contractor shall be responsible for the observance by his subcontractors of the foregoing provision.

41.0 *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 Employer immediately by the quickest available means.

TECHNICAL PROVISIONS

TABLE OF CONTENTS

S.Nr	Description	Page Nr
1	- GENERAL	1
1.1	Mobilization for Construction of the Works.....	1
1.2	Shipment of Contractor’s Plant and Equipment to Site	1
1.3	Provision of Camps.....	1
1.4	Provision of Contractor’s Office.....	1
1.5	Latrines	2
1.6	Provision of Contractor’s Workshops, Warehouses etc.	2
1.7	Provision of Power Supply to offices, Facilities, Workshops, Camps etc.....	2
1.8	Supply of Water for Construction.....	2
1.9	All other Items of Mobilization not Specifically Stated	2
1.10	Maintenance of Site Facilities of Contractor	2
1.11	Measurement and Payment	2
1.12	Provisional Sum	3
2	- THE SITE	4
2.1	General.....	4
2.2	Use of Land for Construction Facilities.....	4
2.3	Access to the Works.....	4
2.4	Roadways Crossings	4
2.5	Damage to Canal and Drain Banks and Operating Roads	4
2.6	Site Operations.....	5
2.7	Utilities, Transmission and Telephone Lines.....	5
2.8	Grazing Livestock.....	5
2.9	Safety	5
2.10	Clearance of Site	5
2.11	Condition of Site.....	6
2.12	Disposal of Waste Materials	6
2.13	Prevention of Pollution	6
2.14	Preservation of Historical and Archeological Findings and Graveyards.....	7

Part-II – Technical Provisions

2.15	Measurement and Payment.....	7
3	- MATERIALS AND WORKMANSHIP	8
3.1	Sampling and Testing	8
3.2	Concrete Sampling and Testing.....	8
3.3	Tests and Testing Equipment.....	9
3.4	Measurement and Payment.....	11
4	- CARE AND HANDLING OF WATER	12
4.1	General.....	12
4.2	Scope of Work	12
4.3	Protection of Works	12
4.4	Maintaining Drainage System.....	12
4.5	Plans to be approved by the Engineer.....	12
4.6	Measurement and Payment.....	12
5	- QUALITY CONTROL AND QUALITY ASSURANCE.....	13
5.1	General.....	13
5.2	General.....	13
5.3	Organization.....	13
5.4	Personnel.....	13
5.5	Document Control.....	14
5.6	Source Approval	14
5.7	Processed Material Control.....	14
5.8	Special Processes	14
5.9	Inspection.....	14
5.10	Calibration.....	14
5.11	Documentation.....	15
5.12	Submittal of Contractor’s documents	15
5.13	General.....	15
5.14	Quality Control Testing Facilities.....	15
5.15	Engineer’s Laboratory Equipment.....	16
5.16	Contractor Quality Control Test Results.....	16
5.17	Engineer’s Laboratory and Equipment.....	16
5.18	Survey Equipment for Engineer.....	16
5.19	Quality Assurance.....	16

Part-II – Technical Provisions

5.20	Contractor’s Equipment	16
5.21	Method Statements.....	17
6	PUPMPS AND MORTORS.....	18
6.1	Pumps for Raw Water Pumping Station	18
6.2	Pumps for Brine Water Pumping Station.....	18
6.3	Motors	19
6.4	Motor Control Center (MCC).....	19
6.5	Diesel Generators.....	19

1 - GENERAL

1.1 Mobilization for Construction of the Works

The Contractor shall mobilize all resources as required for construction of Works according to Contract Provisions. The major items of mobilization are listed and described hereof are for illustration. The Contractor shall make his own assessment for provision and maintenance of mobilization and demobilization requirements and shall ensure their availability to the satisfaction of the Engineer.

- (a) Mobilization of Contractor's plant to the Site.
- (b) Mobilization of Contractor's personnel and labor at the Site.
- (c) Provision of camps.
- (d) Provision of such administrative and field offices, as the Contractor considers necessary for his organization.
- (e) Provision of workshops, warehouses, sheds, and storage yards required by the Contractor for the proper and sufficient execution of the Works.
- (f) Arrangements for supply of water for use in construction, including installation of the necessary wells, pumps, pipes, storage tanks, and suitable arrangements for the delivery of water at the various points of requirement.
- (g) Maintenance of temporary site facilities provided by the Contractor for performance in connection with the Contract.
- (h) Demobilization on completion of Contract.

The Contractor shall submit in advance for approval of Engineer his plans for mobilization and demobilization giving full details of resources, manpower and equipment involved.

1.2 Shipment of Contractor's Plant and Equipment to Site

The Contractor shall be responsible for the shipment of plant, equipment and machinery required for the execution of the Work to the specified Site within the specified time.

1.3 Provision of Camps

The Contractor shall provide such camps as are required for the proper and efficient progress of the work to house his own employees and to provide such Site office facilities for use of the Engineer and Employer as specified elsewhere in the Specifications. On the completion of the Contract, the Contractor shall remove the said camps and facilities and reinstate the camp area to the satisfaction of Engineer.

The Contractor's camps shall comply with the rules of the Pakistan Labour Camp Rules, 1960, 2001 issued by the Pakistan Health, Welfare and Local Government Department and the requirements therein set forth. The said rules are available with the Employer's Representative.

1.4 Provision of Contractor's Office

The Contractor shall provide such administrative and field offices as the Contractor considers necessary for his organization.

1.5 *Latrines*

The Contractor shall provide throughout the period of construction of the Works and shall maintain and cleanse sufficient latrines for the use by his employees. He shall ensure that his employees do not foul the Site but make use of the latrines.

1.6 *Provision of Contractor's Workshops, Warehouses etc.*

The Contractor shall provide workshops, warehouses, shades, and storage yards required by the Contractor for the proper and sufficient execution of the Works.

The Contractor shall provide, maintain, operate such temporary buildings as his staff quarters, stores, workshops, labour camps and other temporary buildings necessary for the execution of the Works at the place the Employer will provide. The Contractor shall submit site plans and general particulars of the prescribed buildings to the Engineer for his approval within the prescribed period. The construction of the buildings shall not be started until his proposals have been finally approved by the Engineer.

The Contractor's staff quarters and labour camps shall be provided with all necessary services for drainage, lighting, roads, paths, parking places, fencing, sanitation, cook-houses, fire prevention and fire fighting equipment.

The Contractor shall also provide an adequate water supply system to the Contractor's office, his staff quarters, labour camps, workshops and other places of the Work on the Site. The Contractor shall make his own arrangements for electricity supply to the Contractor's office, his quarters, labour camp, workshop and stores.

1.7 *Provision of Power Supply to offices, Facilities, Workshops, Camps etc.*

The Contractor shall make his own arrangements for the supply of electric power for the purpose of the Contract.

1.8 *Supply of Water for Construction*

The Contractor will be required to furnish water for all aspects of construction

1.9 *All other Items of Mobilization not Specifically Stated*

Provision of such roads and others works as may be deemed necessary by the Contractor for the proper execution of the works.

1.10 *Maintenance of Site Facilities of Contractor*

The Contractor shall arrange service for all of his mobilization works, fixtures and equipment including provision of all water, electricity and sewerage and refuse disposal services, until the end of the maintenance Period. The Contractor shall replenish consumable items as and when required. At the end of Maintenance Period, the contractor shall remove his camp and facilities and reinstate the camp area to the satisfaction of Engineer.

1.11 *Measurement and Payment*

No separate payment shall be made for complying with any other provisions of this chapter except where otherwise detailed in the Bill of Quantities.

1.12 Provisional Sum

Where in the Bill of Quantities, there is an item having the words “Prov. Sum” in the unit column which means a sum included in the Contract for the execution of any part of the Works or for the supply of goods, materials, Plant or services or for contingencies, which sum may be used in whole or in part or not at all on the instructions of the Engineer. The Contractor shall be entitled to only such amounts in respect of Work, supply or contingencies to which such Provisional Sum relate as the Engineer shall determine on the production of quotations, invoices, vouchers and accounts or receipts by the Contractor in connection with expenditure in respect of Provisional Sums. The Engineer shall notify the Contractor of any such determination with a copy to the Employer.

2 - THE SITE

2.1 *General*

The Site shall be that area as defined as supply installation of pumps for Raw & Brine water Pumping Stations at LBOD Spinal Drain at RD 364 and Rd 362, Located Near Ahori Bridge on LBOD Spinal Drain at RD 362. Road from Jhudo to Nabisar located in Taluka Jhudo. Right of way for access to the Works from existing roads shall be provided by the Contractor through his own arrangements. The Contractor shall make his own investigations of the condition of available public or private roads and of clearance, restrictions, bridge load limits and other limitation that affect or may affect transportation and ingress at the job sites, and shall bear all responsibilities in that respect.

2.2 *Use of Land for Construction Facilities*

The Contractor shall make his arrangements at his own cost to acquire land for field offices, construction plant, storage yards, and other facilities required for construction operations under the Contract.

The location, construction, maintenance and operation, of the Contractor's construction facilities shall be subject to the approval of the Engineer.

2.3 *Access to the Works*

Before the commencement of any part of the Works the Contractor shall make temporary access tracks including all necessary temporary diversions and bridge works to the part of the Site concerned, both for the Contractor's own access and for the maintenance of public access, all to the approval of the Engineer. The Contractor shall maintain such access tracks in a condition suitable for the safe and easy passage of plant, vehicles, and pedestrians until these tracks are no longer required for the purposes of the Contract. Other contractors employed upon the Project may use such access. The Contractor shall pay particular attention to the maintenance of existing irrigation channels and watercourses.

The Contractor shall make a record to be agreed by the Engineer of the condition of the surfaces of any private lands or any public cultivated or maintained lands over which access for the Site lies before use for access and he shall keep such surfaces in a reasonable state of cleanliness and repair during the execution of the Works. On the termination of the Contractor's use of such access he shall restore the surfaces to a condition at least equal to that obtaining before his first entry on them.

The Employer will provide assistance where the contractor encounters any difficulties in establishing a right of way to the works from existing roads.

2.4 *Roadways Crossings*

Where channels cross roads or tracks, these shall be kept open or temporary diversion roads must be constructed. Construction of temporary diversions and reinstatement of roads and tracks shall be in accordance with the provisions of the Contract.

2.5 *Damage to Canal and Drain Banks and Operating Roads*

The Contractor shall limit his loads, speeds, and hauling operations over the existing roads so as to minimize damage to other existing facilities. Ruts and scars resulting from the Contractor's operations shall be removed and any damage to canal embankments shall be promptly corrected to the satisfaction of the Engineer.

2.6 Site Operations

(i) General

The Site may be located through and adjacent to tracts of improved property. Where the channel access to the Works are adjacent to, cross, or disturb improvements such as gardens, trees, irrigation and drainage facilities, crops and cultivated fields, the Contractor shall conduct his operations so as to minimize disturbance to or destruction of improvements, crops or property and to interfere as little as possible with the operations of cultivators.

(ii) Restoration of Disturbed Lands within Right of Way

The Contractor shall be responsible for restoring the surface of the lands disturbed by the Work within the right of way as close as possible to the original condition as found, to the satisfaction of the Engineer. Upon the Contractor's application the Engineer will agree a schedule of conditions before the Contractor's entry.

Except as otherwise provided for the disposal of excavated materials, and for the settlement of crop damage claims, the cost of all work described in this section, shall be included in the relevant section of the Bill of Quantities.

2.7 Utilities, Transmission and Telephone Lines

The locations of utility, transmission and telephone lines are shown on the layout drawings insofar as the information is available or as field surveys have been completed at time of bidding. The Contractor shall exercise due care during construction to ensure that no damage is done to such lines. The Employer is responsible for providing the reference data required for buried utility locations. The Employer will indemnify the Contractor against all claims for damages and the costs of repairs to the utility, transmission and telephone lines arising out of the Contractor's operations, excluding any claims arising from willful damage or negligence by the Contractor.

2.8 Grazing Livestock

The Contractor shall provide reasonable care by hiring watchmen to ensure that livestock are not allowed within the construction right of way during operations but he will not be responsible under this Contract for any damages, injury or death of livestock resulting from the construction operations.

2.9 Safety

High standards of safety for men and machines must be observed at all times. Contractors shall comply with existing Pakistani laws.

Men working in trenches shall be protected from cave-ins by sloping the trench sides or by proper trench shoring; men should not work alone in trenches.

Moving parts of the machines shall be protected by proper guards. Casual observers shall not be permitted close to excavating operations.

2.10 Clearance of Site

The Contractor shall clear the Site to the extent required by the Engineer for checking setting-out. The Contractor shall also clear the parts of the Site to be occupied by the Works of all vegetation and artificial obstructions.

The Contractor shall fill and make good with appropriate material those cavities and losses of soil which result from clearing for setting-out as specified in this Clause. The material arising from such clearance shall be removed from the Site and disposed of by the Contractor.

The Contractor shall make periodic clearance of vegetation as is necessary to preserve the amenity and appearance of the neighborhood of the Site.

2.11 Condition of Site

The Contractor shall maintain the Site in a neat, tidy and healthy condition and free from accumulation of waste or rubbish.

2.12 Disposal of Waste Materials

(i) General

Waste materials including, but not restricted to, refuse, garbage, sanitary wastes, industrial wastes, and oil and other petroleum products shall be disposed of by the Contractor. Disposal of waste materials shall be by burying, where burial of such materials is approved by the Engineer; by burning where burning of such materials is permitted in accordance with local laws; or by removal from the construction area.

(ii) Disposal of Material by Burning

All materials to be burned shall be piled in designated burning areas in such a manner as will cause the least fire hazards. Burning shall be thorough and complete and all charred pieces remaining after burning, except for scattered small pieces, shall be removed from the construction area and disposed of. The Contractor shall, at all times, take special precautions to prevent fire from spreading beyond the piles being burned and shall be liable for any damage caused by his burning operations.

(iii) Disposal of Material by Removal

Disposal of material by removal from the construction area shall be accomplished prior to the completion of any section of the Works. All materials removed except trees, shall become the property of the Contractor. Materials to be disposed of by dumping shall be hauled to an approved dump. It shall be the responsibility of the Contractor to make any necessary arrangements.

(iv) Disposal of Trees

Trees and bushes cleared from the construction area shall be placed at the edge of the construction area or right of way. The Employer shall arrange the use and disposal of the wood. Where large trees are to be removed then the Engineer will determine how the trees are to be cut and removed and at the same time try not to impede the progress of the Works. All trees, tree roots and bushes not required by the Employer will be burned or removed from the Construction area at the Contractor's expense.

2.13 Prevention of Pollution

(i) Landscape Preservation

The Contractor shall exercise care to preserve 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 work.

(ii) Prevention of Water Pollution

The Contractor shall comply with applicable regulations concerning the control and abatement of water pollution.

The Contractor's construction activities shall be performed by methods that will prevent entrance, or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into flowing streams, flowing or dry watercourses, lakes and underground water sources; sanitary wastes shall be disposed of on land by burial at approved sites or by other approved methods.

2.14 *Preservation of Historical and Archeological Findings and Graveyards*

The Contractor agrees that should he or any of his employees and subcontractors in the performance of the Contract discover evidence of possible scientific, Pre-historical, historical, or archeological materials, he will notify the Engineer immediately in writing giving the location and nature of the findings. Where appropriate by reason of a discovery, the Engineer may order delays in the time of performance and/or changes in the Work.

The Contractor shall not trespass, excavate in or otherwise disturb graveyards whether shown on Drawings or not. In the case of unidentified graveyards or burial sites, the Contractor shall notify the Engineer in writing and the Engineer shall make such design changes as required.

2.15 *Measurement and Payment*

No separate payment shall be made for complying with the requirements of this chapter except where otherwise detailed in the Bill of Quantities.

3 - MATERIALS AND WORKMANSHIP

3.1 *Sampling and Testing*

The Contractor shall keep records of all tests he conducts in compliance with Specifications, or as required by the Engineer and shall submit copies of the results of such tests to the Engineer when required.

Tests required by the Engineer may be carried out at the laboratory nominated by the Engineer at the Contractor's expense.

Samples required for tests in the nominated laboratory shall be supplied and delivered by the Contractor in appropriate containers, suitably packed and labeled.

The Contractor shall provide for the approval of the Engineer samples of all construction materials and manufactured items required for the Works, if ordered. All samples rejected by the Engineer shall be removed from the Site. All approved items shall be stored on the Site by the Contractor for the duration of the Contract under conditions, which will prevent deterioration of the approved sample. Any materials or manufactured items subsequently delivered to the Site for incorporation in the Works shall be at least equal to the approved sample.

With regard to sampling, testing and the costs thereof, nothing in the foregoing shall be deemed to derogate from the responsibilities placed on the Contractor.

The Contractor shall, when required by the Engineer, provide suitable assistants for use in the supervision of the construction of the Works and these assistants shall be available to help carry out sampling and testing of materials and workmanship. The Engineer will notify the Contractor of his requirements in this respect at least one (1) day in advance. The Contractor shall provide the Engineer with a list of staff he proposes to use and details of their qualifications and experience. The Engineer may reject any or all of the nominated staff.

3.2 *Concrete Sampling and Testing*

The Contractor shall be responsible for providing samples of concrete and its constituent materials either for testing by himself or on behalf of the Engineer for testing at a nominated laboratory. Samples may also be taken by the Engineer for testing under the Contract at a nominated laboratory. Concrete test cubes, which shall be made in accordance with BS 1881 part 116/ASTM C-31 and C-39, shall be deemed to be sampled for the purpose of this Clause. All sampling of constituent materials shall be carried out in accordance with the provisions of the appropriate British / ASTM Standard, and all sampling of fresh and hardened concrete shall be carried out in accordance with the provisions of BS 1881/ASTM C-172 unless such provision is at variance with the Specifications. Details of all such samples shall be recorded by the Contractor and passed to the Engineer. The frequency with which such samples are to be delivered to the laboratory will be given by the Engineer in the form of a sampling plan. The Engineer will make available to the Contractor the results of each test carried out on the samples provided.

The tests, which the Contractor is required to undertake himself on behalf of the Engineer, are those to be carried out on fresh concrete at the place of final deposit, or elsewhere in the Site as directed by the Engineer. These tests comprise slump test to BS 1881, part 102/ASTM C-143. The frequency with which these tests are carried out shall be as directed by the Engineer in the form of a testing plan.

The Contractor shall also test aggregates for moisture content and so determine the water/ cement ratio of the fresh concrete. Determinations of water/cement ratio shall be carried out as required by the Engineer and the results and calculations submitted to him.

Technical Specifications

The Contractor shall until the Maintenance Period (or such earlier date as directed by the Engineer) supply, service and operate the necessary apparatus for sampling concrete and its constituent materials in accordance with the requirements and for slump tests on fresh concrete as described above.

Sampling of fresh concrete for concrete test cubes shall be carried out whenever possible, at the place of deposition in the Works. From each such sample three (3) such cubes shall be made. Each cube shall be marked indelibly for identification when it is in the mould. After retention at the place where they are made for 24 hours, the cubes shall be delivered to the nominated laboratory for removal from their moulds, curing and testing. Moulds shall be returned to the Contractor for reuse. Sampling fresh concrete for such cubes shall be carried out by the Contractor in accordance with a sampling plan drawn up by the Engineer in accordance with the following principles.

The frequency of sampling for each class of concrete from each batching centre in each active day to be at a rate of:

- (a) One sample from one batch of every 10 batches; or
- (b) One sample per 350 cubic feet of concrete; or
- (c) One sample;

Whichever involves the greatest number of samples? Where more than 700 cubic feet from one batching centre is placed in one location in one day, the rate of sampling may be decreased, with the approval of the Engineer to one sample from one batch of every 20 batches or one sample per 700 cubic feet of concrete, whichever involves the greatest number of samples. The actual rate of sampling may vary to the approval of the Engineer according to the random selection of batches to be sampled and shall be increased when ordered by the Engineer in appropriate circumstances.

In addition to his other duties in connection with the sampling and testing of concrete, the Contractor shall provide the instruments for, and record the temperatures of the concrete and concrete materials, as required by the Engineer and copies of such records shall be supplied to the Engineer.

3.3 *Tests and Testing Equipment*

The following tests will be carried out in the Engineer's nominated laboratory as required under the Contract or ordered by the Engineer. The Contractor shall provide samples for the tests. Equipment to carry out these tests shall be repaired as necessary by the Contractor, or provided to the Engineer's nominated laboratory by the Contractor, as required and ordered by the Engineer. The Contractor shall service the equipment as required and as ordered by the Engineer for the duration of the Contract.

(a) Soil and Earthwork Testing

(The number in brackets refer to the tests as specified in BS or ASTM standards)

- (i) Determination of the Moisture Content:
(BS 1377: Part 2: 1990: 3);
(ASTM: D 2216-98) (ASTM C 566)
- (ii) Determination of Atterburg Limits:
(BS 1377: Part 2: 1990: Clauses 4 and 5);
(ASTM: D 423 - 63; ASTM: D424 - 59).

Technical Specifications

- (iii) Determination of the Particle Size Distribution - (Wet/Dry Sieving as appropriate):
(BS 1377: Part 2: 1990: Clause 9.2/9.3);
(ASTM: D422 - 63), (ASTM C 136).
- (iv) Standard Proctor Compaction Test/ Using modified effort
(BS 1377: Part 4: 1990: Clause 3);
(ASTM D 1557).
- (v) Determination of the Dry Density of soil on site:
Sand Replacement Method:
(BS 1377: Part 9: 1990: Clause 2.1 or Clause 2.2);
(ASTM D 1556), (ASTM D 1558). Core Cutter Method:
(BS 1377: Part 9: 1990: Clause 2.4).
- (b) Concrete Testing
(the number in brackets refer to the tests as specified in BS or ASTM standards)
 - (i) Aggregate moisture tests for determination of Water Cement Ratio:
(ASTM: C 566 - 78).
 - (ii) Slump test: (BS 1881: Part 102); (ASTM: C 143 - 78).
 - (iii) Compacting factor test: (BS 1881: Part 103).
 - (iv) Making and curing test cubes/cylinders: (BS 1881: Parts 108 and 111); (ASTM: C192-81; C31-69) and (ASTM C 617).
 - (v) Compression testing of test cubes/cylinders
(BS 1881: Parts 115 and 116);
(ASTM: C39-81).
 - (vi) Obtaining and drilling of cores: (ASTM C 42).
- (c) Cement Testing
(The number in brackets refer to the tests as specified in BS or ASTM standards)
 - (i) Compressive strength (mortar cubes): (BS 4550: Part 3: Section 3.4)
(ASTM C 348 and C 349).
 - (ii) Effect of Organic Impurities in Fine Aggregate on Strength of Mortar:
(ASTM: C87-69)
(ASTM C 40).
- (d) Fine and Coarse Aggregate Testing
(the number in brackets refer to the tests as specified in BS or ASTM standards)
 - (i) Flakiness index: (BS 812: Section 105.1).
 - (ii) Elongation index: (BS 812: Part 1: Para. 7.4).
 - (iii) Particle size and grading: (BS 812: Part 103); (ASTM: C 136 - 82).

Technical Specifications

- (iv) Silt content by field settling test: (BS 812: Part 1: Para. 7.2);
(ASTM: C117-95).
 - (v) Aggregate impact value: (BS 812: Part 3: Para. 6).
 - (vi) Aggregate crushing value: (BS 812: Part 3: Para. 7).
(ASTM: C -131).
 - (vii) 10% fines value: (BS 812: Part 3: Para. 8).
 - (viii) Soluble sulphates: 0.4% maximum of each aggregate proposed
 - (ix) Chloride content: (BS 812: Part 4).
- (e) Water Testing
- (i) Total dissolved solids and electrical conductivity
(BS 3148-80)
(ASTM D 586)
(Earth Manual E8).
 - (ii) Sulphate content:
(BS 1377: Part 3: 1990: Section 5).
 - (iii) Chloride content:
(BS 812, Part 4).

3.4 Measurement and Payment

No separate payment will be made for complying with the provision of Clause 4.1, 4.2 and 4.3 (a to e) of the specifications.

Except where otherwise provided for in the Bill of Quantities no separate payment shall be made, interalia, contractor shall provided certificate of all material to be supplied from Laboratory acceptable to the Engineer. No payment shall be made against supply of any material until it is install and commissioned.

For tests on materials for incorporation in the Works or tests on the Works, no payment shall be made for delivery of any sample to a laboratory nominated by the Engineer if such sample or test shall fail to meet the requirements of the Specification, where such test is ordered or normally required to demonstrate compliance with the Specification.

For tests on materials before selection and approval of sources of materials for incorporation in the Works and for trials of Constructional Plant and methods of working for approval for use in constructing the Works including tests for resulting workmanship where not provided for in the Bill of Quantities, no separate payment shall be made.

4 - CARE AND HANDLING OF WATER

4.1 *General*

The Employer does not guarantee or describe completely the conditions, which may be encountered in performing the Works. The Contractor must assume all responsibility for any conclusions, which he may derive from any information provided. The Contractor should also inspect and examine the site and its surroundings to collect all the pertinent information in this regard.

4.2 *Scope of Work*

The Works to be done under care and handling of water, consist of the following:

- Protecting all Works from damage by groundwater, rains and surface runoff during the entire construction period.
- Maintaining regular irrigation supplies during the period of construction of the Works.
- Dewatering foundations and care of water to maintain all excavations and surfaces dry free of water as required for the proper construction of the Works.

4.3 *Protection of Works*

The Contractor's proposals for protecting works constructed under the Contract from damage by flooding or otherwise shall be submitted to the Engineer, but such submission shall not in any way absolve the Contractor from responsibility for any damage, which may be incurred subsequently.

4.4 *Maintaining Drainage System*

The Contractor shall neither interrupt nor interfere with natural drainage system of the area for any reason or purpose without the written approval of the Engineer.

4.5 *Plans to be approved by the Engineer*

Prior to beginning of construction of any protection or diversion works, the Contractor shall submit for approval of the Engineer his proposed plan for each protection and diversion work including all design features of the channels and other facilities. The plan may be placed in operation upon approval but nothing in the Contract Documents shall relieve the Contractor from full responsible for and shall repair at his own expenses any damage to the foundations, or any other part of the Works caused by floods, water or failure of any part of the protection works.

The Contractor shall furnish all labour, equipment and materials for constructing and maintaining all necessary bunds, channels, diversions, sumps, and other temporary protection. All such temporary protection and diversion works shall be removed or left and graded and so as not to interfere in any way with the operation or usefulness of the completed works.

4.6 *Measurement and Payment*

No separate payment shall be made for complying with all provisions of the chapter except where otherwise detailed in the Bill of Quantities.

5 - QUALITY CONTROL AND QUALITY ASSURANCE

SCOPE OF WORK

5.1 General

The Contractor shall be responsible for providing all Quality Control measures to ensure compliance of the Works with the Drawings or as stated in the Bidding Documents.

The Engineer may perform activities such as surveying quantity measurements materials testing, as are necessary to verify the quality, accuracy and quantity of the completed Works.

Construction shall not be undertaken without the Engineer's approval and no payments will be made to the Contractor for quantities of construction works which are not accepted by the Engineer.

CONTRACTOR'S QUALITY CONTROL PLAN

5.2 General

The Contractor Quality Control Plan shall include a detailed description of the organization, procedures and facilities proposed to ensure that the construction is carried out in accordance with the Specifications and Drawings. This plan shall be applicable to work performed by any sub-contractor.

The Quality Control Plan shall include, but not be limited to detailed procedures, instructions or statements covering the following items.

The Contractor shall submit his Quality Control Plan to the engineer with sufficient time for review and approval prior to the commencement of work. The Contractor's Quality Control Plan shall be periodically reviewed as the work proceeds.

5.3 Organization

The quality Control Plan shall describe the Contractor's organization and delineate the responsibility and authority of the various personnel and groups involved. The Quality Control Department's internal structure and relationship with other departments shall be defined. An organizational chart shall be prepared showing lines of authority and communication.

5.4 Personnel

The Contractor shall supply properly trained and qualified personnel to procure samples for testing, to conduct tests and analyze samples of soils, concrete, and other construction materials. The Contractor shall provide for the duration of the Contract, competent, suitably qualified engineers whose sole duties shall consist of material location, testing and control in accordance with the Specifications.

The Contractor shall supply properly trained and qualified personnel to prepare construction drawings as required. Drawings, when prepared by the Contractor, will include all information and data required for preparation by the engineer of As-Built Drawings. The Contractor shall provide properly trained and qualified surveyor and survey crews and all necessary survey equipment as may be required to perform all construction survey activities, measurement of quantities, and for any surveys required for preparation by the Engineer of As-Built Drawings.

The above personnel will be subject to approval by the Engineer.

Technical Specifications

The Contractor shall provide labour, equipment and materials to the Engineer for examining measuring and testing any works.

5.5 Document Control

The Quality Control Plan shall assure that the Specification requirements are correctly translated into and included in the Contractor's procedures, documents and drawings. The Plan shall further assure that the latest approved documents, including changes, are available to and use by the required manufacturing, inspection and test personnel.

5.6 Source Approval

The Contractor shall obtain source approval of all materials prior to their use in the Work. Source approval submittals shall include the name and address of all manufactures and suppliers, recent test results showing complete compliance with the Specifications specified standards, the date of manufacture, storage conditions and shelf life if appropriate. In addition the Contractor shall provide representative samples of the material of a sufficient size that the engineer may perform all specified tests. Once source approval has been granted by the Engineer all deliveries of the material to the site must in turn be submitted for approval accompanied by all relevant test reports to show full compliance of the material with the Specifications.

Where the required tests cannot be performed at the site Quality Control Laboratory then the Contractor shall arrange for independence testing, at a laboratory approved by the Engineer, to be performed to show that the material complies with the Specified standards Cost of such testing will not be reimbursed.

The Contractor's procurement process shall assure that purchased items comply with the requirements of the Specifications.

5.7 Processed Material Control

The Quality Control Plan shall provide assurance that procured and subsequently processed material complies with the Specifications. Material identification shall be provided and maintained. Control shall be provided for the documentation and disposal of no-conforming material, and their subsequent rework or repair and re-inspection. The programme shall also provide for the prior notification to be Engineer of proposed rework or repair or non-conformance for his evaluation and approval.

5.8 Special Processes

Special Processes such as sandblasting, installation of elastomeric sealant, welding, etc., shall be performed in accordance with documented process procedures and by qualified personnel. The procedure shall describe the process sequence and methods, process prerequisites, equipments, qualification of personnel and equipments, and acceptance criteria. The [procedure shall describe the preparation and retention of documents used to record the results of special Processes.

5.9 Inspection

The Quality Control shall provide for the inspection of activities and completed items of work by the Contractor to assure compliance with the Specifications prior its submittal to the Engineer. Examination or measurements shall be performed at each applicable work operation. The Contractors inspection shall be performed by qualified individuals other than those who performed the activities being examined

5.10 Calibration

Procedures shall be established to assure that tests and measuring devices used to test, or accept materials or components are calibrated at specified intervals to maintain the proper accuracy. Devices use shall be of a proper range, type and sensitivity to reliably measure the parameters being evaluated. The calibration of such devices shall be documented and shall be performed using certified measurement standards, and submitted to the Engineer for approval.

5.11 Documentation

The Quality Plan shall include a system to ensure that the documentation necessary to attest the completion of any phase of the work, use of correct materials, completion of required inspections and tests, and acceptability of results is generated, reviewed, maintained and submitted to the Engineer at the required time. The system shall ensure that such documentation is reviewed by the Contractors for legibility, completeness, validity of data traceability of document to activity or equipments.

The documentations to be issued and maintained shall include.

- i) Test reports for raw material (cement, steel, aggregates etc).
- ii) Survey and layout procedures
- iii) Inspection and test procedures
- iv) Inspection and test reports
- v) Final Inspection Reports
- vi) Weld and weld repair procedures

5.12 Submittal of Contractor's documents

The Contractor shall submit a draft of the Quality Control Plan for review by the engineer within 28 days of the Engineer's Notice to Commence. The final version shall be submitted within 28 days of receipt of the Engineer's comments.

The Contractors quality Control Plan shall be periodically reviewed and revised as the work proceeds.

CONTRACTOR'S QUALITY CONTROL TEST PROGRAMME

5.13 General

The Contractor shall submit his Quality Control Test Programme to the Engineer for review and approval prior to the commencement of work. The contractor's Test Programme shall be suitably documented to assure that the required materials and component testing is properly performed. The test programme shall address pertinent test prerequisites, such as test instrumentation selection and calibration, acceptance criteria, documentation of test results, and evaluation of test results by qualified personnel. The Quality Control Test Programme shall include, but not be limited to, location of facilities, type, number and capacity of equipment, plant layout drawings, staff, vehicles and procedures.

The Contractor shall ensure that the proper number and types of samples are obtained, identify the tests and analyses required, and ensure that the tests and analyses conducted are in accordance with accepted procedures and standards. The Engineer shall be invited to be present during the test or inspection. If the Engineer decides not to be present the work may proceed. The Engineer will supervise as necessary tests performed by the Contractor both in the field and in the Contractor's laboratories. The Engineer may himself perform such independent tests and analyses as are necessary to verify the results of all tests and analyses conducted by the Contractor. The Engineer may request retesting by the Contractor of any material when and wherever required supervised by the Engineer.

5.14 Quality Control Testing Facilities

As a part of the construction materials' Quality Control Programme, the Contractor shall set up laboratories in full working order suitably equipped and staffed to carry out the sampling and testing to the extent and frequency necessary to ascertain that the work complies with the Specifications. The Contractor's laboratories shall include sufficient office space and furniture for the Engineer's supervisory personnel. A testing facility shall be erected at each concrete batching plant capable of performing all routine aggregate tests and sampling of constituents and concrete.

5.15 Engineer's Laboratory Equipment

The Contractor shall maintain all essential Laboratory Equipment and chemicals including consumable items in his Laboratories to fulfill the testing requirements. The equipments shall be new, unused, and to the approval of the Engineer.

5.16 Contractor Quality Control Test Results

All test results from the field and laboratories conducted as part of the Quality Control procedure shall be submitted to the Engineer. The test results show full compliance with the Specifications, in order for the Works to be approved. The materials and test reports submitted to the Engineer shall include, but shall not be limited to the following

- i) Soil reports showing location, materials source, materials type, density, moisture content, density-moisture content relationship.
- ii) Concrete reports showing source of all constituents, testing of source material, date of manufacture, testing of material after processing, including determination of moisture content of aggregates, qualities, pour records and testing of manufactured concrete. Certification of all admixtures, cement supplies and storage records.
- iii) Ancillary reports for materials such as steel, electrometric bearings, jointing compounds, paints, etc, showing name of source date of manufacture, shall life storage conditions, place of storage, test results showing compliance with the Specifications, and placing records.

5.17 Engineer's Laboratory and Equipment

In addition to the Engineer's Laboratories, which will be air conditioned and having facilities for carrying out the Contractor shall supply Laboratory equipments for the Engineer's laboratory. Water Supply, Power, and sanitation are included. The Contractor shall also be responsible to maintain the laboratory building and equipment in working condition throughout the Contract period. The Contractor shall submit to the Engineer for approval a complete list of all essential equipment alongwith the name of the manufacturer. All equipment shall be new and unused. Final approval of the equipment shall only be granted on delivery and inspection of each item at the Engineer laboratory.

5.18 Survey Equipment for Engineer

The Contractor shall supply and maintain during the course of the Contract survey equipments for use of the Engineer. The Contractor shall submit for the approval of the Engineer prior purchase a list of all survey equipment including details of make and model. The equipment shall be new and final approval shall only be granted on delivery and inspection of each item.

5.19 Quality Assurance

The Contractor will submit with his Quality Control Plan a Programme of procedures, materials submittals, approved staff and equipment in order to allow the Engineer to run a quality assurance programme.

Each activity/ materials/equipment/staff will have to be identified in each of the procedures applicable to the Works. The list of procedures will then expand along with the Works. In this respect the Contractor should note also the requirement for submittals.

SUBMITTALS

5.20 Contractor's Equipment

Contractor will re-submit his equipment list from the Tender documents, giving details for each phase of the work. Equipment list shall match his technical proposal, construction schedule and cash flow.

5.21 Method Statements

Within 30 days before starting any aspect of the Works, the Contractor shall submit to the Engineer for approval detailed method statements describing complete details of the operation including plant, equipment, materials, testing, personnel, schedule and organization. The work items requiring submission of method statements shall include, but not be limited to the following:

- setting out the works
- care of water
- surveying
- transport and placing of equipment to site
- furnishing and installing of pumps and motors.

6 PUMPS AND MORTORS

6.1 *Pumps for Raw Water Pumping Station*

Providing, installing, testing & commissioning of Vertical Shaft Pumps including drive coupling, foundation block, vertical shaft, pump base, nuts bolts, painting/coatings and other accessories, complete in all respects. Suitable for discharge of 25 cusec against head of 27 ft can with stand to pump water upto 10,000 TDS (SS-316 L material)

Efficiency of pump should not be less than 70% at design point.

Shutoff head should also be clearly identified through the H-Q performance curves. All these curves H-Q with efficiency should be submitted with the pump.

The pump should be supplied with & pump nameplate easy to read and corrosion resistance containing complete pump information including pump manufacture name, serial number, pump model number, number of stages, speed, total dynamic head and discharge in m³/h or liters/sec the middle point design year of manufacturing etc.

Suction strainers should be present with the pump for its protection again debris and other foreign materials.

Factory acceptance test (FAT) should be carried out in detail for these pumps and all the tests shall be carried out as per API 610.

Vendor shall certify in written that material proposed (SS316L) is suitable for TDS up to 11000 ppm.

Supplier shall insure availability of spares & commissioning spares for 2 years.

6.2 *Pumps for Brine Water Pumping Station*

Efficiency of pump should not be less than 70% at design point.

Shutoff head should also be clearly identified through the H-Q performance curves. All these curves H-Q with efficiency should be submitted with the pump.

The pump should be supplied with & pump nameplate easy to read and corrosion resistance containing complete pump information including pump manufacture name, serial number, pump model number, number of stages, speed, total dynamic head and discharge in m³/h or liters/sec the middle point design year of manufacturing etc.

Suction strainers should be present with the pump for its protection again debris and other foreign materials.

Factory acceptance test (FAT) should be carried out in detail for these pumps and all the tests shall be carried out as per API 610.

Proposed (duplex steel material) is suitable TDS up to 22000 ppm .

Supplier shall insure availability of spares & commissioning spares for 2 years.

6.3 Motors

Efficiency of motor should not be less than 85% at design point.

Motors should be supplied with nameplates easy to read and corrosion resistance containing complete motor information including motor manufacturer's names, serial number, rated voltage, rated current, insulation class, IP class, temperature rise in degree centigrade, RPM, year of manufacturing etc.

Factory acceptance test (FAT) should be carried out in detail.

6.4 Motor Control Center (MCC)

Motor control center (MCC) should have provision to go on automatic control connected with control.

Factory acceptance test (FAT) should be carried out in detail.

6.5 Diesel Generators

Specify full scope of supply, including complete spare parts, diesel tank panels, diesel storage of at least 15 days etc.

Factory acceptance test (FAT) should be carried out in details.