



# SHAHEED BB UNIVERSITY, SHERINGAL, DIR UPPER



## REHABILITATION WORKS OF FIRST FLOOR AT FAMILY FLATES AT SHAHEED BENAZIR BHUTTO UNIVERSITY, SHERINGAL DIR UPPER KHYBER PAKHTUNKHWA



### ***BIDDING DOCUMENTS:***

#### **CONTAINS:**

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| Volume-II  | Specifications (Technical Provisions)   |
| Volume-III | Preamble Bill of Quantities   |
| Volume-IV  | Drawings  |

***March, 2020***

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**DIRECTOR OF WORKS  
SHAHEED BENAZIR BHUTTO UNIVERSITY,  
SHERINGAL, DIR UPPER**

**CHECK LIST**

**FOR PREPARATION AND SUBMISSION**  
**OF BIDDING DOCUMENTS**

**SINGLE STAGE TWO ENVELOP BIDDING**

Check List

Preparation and Submission of Bidding Documents

**Single Stage Two Envelop Bidding**

| <b>Ser</b> | <b>Description</b>   | <b>Remarks</b> |
|------------|--|----------------|
| 1.         | Have you carefully studied and signed each page of the bidding document?   | Yes / No       |
| 2.         | Do you certify that Bid Documents have been downloaded from website by yourself, you did not contact any University's/work's personnel other than for site visit before submission of bid?                             | Yes / No       |
| 3.         | Are you eligible to participate in bidding as per NIT and IB-3, PEC Registration No. _____ Category C- _____ Valid upto _____.   | Yes / No       |
| 4.         | Have you visited the site, got requisite information in respect of bid, and submitted the bid for complete scope of work?  | Yes / No       |
| 5.         | Have you submitted Qualification Documents and Technical Proposal in separate envelop as per ITB.  | Yes / No       |
| 6.         | Have you submitted Financial Bid in separate envelop as per ITB.   | Yes / No       |
| 7.         | Have you put both envelops (i-e Technical and Financial) in one envelop, sealed, stamped signed the top as per PPRA Rules, Bid Documents?  | Yes / No       |
| 8.         | Have you attached Bid Security (Original) to Financial Bid and attached certificate of availability in Technical Bid as ITB?   | Yes / No       |
| 9.         | Do you know that your bid shall be valid for 90 days?  | Yes / No       |
| 10.        | Have you properly filled Rates/percentage in specified space in summary of Bill of Quantities, keeping in view detailed BOQ, CSR/MRS Rates, Preamble of BoQ, Conditions of the Contract, Drawings, and Specifications? | Yes / No       |
| 11.        | Do you know that items, quantities of BoQ can be increased, decrease and even deleted during execution and performance of the Contract?  | Yes / No       |
| 12.        | Will you provide performance bond, if contract is awarded to your firm?  | Yes / No       |
| 13.        | Do you know that time for completion of entire works under this bid is six (6) months?   | Yes / No       |
| 14.        | Do you certify that you shall complete the entire works, remedy therein defects in accordance to the BoQ, Specifications, drawings, appendices and Conditions of the Contract in the stipulated time?                  | Yes / No       |
| 15.        | Have you REVISITED University's website on the second last day of submission of bid for updating yourself in respect of bidding?   | Yes / No       |

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# **NOTICE INVITING TENDERS**



# SHAHEED BB UNIVERSITY, SHERINGAL, DIR UPPER



## Notice Inviting Tenders

The Employer (Shaheed Benazir Bhutto University, Sheringal) invites Sealed Bids from eligible firm(s)/person(s) duly registered/licensed by the Pakistan Engineering Council (PEC), Govt. of Pakistan, in Category C-6 or above, for the “**Rehabilitation Work of 1<sup>st</sup> Floor at Family Flats**” under the HEC Recurring account. Bidding is invited on the basis of National Competitive Bidding (NCB) in accordance with PPRA “**Single Stage-Two Envelope Bidding Procedure**” comprising of “**Technical Bids & Financial Bids**”.

### Scope of the Work:

| Name of The Work<br>(Contract Package)  | Estimated Cost<br>(PKR) | Bid Security                 | Completion<br>Time |
|---|-------------------------|------------------------------|--------------------|
| Rehabilitation Work of 1 <sup>st</sup> floor at Family Flats at Shaheed Benazir Bhutto University, Sheringal, Dir Upper | 8.379 Million           | (2 % of the Bid Price) (PKR) | 06 Months          |

### List of Documents/Credentials to be submitted:

Interested firms are required to furnish, duly signed and stamped all the pages of Volumes I, II, & IV binded and attached in Technical Bid along with the following information positively as contained in their company brochure etc.

- Complete company profile (name and address of company and branch office (s) if any, status of the firm i.e., proprietorship or partnership or limited company with name of the principal persons(s) etc.
- Organizational set up and list of full time technical and supervisory staff along with their CVs.
- Valid Registration Certificate as Constructor with PEC in Category C-6 or above.
- Experience record regarding in hands and previous contracts (completed & ongoing works)
- Details of machinery and Equipment.
- Banker's Certificate of Financial standing & accounts statements.
- Last 03 years Audited Financial Statements from a Chartered Accountancy firm up to 30.06.2019.
- Original affidavit on stamp paper about current & past litigations and proof of non-blacklisting.
- NTN registration and all registration copies.
- Any other relevant information to facilitate in decision making.

### Terms & Conditions:

1. The detailed terms & conditions have been set forth in Bid Documents (**Volumes -I, II, III & IV**).
2. A complete set of Bidding Documents (Volume I, II, III & IV) can be downloaded free of cost from official website of Shaheed Benazir Bhutto University, Sheringal, Dir Upper [www.sbbu.edu.pk](http://www.sbbu.edu.pk). The last date for

submission of bids complete in all respects is \_\_\_\_\_ up to 1100 hours and should reach to the office of the Director of Works, Shaheed Benazir Bhutto University, Sheringal. Bids shall be opened by the Bid Evaluation Committee at 1130 hrs of the same day in the presence of Bidder's representatives who choose to attend, at Committee Room, Guest House, Shaheed BB University, Sheringal, Dir Upper.

3. Following guidelines must be noted:

- Both "Technical Bids" and "Financial Bids" must be submitted in two separate sealed inner envelopes marked "**1-Technical Bids**" and "**2-Financial Bids**" which should be packed in one outer envelope. **The Bid Security should be enclosed with "Financial Bids", however bidder will ensure in writing in the Technical Bids that 2% Bid Security of the quoted cost is attached in financial bid.**
  - "Technical Bids" will be opened immediately after deadline for submission of bids in the presence of bidder / bidders' representatives who choose to attend while the "Financial Bids" will be opened later-on after the Evaluation of the Technical Bids. "Financial Bids" of only Technically Qualified responsive bidders will be opened, while the Financial Bids of Technically Unqualified bidders will be returned unopened.
  - Conditional, incomplete, unsigned and bids filled with lead pencil are **NOT** allowed.
  - Usage of correction fluids & corrections are strictly prohibited unless duly initiated.
  - The Person (s) whose name (s) exists in Form-H/Partnership Deed shall only be authorized to sign the Tender, BOQ and all other contract documents.
  - Financial/Priced Bidding shall be done on "% above/at par/below on BOQ cost".
4. The bidder who quote more than 10% below on the quoted cost, is required to submit 8% additional Earnest Money/Bid Security with Financial Bid in shape of Call Deposit Receipt(CDR)/Security Deposit Receipt (SDR) or Bank Guarantee from Scheduled Bank, otherwise the bid will be considered as non-responsive
  5. Bidders are essentially required to provide correct and latest postal, email & web address phone /mobile/fax numbers etc. for active & timely communication.
  6. All offers should be valid for 90 (ninety) calendar days from the date of opening.
  7. Sealed Priced/Financial Bids must be accompanied by a Bid Security as mentioned above in the form of Call Deposit Receipt (CDR) /Security Deposit Receipt (SDR)/ Pay Order / Bank Draft from the Scheduled Bank of Pakistan in the name of Treasurer, Shaheed Benazir Bhutto University, Sheringal.
  8. The construction firms providing wrong information are liable to legal action and disqualification.
  9. In case of equal bid amounts among the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> etc, the lowest bidder would be decided through toss/draw by the committee.
  10. All taxes etc shall be deducted from the bills of the contractor/firm/company at prescribed rates notified by the Government from time to time.
  11. Late received bids shall not be entertained.

**Director of Works**

Shaheed BB University, Sheringal Dir Upper



Phone No. (0092-0944-885409. Fax No. 885805.

# **INSTRUCTIONS TO BIDDERS**

## **INSTRUCTIONS TO BIDDERS**

(Note: These Instructions to Bidders (ITB) will not be part of Contract and will cease to have effect once the Contract is signed).

### **A. GENERAL**

#### **IB.1 Scope of Bid & Source of Funds**

##### **1.1 Scope of Bid**

- a) The Vice Chancellor, Shaheed Benazir Bhutto University, Sheringal, Dir Upper (hereinafter called “the Employer”) wishes to invite Bids for the ““Rehabilitation Works of first floor at family flats at Shaheed BB University Sheringal Dir Upper””.
- b) Bidders must quote for the complete scope of work. Any Bid covering partial scope of work will be rejected as non-responsive.

#### **IB.2 Eligible Bidders**

2.1 Bidding is open to all firms and persons meeting the following requirements:

- a) Duly licensed by the Pakistan Engineering Council (PEC) in appropriate category.
- b) Duly enlisted by Pak PWD/ Pakistan Railways /C&W/ PDA/ CDA/ MES/ TMA/ Irrigation/ Public Health Eng. / KPHA/ NHA or any Engineering Department of Federal or Provincial Govt.

##### **2.2 One Bid per Bidder**

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 will be disqualified.

#### **IB.3 Cost of Bidding**

3.1 The bidder shall bear all costs associated with the preparation and submission of its bid and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

##### **3.2 Site Visit**

- a) The bidders are advised to visit and examine the Site of Works and its surroundings and obtain for themselves on their own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. All cost in this respect shall be at the bidder’s own expense.
- b) The bidders and any of their personnel or agents will be granted permission by the Employer to enter upon his premises and lands for the purpose of such inspection, but only upon the express condition that

the bidders, their personnel and agents, will release and indemnify the Employer, his personnel and agents from and against all liability in respect thereof and will be responsible for death or personal injury, loss of or damage to property and any other loss, damage, costs and expenses incurred as a result of such inspection.

- c) The Bidder or his authorized representative shall visit & inspect the Site of the Works including the areas & surroundings to be used for Contractor's Camp, on his own responsibility & at his own expense, & obtain all the information from his own sources, which may be necessary for preparing the Bid. The Employer may assist but will not take any responsibility for the supply or correctness of the information.
- d) The Bidder shall, before submitting his Bid, satisfy himself in all respects including the following:-
  - i. The existing facilities in the vicinity of the Site of Work, the hydrological & climatologically conditions, the form & the nature of the Site of Work.
  - ii. The quantities & nature of the work & materials necessary for completion of the Works.
  - iii. The means of access to the Site of the Work & exit from the Site.
  - iv. The available accommodation on land for Contractor's Camp within or outside the Site of Work.
  - v. All necessary information as to risks, contingencies & other circumstances which may influence or affect the bid.
  - vi. The type & nature of soil existing in area of work
  - vii. The existing conditions of Site.
- e) Each Bidder shall also enquire & satisfy himself as to the source, the quantity of supply, sufficiency of & the means of obtaining & transporting all plant, material, labor, fuel, water, electricity & other matters or things required for in connection with the works.
- f) In preparing the bid, bidders shall also consider his obligation to adequately store all materials & maintain existing facilities & all temporary works during the period of their usage.
- g) The Bidder must make local inquires as to the physical conditions prevailing at the Site & obtain his own information on all matters & things that may in any way influence him in making a Bid & fixing the rates in the Bill of Quantities. He must also satisfy himself as to the risks, obligations & responsibilities to be undertaken in accordance to the Contract to be entered into by him should his Bid be accepted.
- h) The Bidder shall make his own investigations, enquiries & assessments, on all matters, of all conditions of existing constructions at the site & its vicinity to his satisfaction before submitting his Bid.
- i) It is particularly mentioned that the subject work is completion of remaining /balance works, and shall be executed in first floor, where the buildings in ground floor is already functional and under use by the faculty staff members,

hence following steps and precautionary measures shall be especially considered;

- a. Transportation of materials shall be made from external sides, either through lift machine arrangement or manual means; however existing internal stairs of building shall not be used by the contractor.
- b. Debris, rubbish and other unwanted materials collected due to construction, on plinth protection, courtyard, sunshades and surroundings shall be removed by the contractor with-out any payment to the contractor.
- c. High quality of ethics shall be observed by the contractor, its representatives, and labour staff. The contractor shall ensure avoidance human nuisance up to possible extent.

## **B. BIDDING DOCUMENTS**

### **IB.4 Contents of Bidding Documents**

4.1 In addition to Invitation for Bids, the Bidding Documents are those stated below, and should be read in conjunction with any Addendum issued in accordance with Sub-Clause IB.6.1.

1. Instructions to Bidders (ITB).
2. Form of Bid & Schedules to Bid.
3. Preamble and Bill of Quantities.
4. MRS-2019 with detailed description
5. Conditions of Contract & Contract data.
6. Standard Forms & Formats.
7. Specifications. (Special and Technical Provisions)
8. Drawings.

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, bids which are not substantially responsive to the requirements of the Bidding Documents will be rejected.

### **IB.5 Clarification of Bidding Documents**

- 5.1 A prospective bidder requiring any clarification(s) in respect of the Bidding Documents may notify the Engineer/Employer at the Employer's/Engineer's address.
- 5.2 The Engineer/Employer will respond to any request for clarification which it receives earlier than seven (07) Days prior to the deadline for the submission of Bids. Copies of the Engineer/Employer's response will be uploaded on official website of university including a description of the enquiry but without identifying its source.

## **IB.6 Amendment of Bidding Documents**

- 6.1 At any time prior to the deadline for submission of Bids, the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by issuing addendum.
- 6.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 6.1 hereof, and shall be uploaded on official website of university. Prospective bidders should visit University website before submission of bid (i-e second last day/date of submission of bids).
- 6.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer may at its discretion extend the deadline for submission of Bids.

## **C. PREPARATION OF BIDS**

### **IB.7 Language of Bid**

- 7.1 The bid prepared by the bidder, all correspondence and documents relating to the Bid, exchanged by the bidder & the Employer shall be written in the English language, provided that any printed literature furnished by the bidder may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the Bid, the English translation shall govern.

### **IB.8 Documents Comprising the Bid**

- 8.1 The bid prepared by the bidder shall comprise the following components:

#### **(A) Qualification Documents (Technical Proposal) shall comprise;**

- i. Company profile (showing origin, head office, branches, vision, mission, management, directors, personals, and other necessary information);
- ii. Written power of attorney authorizing the signatory of the bid to act for and on behalf of the Bidder;
- iii. Current litigation information;
- iv. Availability of Bank Credit line;
- v. Bank Statements and financial statements duly audited by chartered accountants up to the C.F.Y;
- vi. Experience record regarding in hand and previous contracts;
- vii. Personal, Financial, Equipment capability;
- viii. Status of enlistment with other Govt. Organizations;
- ix. Joint Venture Agreement (if applicable).
- x. Affidavit as the firm is eligible to participate in the bidding and is not black listed.
- xi. Copy of registration with Federal Board of Revenue.
- xii. Certificate that **Bid Security** has been attached to the financial proposal without showing the amount of bid security.

Note: - format for preparation abovementioned documents is available on PEC website (Pre-qualification of constructors).

## **(B) Financial Proposal**

- a. Dully filled-in Form of Bid and Bill of Quantities along with complete set of bidding documents prescribed in sub-clause 4.1;
- b. Original Bid Security;

### **IB.9 Sufficiency of Bid**

- 9.1 Each bidder shall satisfy himself before Bidding as to the correctness and sufficiency of his Bid and of the rates and prices entered in the Bill of Quantities, which rates and prices shall except in so far as it is otherwise expressly provided in the Contract, cover all his obligations under the Contract and all matters and things necessary for the proper completion of the Works.
- 9.2 The bidder is advised to obtain for himself at his own cost and responsibility all information that may be necessary for preparing the bid and entering into a Contract for execution of the Works.

### **IB.10 Bid Prices, Currency of Bid and Payment**

- 10.1 Prices in the Bill of quantities are entered in Pakistani Rupees as per MRS/CSR of Khyber Pakhtunkhwa and shall be paid in Pakistani Rupees (PK. Rs.).
- 10.2 The bidder shall fill up the blank space in the summary of Bill of Quantities indicating in %age (percentage) and correspondence amount,( keeping in view the instructions contained in the Preamble to Bill of Quantities) over the BoQ rates & amounts duly priced on MRS/CSR KP for the Works to be performed under the Contract.
- 10.2 Unless otherwise stipulated in the Conditions of Contract, prices/rates of the priced BoQ and (%age /percentage & correspondence amount,) quoted by the bidder shall remain fixed during the bidder's performance of the Contract and not subject to variation on any account.

### **IB.11 Documents Establishing Bidder's Eligibility and Qualifications**

- 11.1 Pursuant to Clause IB.8, the bidder shall furnish, as part of its bid, documents establishing the bidder's eligibility to bid and its qualifications to perform the Contract if its bid is accepted.
- 11.2 Bidder must possess and provide evidence of its capability and the experience as stipulated in Bidding Data and the Qualification Criteria stipulated in the Bidding Documents.

### **IB.12 Documents Establishing Works' Conformity to Bidding Documents**

- 12.1 The documentary evidence of the Works' conformity to the Bidding Documents may be in the form of literature, drawings and data and the bidder shall furnish documentation as set out in Bidding Documents.

12.2 The bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers, if any, designated by the Employer in the Technical Provisions are intended to be descriptive only and not restrictive.

### **IB.13 Bid Security**

13.1 Each bidder shall furnish, as part of his bid, at the option of the bidder, a Bid Security in the amount stipulated in **Invitation for Bid** in Pak. Rupees in the form of CDR/SDR/ or a Bank Guarantee issued by a Scheduled Bank in Pakistan in favor of the Employer valid for a period up to twenty eight (28) days beyond the bid validity date.

13.2 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.

13.3 The bids securities of unsuccessful bidders will be returned upon award of contract to the successful bidder or on the expiry of validity of Bid Security whichever is earlier.

13.4 The Bid security of successful bidder will be returned when the bidder has furnished the required performance bond/security and signed the contract agreement.

13.5 The Bid Security may be forfeited:

(a) If a bidder withdraws his bid during the period of bid validity; or

(b) If a bidder does not accept the correction of his Bid Price, pursuant to Sub-Clause 16.4 (b) hereof; or

(c) In the case of a successful bidder, if he fails to furnish the required performance bond/security and sign the Contract Agreement, in accordance with Sub- Clauses IB.20.2 & 20.3.

### **IB.14 Validity of Bids, Format, Signing and Submission of Bid**

14.1 Bids shall remain valid for the period of 90 days after the date of bid opening.

14.2 Bidders shall ensure that all Schedules to Bid are to be properly completed and signed.

14.3 No alteration is to be made in the Form of Bid except in filling up the blanks as directed. If any alteration be made or if these instructions be not fully complied with, the bid may be rejected.

14.4 Each bidder shall prepare one set of document comprising the bid as described in Clause IB.8 and clearly mark as "ORIGINAL". In the event of discrepancy between document available on university's website duly uploaded by the university and the bid document submitted by the bidders, the uploaded document shall prevail.

14.5 The bid shall be typed or written in indelible ink and shall be signed by the owner or partner of the company. All pages of the bid shall be initialed and official seal be affixed by the person or persons signing the bid.

14.6 The Bid shall be delivered in person or sent by registered mail at the address to the Employer.



## **D. SUBMISSION OF BID**

### **IB.15 Deadline for Submission, Modification & Withdrawal of Bids**

- 15.1 Bids must be received by the Employer (at the address) not later than the time and date mentioned in notice inviting tenders.
- 15.2 Bids submitted through telegraph, telex, fax or e-mail shall not be considered.
- 15.3 Any bid received by the Employer after the deadline for submission prescribed in invitation for bid will be returned unopened to such bidder.
- 15.4 Any bidder may modify or withdraw his bid after bid submission provided that the modification or written notice of withdrawal is received by the Employer prior to the deadline for submission of bids.
- 15.5 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the Form of Bid may result in forfeiture of the Bid Security pursuant to Sub-Clause IB.13.5 (a).

## **E. BID OPENING AND EVALUATION**

### **IB.16 Bid Opening, Clarification and Evaluation**

Opening of the bids shall take place in following two stages;

#### **1. Opening of bids.**

##### **(A) Envelop -I (Qualification Documents/ Technical Proposal)**

Prior to open the financial bid of the bidders, Envelop-1 (i-e Qualification Documents /Technical Proposals) shall be opened and shall be placed for evaluation for the purpose in accordance to the specified criteria.

##### **(B) Envelop –II (Financial Proposal)**

- i. Only the Bids (Financial Proposals) of the Qualified and Technically accepted/responsive bidders will be opened publically by the Bid Opening Committee in the presence of Bidder representatives who choose to attend, at the time, date and location stipulated in the invitation. The Bidder representatives who are present shall sign attendance sheet evidencing their attendance.
- ii. Envelopes marked “Modification”, “Substitution” or “Withdrawal” shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted shall not be opened.
- iii. The Bidder name, total Bid Price and price of any Alternate Proposal(s), any discounts, bid modifications, substitution and withdrawals, the presence or absence of Bid Security, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening of bids.
- iv. Employer shall prepare minutes of the bid opening, including the information disclosed to those present in accordance with the Sub-Clause above.

## 2. Evaluation of bids.

Evaluation Committee shall evaluate the bids, in following two stages;

### (A) Envelop -I (Qualification Documents/Technical Proposal).

- a) To determine the eligibility of the bidder for participation in the bidding, the committee will verify the bidder in accordance to the instructions specified under clause IB-3. The Qualification Documents/ Technical Proposals of only eligible bidders shall be evaluated further.
- b) Qualification of the bidders shall be determined in accordance to criteria set herein below from the documents submitted by the bidders, prescribed in IB-11. Bidder scoring 50% and above marks shall be declared as pass. Criteria for qualification of bidders shall be as;

#### 1. Experience;

Credit Marks for experience shall be awarded on the basis of following qualifications:

| Sr. # | Description   | Detailing             | Weightage |
|-------|---|-----------------------|-----------|
| i)    | Works/Projects of similar nature and complexity completed over last 10 years. | 5 marks/each project  | 15        |
| ii)   | Works/Projects of similar nature and complexity in hand.                      | 5 marks /each project | 10        |
| iii)  | Experience of Works related to this bid but not basic part.                   | 5 mark/ each project  | 5         |
| iv)   | Status of enlistment with Govt. Org. and other agencies.                      | 1 mark/ each Deptt.   | 5         |
|       | <b>Sub-total:</b>   |                       | <b>35</b> |

#### 2. Personnel Capabilities;

Credit Marks shall be awarded under this category using the following criteria:

| Sr. # | Description   | Detailing                | Weightage |
|-------|---|--------------------------|-----------|
| i)    | Graduates in employment of the firm in relevant field.<br>a) Number<br>b) Experience (in number of years) | 01 Nos.<br>03 years/each | 6<br>3    |
| ii)   | DAE in Employment of the Firm in relevant field.<br>a) Number<br>b) Experience (in number of Years)       | 02 Nos.<br>03 years/each | 4<br>2    |
|       |   | <b>Sub-Total:</b>        | <b>15</b> |

### 3. Financial Position;

Credit Marks shall be awarded on the basis of the following criteria:

| Ser. # | Description  | Detailing         | Weightage |
|--------|--|-------------------|-----------|
| i).    | Available Bank Credit line                               | 1 mark/ million   | 5         |
| i)     | Working Capital in last 3 years.                         | 1 mark/ million   | 5         |
| iii)   | Registration with Income Tax Department                  | Y=10              | 10        |
| iv)    | Litigation History where decision went against the Firm. | N=5               | 5         |
| v)     | Blacklisting from any Agency                             | N=5               | 5         |
|        |  | <b>Sub-Total:</b> | <b>30</b> |

### 4. Equipment and machinery;

Credit Marks shall be awarded on the basis of the following criteria:

| Sr. #           | Description                        | Marks Assigned | Explanation for Marks Obtained              |
|-----------------|------------------------------------|----------------|---|
| 1               | Dumper Trucks/Dyna/ Shower/ Loader | 10             | Total Marks<br>= (Marks Obtained / 60) * 20 |
| 2               | Steel cutting & Bending Machine    | 10             |   |
| 3               | Form Work/ Scaffolding Pipe        | 10             |   |
| 4               | Concrete Mixer/ Lift with Machine  | 10             |   |
| 5               | Generator Set (5 KVA)              | 10             |   |
| 6               | Vibrator/plate compactor           | 10             |   |
| <b>G. total</b> |                                    | <b>60</b>      | <b>20</b>                                   |

### (B) Envelop -II (Financial Proposal);

Financial proposal of only Eligible, Qualified/Technically Responsive bidders duly opened by the bid opening committee shall be placed for evaluation by following steps mentioned herein below;

#### **Preliminary Examination of Bids and Determination of Responsiveness;**

##### **(a) the Employer/purchaser will examine the Bids to determine whether;**

- a. The documents have been properly signed,
- b. The Bid is valid till required period,
- c. Completion period offered is within specified limits,
- d. The Bids are generally in order.

**(b) A bid will not be considered, if;**

- (i) it is unsigned,
- (ii) its validity is less than specified,
- (iii) it is not accompanied with bid security,
- (iv) it is received after the deadline for submission of bids,
- (v) it is submitted through fax, telex, telegram or email,
- (vi) the bidder refuses to accept arithmetic correction,
- (vii) The submitted bid is conditional,
- (viii) It limits the bidder's obligation in any way under the contract.
- (ix) Appendices/schedules are not filled properly.
- (x) Formats/proformas are not accepted for implementation.

(The Employer will open the financial bids, in the presence of bidders' representatives who choose to attend, at the time, date and location stipulated in the invitation for bid).

**16.8 Evaluated Bid Price**

In evaluating the bids, the Engineer/Employer will determine for each bid in addition to the Bid Price, the following factors (adjustments) in the manner and to the extent indicated below to determine the Evaluated Bid Price:

- (i) Making any correction for arithmetic errors.
- (ii) Making an appropriate price adjustment for any other acceptable variation or deviation.
- (iii) Making an appropriate price adjustment for Deviations in terms of Payments (if any and acceptable to the Employer).
- (iv) Premium and Discount, offered by the bidders as also read out and recorded at the time of bid opening.

**IB.17 Process to be Confidential**

17.1 Subject to Sub-Clause IB.16.3 heretofore, no bidder shall contact Engineer/Employer on any matter relating to its Bid from the time of the Bid opening to the time the bid evaluation result is announced by the Employer. The evaluation result shall be announced at least ten (10) days prior to award of Contract. The announcement shall be made by uploading bid evaluation report on university website.

17.2 Any effort by a bidder to influence Engineer/Employer in the Bid evaluation, Bid comparison or Contract Award decisions may result in the rejection of his Bid. Whereas, any bidder feeling aggrieved may lodge a written complaint not later than fourteen (14) days after the announcement of the bid evaluation result, however, mere fact of lodging a complaint shall not warrant suspension of procurement process.

## **F. AWARD OF CONTRACT**

### **IB.18 Post-qualification**

Not required. (Single stage, two envelopes bidding shall be done).

### **IB.19 Award Criteria & Employer's Right**

- 19.1 Subject to Sub-Clause IB.19.2, the Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest evaluated Bid Price, provided that such bidder has been determined to be qualified to satisfactory perform the Contract in accordance with the provisions of Clause IB.18.
- 19.2 Notwithstanding Sub-Clause IB.19.1, the Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidders or any obligation to inform the affected bidders of the grounds for the Employer's action except that the grounds for its rejection of all bids shall upon request be communicated, to any bidder who submitted a bid, without justification of the grounds. Notice of the rejection of all the bids shall be given promptly to all the bidders by uploading on University's website.

### **IB.20 Notification of Award & Signing of Contract Agreement**

- 20.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder in writing ("Letter of Acceptance") that his bid has been accepted.
- 20.2 Within seven (7) days from the date of furnishing of the acceptable performance bond/security under the conditions of contract, the Employer will send the successful bidder the Form of Contract Agreement provided in the Bidding Documents, incorporating all agreements between the parties.
- 20.3 The formal Agreement between the Employer and the successful bidder shall be executed within seven (7) days of the receipt of Form of Contract Agreement by the successful bidder from the Employer.
- 20.4 Contract Agreement, Performance Bond, Indemnity Bond, Integrity Pact, etc. shall be submitted by the successful bidder on the Non-Judicial Stamp Paper of at least value of Rs. 100/- each.
- 20.5 The Successful bidder upon award of contract and signing the contract agreement shall arrange 06 (Six) copies of contract documents for the exclusive use of different sections of the employer and contractor.

### **IB.21 Performance Security.**

- 21.1 The successful bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Conditions of Contract within a period of fourteen (14) days after the receipt of Letter of Acceptance.
- 21.2 Failure of the successful bidder to comply with the requirements of Sub-Clauses IB.20.2 & 20.3 or 21.1 or Clause IB.22 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

**IB.22 Integrity Pact**

The Bidder shall sign and stamp the Form of Integrity Pact provided in the Bidding Document for all Federal Government procurement contracts exceeding Rupees ten (10) million. Failure to provide such Integrity Pact shall make the bid non-responsive.

**IB.23 General Performance of the Bidders**

The Employer reserves the right to obtain information regarding performance of the bidders on their previously awarded contracts/works. The Employer may in case of consistent poor performance of any Bidder as reported by the employers of the previously awarded contracts, interalia, reject his bid and/or refer the case to the Pakistan Engineering Council (PEC). Upon such reference, PEC in accordance with its rules, procedures and relevant laws of the land take such action as may be deemed appropriate under the circumstances of the case including black listing of such Bidder and debarring him from participation in future bidding for similar works. The successful bidder shall deposit an amount of 18,750/- in Govt. Treasury as stamp duty or shall be deducted from the running bill of the contractor.

## **CONDITIONS OF THE CONTRACT**

# CONDITIONS OF THE CONTRACT

## 1. GENERAL PROVISIONS

### 1.1 Definitions

In the Contract as defined below, the words and expressions defined shall have the following meanings assigned to them, except where the context requires otherwise:

#### **The Contract**

- 1.1.1 “Contract” means the Contract Agreement and the other documents listed in the Contract Data.
- 1.1.2 “Specifications” means the document as listed in the Contract Data, including Employer’s requirements in respect of design to be carried out by the Contractor (if any), and any Variation to such document.
- 1.1.3 “Drawings” means the Employer’s drawings of the Works as listed in the Contract Data, and any Variation to such drawings.

#### **The Persons**

- 1.1.4 “Employer” means the person named in the Contract Data and the legal successors in title to this person, but not (except with the consent of the Contractor) any assignee.
- 1.1.5 “Contractor” means the person named in the Contract Data and the legal successors in title to this person, but not (except with the consent of the Employer) any assignee.
- 1.1.6 “Party” means either the Employer or the Contractor.

#### **The Dates, Times and Periods**

- 1.1.7 “Commencement Date” means the date mentioned in the notice to commence work.
- 1.1.8 “Day” means a calendar day.
- 1.1.9 “Time for Completion” means the time mentioned in the notice to commence work.

#### **The Money and Payments**

- 1.1.10 “Cost” means all expenditure properly incurred (or to be incurred) by the Contractor, whether on or off the Site, including overheads and similar charges but does not include any allowance for profit.

#### **Other Definitions**

- 1.1.11 “Contractor’s Equipment” means all machinery, apparatus and other things required for the execution of the Works but does not include Materials or Plant intended to form part of the Works.



- 1.1.12 “Country” means the Islamic Republic of Pakistan.
- 1.1.13 “Employer’s Risks” means those matters listed in Sub-Clause 6.1.
- 1.1.14 “Force Majeure” means an event or circumstance which makes performance of a Party’s obligations illegal or impracticable and which is beyond that Party’s reasonable control.
- 1.1.15 „Materials” means things of all kinds (other than Plant) to be supplied and incorporated in the Works by the Contractor.
- 1.1.16 “Plant” means the machinery and apparatus intended to form or forming part of the Works.
- 1.1.17 “Site” means the places provided by the Employer where the Works are to be executed, and any other places specified in the Contract as forming part of the Site.
- 1.1.18 “Variation” means a change which is instructed by the Engineer/Employer under Sub-Clause 10.1.
- 1.1.19 „Works” means any or all the works whether Supply, Installation, Construction etc. and design (if any) to be performed by the Contractor including temporary works and any variation thereof.
- 1.1.20 “Engineer” means the person notified by the Employer to act as Engineer for the purpose of the Contract and named as such in Contract Data.

## **1.2 Interpretation**

Words importing persons or parties shall include firms and organizations. Words importing singular or one gender shall include plural or the other gender where the context requires.

## **1.3 Priority of Documents**

The documents forming the Contract are to be taken as mutually explanatory of one another. If an ambiguity or discrepancy is found in the documents, the priority of the documents shall be in accordance with the order as listed in the Contract Data.

## **1.4 Law**

The law of the Contract is the relevant Law of Islamic Republic of Pakistan.

## **1.5 Communications**

All Communications related to the Contract shall be in English language.

## **1.6 Statutory Obligations**

The Contractor shall comply with the Laws of Islamic Republic of Pakistan and shall give all notices and pay all fees and other charges in respect of the Works.

## **2. THE EMPLOYER**

### **2.1 Provision of Site**

The Employer shall provide the Site and right of access thereto at the times stated in the Contract Data.

### **2.2 Permits etc.**

The Employer shall, if requested by the Contractor, assist him in applying for permits, licenses or approvals which are required for the Works.

### **2.3 Engineer's/Employer's Instructions**

The Contractor shall comply with all instructions given by the Employer or the Engineer, if notified by the Employer, in respect of the Works including the suspension of all or part of the Works.

### **2.4 Approvals**

No approval or consent or absence of comment by the Engineer/Employer shall affect the Contractor's obligations.

## **3. ENGINEER'S/EMPLOYER'S REPRESENTATIVES**

### **3.1 Authorized Person**

The Employer shall appoint a duly authorized person to act for him and on his behalf for the purposes of this Contract. Such authorized person shall be duly identified in the Contract Data or otherwise notified in writing to the Contractor as soon as he is so appointed. In either case the Employer shall notify the Contractor, in writing, the precise scope of the authority of such authorized person at the time of his appointment.

### **3.2 Engineer's/Employer's Representative**

The name and address of Engineer's/Employer's Representative is given in Contract Data. However the Contractor shall be notified by the Engineer/Employer, the delegated duties and authority before the Commencement of Works.

## **4. THE CONTRACTOR**

### **4.1 General Obligations**

The Contractor shall carry out the Works properly and in accordance with the Contract. The Contractor shall provide all supervision, labour, Materials, Plant and Contractor's Equipment which may be required.

**4.2 Contractor's Representative**

The Contractor shall appoint a representative at site on full time basis to supervise the execution of work and to receive instructions on behalf of the Contractor but only after obtaining the consent of the Employer for such appointment which consent shall not be unreasonable withheld by the Employer. Such authorized representative may be substituted/ replaced by the Contractor at any time during the Contract Period but only after obtaining the consent of the Employer as aforesaid.

**4.3 Subcontracting**

The Contractor shall not subcontract the whole of the Works. The Contractor shall not subcontract any part of the Works without the consent of the Employer.

**4.4 Performance Security**

The Contractor shall furnish to the Employer within fourteen (14) days after receipt of Letter of Acceptance a Performance Security at the option of the bidder, in the form of Bank Draft or Bank Guarantee or an insurance company having at least AA rating from PACRA/JCR for the amount equal to 10% of the Contract Price and valid for construction period.

**5. DESIGN BY CONTRACTOR**

**5.1 Contractor's Design**

The Contractor shall carry out design to the extent specified, as referred to in the Contract Data. The Contractor shall promptly submit to the Engineer/Employer all designs prepared by him. Within fourteen (14) days of receipt the Engineer/Employer shall notify any comments or, if the design submitted is not in accordance with the Contract, shall reject it stating the reasons. The Contractor shall not construct any element of the Works designed by him within fourteen (14) days after the design has been submitted to the Engineer/Employer or which has been rejected. Design that has been rejected shall be promptly amended and resubmitted. The Contractor shall resubmit all designs commented on taking these comments into account as necessary.

**5.2 Responsibility for Design**

The Contractor shall remain responsible for his bided design and the design under this Clause, both of which shall be fit for the intended purposes defined in the Contract and he shall also remain responsible for any infringement of any patent or copyright in respect of the same. The Engineer/Employer shall be responsible for the Specifications and Drawings.

## **6. EMPLOYER'S RISKS**

### **6.1 The Employer's Risks**

The Employer's Risks are:-

- a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, within the Country;
- b) Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war, within the Country;
- c) Riot, commotion or disorder by persons other than the Contractor's personnel and other employees including the personnel and employees of Sub-Contractors, affecting the Site and/or the Works;
- d) ionizing radiations, or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component of such an assembly, except to the extent to which the Contractor/Sub-Contractors may be responsible for the use of any radio-active material;
- e) Pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds;
- f) Use or occupation by the Employer of any part of the Works, except as may be specified in the Contract;
- g) late handing over of sites, anomalies in drawings, late delivery of designs and drawings of any part of the Works by the Employer's personnel or by others for whom the Employer is responsible;
- h) A suspension under Sub-Clause 2.3 unless it is attributable to the Contractor's failure; and
- i) Physical obstructions or physical conditions other than climatic conditions, encountered on the Site during the performance of the Works, for which the Contractor immediately notified to the Employer and accepted by the Employer.

## **7. TIME FOR COMPLETION**

### **7.1 Execution of the Works**

The Contractor shall commence the Works on the Commencement Date and shall proceed expeditiously and without delay and shall complete the Works as per directions of the Engineer and Priority of Employer, subject to Sub-Clause 7.3 below, within the Time for Completion.

### **7.2 Program**

Shall be submitted by the Contractor for grant of approval from the Engineer.

### **7.3 Extension of Time**

The Contractor shall, within such time as may be reasonable under the circumstances, notify the Employer/Engineer of any event(s) falling within the scope of Sub-Clause 6.1 or 10.3 of these Conditions of Contract and request the Employer/Engineer for a reasonable extension in the time for the completion of Works. Subject to the aforesaid, the Employer/Engineer shall determine such reasonable extension in the time for the completion of Works as may be justified in the light of the details/particulars supplied by the Contractor in connection with the such determination by the Employer/Engineer within such period as may be prescribed by the Employer/Engineer for the same; and

The Employer shall extend the Time for Completion as determined.

### **7.4 Late Completion**

If the Contractor fails to complete the Works within the Time for Completion, the Contractor's only liability to the Employer for such failure shall be to pay the amount stated in the Contract Data for each day for which he fails to complete the Works.

## **8. TAKING-OVER**

### **8.1 Completion**

The Contractor may notify the Engineer/Employer when he considers that the Works are complete.

### **8.2 Taking-Over Notice**

Within fourteen (14) days of the receipt of the said notice of completion from the Contractor the Employer/Engineer shall either takeover the completed Works and issue a Certificate of Completion to that effect or shall notify the Contractor his reasons for not taking-over the Works. While issuing the Certificate of Completion as aforesaid, the Employer/Engineer may identify any outstanding items of work which the Contractor shall undertake during the Maintenances Period.

## **9. REMEDYING DEFECTS**

### **9.1 Remedying Defects**

The Contractor shall for a period stated in the Contract Data from the date of issue of the Certificate of Completion carry out, at no cost to the Employer, repair and rectification work which is necessitated by the earlier execution of poor quality of work or use of below specifications material in the execution of Works and which is so identified by the Employer/Engineer in writing within the Said period. Upon expiry of the Said period, and subject to the Contractor's faithfully performing his

aforesaid obligations, the Employer/Engineer shall issue a Maintenance Certificate whereupon all obligations of the Contractor under this Contract shall come to an end.

Failure to remedy any such defects or complete outstanding work within a reasonable time shall entitle the Employer to carry out all necessary works at the Contractor's cost. However, the cost of remedying defects not attributable to the Contractor shall be valued as a Variation.

## **9.2 Uncovering and Testing**

The Engineer/Employer may give instruction as to the uncovering and/or testing of any work. Unless as a result of an uncovering and/or testing it is established that the Contractor's design, Materials, Plant or workmanship are not in accordance with the Contract, the Contractor shall be paid for such uncovering and/or testing as a Variation in accordance with Sub-Clause 10.2.

## **10. VARIATIONS AND CLAIMS**

### **10.1 Right to Vary**

The Employer/Engineer may issue Variation Order(s) in writing. Where for any reason it has not been possible for the Employer/Engineer to issue such Variations Order(s), the Contractor may confirm any verbal orders given by the Employer/Engineer in writing and if the same are not refuted/denied by the Employer/Engineer within seven (7) days of the receipt of such confirmation the same shall be deemed to be a Variation Orders for the purposes of this Sub-Clause.

### **10.2 Valuation of Variations**

Variations shall be valued as follows:

- a) At a lump sum price agreed between the Parties, or
- b) Where appropriate, at rates in the Contract, or
- c) In the absence of appropriate rates, the rates in the Contract shall be used as the basis for valuation, or failing which
- d) At appropriate new rates, as may be agreed or which the Engineer/Employer considers appropriate, or
- e) if the Engineer/Employer so instructs, at day work rates set out in the Contract Data for which the Contractor shall keep records of hours of labour and Contractor's Equipment, and of Materials, used.

### **10.3 Early Warning**

The Contractor shall notify the Engineer/Employer in writing as soon as he is aware of any circumstance which may delay or disrupt the Works, or which may give rise to a claim for additional payment.

To the extent of the Contractor's failure to notify, which results to the Engineer/Employer being unable to keep all relevant records or not taking steps to minimize any delay, disruption, or Cost, or the value of any Variation, the Contractor's entitlement to extension of the Time for Completion or additional payment shall be reduced/rejected.

### **10.4. Valuation of Claims**

If the Contractor incurs Cost as a result of any of the Employer's Risks, the Contractor shall be entitled to the amount of such Cost. If as a result of any Employer's Risk, it is necessary to change the Works, this shall be dealt with as a Variation subject to Contractor's notification for intention of claim to the Engineer/Employer within fourteen (14) days of the occurrence of cause.

### **10.5 Variation and Claim Procedure**

The Contractor shall submit to the Engineer/Employer an itemized make-up of the value of variations and claims within twenty eight (28) days of the instruction or of the event giving rise to the claim. The Engineer/Employer shall check and if possible agree the value. In the absence of agreement, the Employer shall determine the value.

## **11. CONTRACT PRICE AND PAYMENT**

### **11.1 (a) Terms of Payments**

The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other terms of the Contract, shall , subject to Clause 47, be paid by the Employer to the Contractor within 30 days after such Interim Payment Certificate has been jointly verified by Employer and Contractor, or, in the case of the Final Certificate referred to in Sub Clause 60.8, within 60 days after such Final Payment Certificate has been jointly verified by Employer and Contractor; Provided that the Interim Payment shall be caused in 42 days and Final Payment in 60 days in case of foreign funded project. In the event of the failure of the Employer to make payment within the times stated, the Employer shall pay to the Contractor compensation at the 28 days rate of KIBOR+2% per annum in local currency and LIBOR+1% for foreign 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.

**(b) Valuation of the Works**

The Works shall be valued as provided for in the Contract Data, subject to Clause 10.

**11.2 Monthly Statements**

The Contractor shall be entitled to be paid at monthly intervals:

- a) The value of the Works executed; and
- b) The percentage of the value of Materials and Plant reasonably delivered to the Site, as stated in the Contract Data, subject to any additions or deductions which may be due.

The Contractor shall submit each month to the Engineer/Employer a statement showing the amounts to which he considers himself entitled.

**11.3 Interim Payments**

Within a period not exceeding seven (7) days from the date of submission of a statement for interim payment by the Contractor, the Engineer shall verify the same and within a period not exceeding thirty (30) days from the said date of submission by the Contractor, the Employer shall pay to the Contractor the sum verified by the Engineer less retention money at the rate stated in the Contract Data.

**11.4 Retention**

Retention money shall be paid by the Employer to the Contractor within fourteen (14) days after either the expiry of the period stated in the Contract Data, or the remedying of notified defects, or the completion of outstanding work, all as referred to in Sub-Clause 9.1, whichever is the later.

**11.5 Final Payment**

Within twenty one (21) days from the date of issuance of the Maintenance Certificate the Contractor shall submit a final account to the Engineer to verify and the Engineer shall verify the same within fourteen (14) days from the date of submission and forward the same to the Employer together with any documentation reasonably required to enable the Employer to ascertain the final contract value.

Within sixty (60) days from the date of receipt of the verified final account from the Engineer, the Employer shall pay to the Contractor any amount due to the Contractor. While making such payment the Employer may, for reasons to be given to the Contractor in writing, withhold any part or parts of the verified amount.



**11.6 Currency**

Payment shall be in the currency stated in the Contract Data.

**12. DEFAULT**

**12.1 Defaults by Contractor**

If the Contractor abandons the Works, refuses or fails to comply with a valid instruction of the Engineer/Employer or fails to proceed expeditiously and without delay, or is, despite a written complaint, in breach of the Contract, the Employer may give notice referring to this Sub-Clause and stating the default.

If the Contractor has not taken all practicable steps to remedy the default within fourteen (14) days after receipt of the Employer's notice, the Employer may by a second notice given within a further twenty one (21) days, terminate the Contract. The Contractor shall then demobilize from the Site leaving behind any Contractor's Equipment which the Employer instructs, in the second notice, to be used for the completion of the Works at the risk and cost of the Contractor.

**12.2 Defaults by Employer**

If the Employer fails to pay in accordance with the Contract, or is, despite a written complaint, in breach of the Contract, the Contractor may give notice referring to this Sub-Clause and stating the default. If the default is not remedied within fourteen (14) days after the Employer's receipt of this notice, the Contractor may suspend the execution of all or parts of the Works.

If the default is not remedied within twenty eight (28) days after the Employer's receipt of the Contractor's notice, the Contractor may by a second notice given within a further twenty one (21) days, terminate the Contract. The Contractor shall then demobilize from the Site.

**12.3 Insolvency**

If a Party is declared insolvent under any applicable law, the other Party may by notice terminate the Contract immediately. The Contractor shall then demobilize from the Site leaving behind, in the case of the Contractor's insolvency; any Contractor's Equipment which the Employer instructs in the notice is to be used for the completion of the Works.

**12.4 Payment upon Termination**

After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

- a) Any sums to which the Contractor is entitled under Sub-Clause 10.4,
- b) Any sums to which the Employer is entitled,
- c) if the Employer has terminated under Sub-Clause 12.1 or 12.3, the Employer shall be entitled;
  - i. to the additional cost due the work done at the Risk & Cost of the Contractor (i-e previous contractor whose contract is terminated),
  - ii. To a sum equivalent to twenty percent (20%) of the value of Parts of the Works not executed at the date of the termination to cover the additional cost/burden on employer.

However in any case this shall not exceed the amount/maximum limit of the Liquidated Damages as mentioned in the contract data, and

- iii. If the Contractor has terminated under Sub-Clause 12.2 or 12.3, the Contractor shall be entitled to the cost of his demobilization together with a sum equivalent to ten percent (10%) of the value of Parts of the Works not executed at the date of termination.

The net balance due shall be paid or repaid within twenty eight (28) days of the notice of termination.

**13. RISKS AND RESPONSIBILITIES**

**13.1 Contractor’s Care of the Works**

Subject to Sub-Clause 9.1, the Contractor shall take full responsibility for the care of the Works from the Commencement Date until the date of the Employer’s/Engineer’s issuance of Certificate of Completion under Sub-Clause 8.2. Responsibility shall then pass to the Employer. If any loss or damage happens to the Works during the above period, the Contractor shall rectify such loss or damage so that the Works conform to the Contract.

Unless the loss or damage happens as a result of any of the Employer’s Risks, the Contractor shall indemnify the Employer, or his agents against all claims loss, damage and expense arising out of the Works.

**13.2 Force Majeure**

If Force Majeure occurs, the Contractor shall notify the Engineer/Employer immediately. If necessary, the Contractor may suspend the execution of the Works and, to the extent agreed with the Employer demobilize the Contractor’s Equipment.

If the event continues for a period of eighty four (84) days, either Party may then give notice of termination which shall take effect twenty eight (28) days after the giving of the notice.

After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

Sign \_\_\_\_\_  
 Seal \_\_\_\_\_  
 M/S \_\_\_\_\_

- a) Any sums to which the Contractor is entitled under Sub-Clause 10.4,
- b) The cost of his demobilization, and
- c) Less any sums to which the Employer is entitled.

The net balance due shall be paid or repaid within thirty five (35) days of the notice of termination.

**14. INSURANCE**

**14.1 Arrangements**

The Contractor shall, prior to commencing the Works, effect insurances of the types, in the amounts and naming as insured the persons stipulated in the Contract Data except for items (a) to (e) and (i) of the Employer's Risks under Sub-Clause 6.1. The policies shall be issued by insurers and in terms approved by the Employer. The Contractor shall provide the Engineer/Employer with evidence that any required policy is in force and that the premiums have been paid.

**14.2 Default**

If the Contractor fails to effect or keep in force any of the insurances referred to in the previous Sub-Clause, or fails to provide satisfactory evidence, policies or receipts, the Employer may, without prejudice to any other right or remedy, effect insurance for the cover relevant to such as a default and pay the premiums due and recover the same plus a sum in percentage given in Contractor Data from any other amounts due to the Contractor.

**15. RESOLUTION OF DISPUTES**

**15.1 Engineer's Decision**

If a dispute of any kind whatsoever arises between the Employer and the Contractor in connection with the Works, the matter in dispute shall, in the first place, be referred in writing to the Engineer, with a copy to the other party. Such reference shall state that it is made pursuant to this Clause. No later than the twenty eight (28) days after the day on which he received such reference, the Engineer shall give notice of his decision to the Employer and the Contractor.

Unless the Contract has already been repudiated or terminated, the Contractor shall, in every case, continue to proceed with the Work with all due diligence, and the Contractor and the Employer shall give effect forthwith to every such decision of the Engineer unless and until the same shall be revised, as hereinafter provided in an arbitral award.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**15.2 Notice of Dissatisfaction**

If a Party is dissatisfied with the decision of the Engineer or if no decision is given within the time set out in Sub-Clause 15.1 hereinabove, the Party may give notice of dissatisfaction referring to this Sub-Clause within fourteen (14) days of receipt of the decision or the expiry of the time for the decision. If no notice of dissatisfaction is given within the specified time, the decision shall be final and binding on the Parties. If notice of dissatisfaction is given within the specified time, the decision shall be binding on the Parties who shall give effect to it without delay unless and until the decision of the Engineer is revised by an arbitrator.

**15.3 Arbitration**

A dispute which has been the subject of a notice of dissatisfaction shall be finally settled as per provisions of Arbitration Act 1940 (Act No. X of 1940) and Rules made there under and any statutory modifications thereto. Any hearing shall be held at the place specified in the Contract Data and in the language referred to in Sub-Clause 1.5.

**16 INTEGRITY PACT**

16.1 If the Contractor or any of his Sub-Contractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed by the Contractor as Schedule-F to his Bid, then the Employer shall be entitled to:

- a. recover from the Contractor an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by the Contractor or any of his Sub-Contractors, agents or servants;
- b. Terminate the Contract; and
- c. Recover from the Contractor any loss or damage to the Employer as a result of such termination or of any other corrupt business practices of the Contractor or any of his Sub-Contractors, agents or servants.

On termination of the Contract under Sub-Para (b) of this Sub-Clause, the Contractor shall demobilize from the Site leaving behind Contractor's Equipment which the Employer instructs, in the termination notice, to be used for the completion of the Works at the risk and cost of the Contractor. Payment upon such termination shall be made under Sub-Clause 12.4, in accordance with Sub-Para (c) thereof, after having deducted the amounts due to the Employer under Sub-Para (a) and (c) of this Sub-Clause.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

# CONTRACT DATA

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

## **CONTRACT DATA**

### **Sub-Clauses of Conditions of Contract**

(Contract Data shall prevail over the General Conditions where there is conflict.)

#### **1. GENERAL PROVISIONS**

##### **1.1 Definitions**

###### **The Contract**

###### **1.1.1 Contract.**

List of Contract Documents;

- (a) The Contract Agreement
- (b) The Letter of Acceptance
- (c) The completed Form of Bid
- (d) MRS/CSR-2019.
- (e) The summary of Bill of Quantities along with preamble
- (f) The Contract Data
- (g) The Conditions of Contract
- (h) The Drawings

###### **1.1.2 Specifications.**

- (a) The Specifications (Special Provisions)
- (b) The Specifications (Technical Provisions)

###### **1.1.3 Drawings.**

- (a) The Bidding Drawings
- (b) The Construction Drawings
- (c) The Shop Drawings
- (d) The As Built Drawings
- (e) Other as directed by the Employer/Engineer

###### **The Persons**

###### **1.1.4 The Employer.**

The Vice Chancellor Shaheed Benazir Bhutto University, Sheringal, Dir Upper.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**1.1.4 The Engineer.**

Director of Works. Shaheed Benazir Bhutto University, Sheringal, Dir Upper.

**1.1.5 The Contractor**

The lowest evaluated successful bidder to whom the Contract has been awarded.

**The Dates, Times and Periods**

**1.1.7 Commencement Date means**

The date mentioned in the Engineer's Notice to Commence work/Works order.

**1.1.9 Time for Completion**

The date mentioned in the Engineer's Notice to Commence work/Works order.

**1.3 Priority of Documents**

As stated in list of Contract Documents sub clause 1.1.1 above.

**2. THE EMPLOYER**

**2.1 Provision of Site:**

Shall be provided by the University to the Contractor.

**3. ENGINEER'S/EMPLOYER REPRESENTATIVES**

**3.1 Authorized Person:**

(The Contract Documents etc. shall be signed by him on behalf of employer)

Director of Works  
Shaheed Benazir Bhutto University, Sheringal, Dir Upper.

**3.2 Name and Address of Engineer's/Employer's Representative;**

(Shall handover possession of site and all the necessary Technical matters shall be addressed to him)

AD (Works)  
Shaheed BB University

**5. DESIGN BY CONTRACTOR**

**5.1 Contractor's Design**

Shall be carried out, as described in Specifications under Special Provisions and/or Technical Provisions.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

## **7.4 Late Completion**

### **a. Liquidated Damages.**

Amount payable due to failure to complete the work in stipulated time shall be **0.10%** per day up to a maximum of **10%** of Contract Price i-e sum stated in the Acceptance Letter.

### **b. Rate of Progress**

If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Works or any Section is at any time, in the opinion of the Engineer, too slow to comply with the Time for Completion, the Engineer shall so notify the Contractor who shall thereupon take such steps as are necessary, subject to the consent of the Engineer, to expedite progress so as to comply with the Time for Completion. The Contractor shall not be entitled to any additional payment for taking such steps. If, as a result of any notice given by the Engineer under this Clause, the Contractor considers that it is necessary to do any work at night or on locally recognized days of rest, he shall be entitled to seek the consent of the Engineer so to do. Provided that if any steps, taken by the Contractor in meeting his obligations under this Clause, involve the Employer in additional supervision costs, such cost shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

### **c. Liquidated Damages for Delay**

If the Contractor fails to comply with the Time for Completion in accordance with Conditions of the contract, for the whole of the Works or, if applicable, any Section within the relevant time prescribed hereby, then the Contractor shall pay to the Employer the relevant sum as decided by the employer as liquidated damages for such default and not as a penalty (which sum shall be the only monies due from the Contractor for such default) for every day or part of a day which shall elapse between the relevant Time for Completion and the date stated in a Taking-Over Certificate of the whole of the Works or the relevant Section. The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any monies due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the Contract.

### **d. Reduction of Liquidated Damages**

If, before the Time for Completion of the whole of the Works or, if applicable, any Section, a Taking-Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_



after the date stated in such Taking-Over Certificate, and in the absence of Alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

**9. REMEDYING DEFECTS**

**9.1 Remedying Defects**

Period for Remedying Defects is 364 days.

**10. VARIATION AND CLAIMS (Alterations, Additions and Omissions)**

Delete sub-clause and substitute the text with;

**a. Variations**

The Engineer shall make any variation of the form, quality or quantity of the Works or any part thereof that may, in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion, be appropriate, he shall have the authority to instruct the Contractor to do and the Contractor shall do any of the following:

- (a) Increase or decrease the quantity of any work included in the Contract,
- (b) Omit any such work (but not if the omitted work is to be carried out by the Employer or by another contractor),
- (c) Change the character or quality or kind of any such work,
- (d) Change the levels, lines, position and dimensions of any part of the Works,
- (e) Execute additional work of any kind necessary for the completion of the Works, or
- (f) Change any specified sequence or timing of construction of any part of the Works.

No such variation shall in any way vitiate or invalidate the Contract, but the effect, if any, of all such variations shall be valued in accordance with conditions of the contract. Provided that where the issue of an instruction to vary the Works is necessitated by some default of or breach of contract by the Contractor or for which he is responsible, any additional cost attributable to such default shall be borne by the Contractor.

**b. Instructions for Variations**

The Contractor shall not make any such variation without an instruction of the Engineer. Provided that no instruction shall be required for increase or decrease in the quantity of any work where such increase or decrease is not the result of an instruction given under this Clause, but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**c. Valuation of Variations**

All variations referred to hereinabove and any additions to the Contract Price which are required to be determined (for the purposes of this Clause referred to as "varied work"), shall be valued at the rates and prices set out in the Contract (Priced BoQ) if, in the opinion of the Engineer, the same shall be applicable. If the Contract (Priced BoQ) does not contain any such rates then the Rates of MRS/CSR 2019 with %age  $\pm$  duly evaluated form the Contract Price and Engineer's Estimate. However the MRS/CSR/ does not cover the same then actual market rate adding labor charges and 10% contractor profit and 5% overhead charges (along with tax if applicable) as per general engineering practice shall be adopted.

**d. Variations Exceeding 15 per cent**

If, on the issue of the Taking-Over Certificate for the whole of the Works, it is found that as a result of:

- (a) all varied work valued under Sub-Clauses 10. a & b.
- (b) all adjustments upon measurement of the estimated quantities set out in the Bill of Quantities, excluding Provisional Sums, but not from any other cause, there have been additions to or deductions from the Contract Price which taken together are in excess of 15 per cent of the "Effective Contract Price" (which for the purposes of this Sub-Clause shall mean the Contract Price, excluding Provisional Sums and allowance for day works if any) then and in such event (subject to any action already taken under any other Sub-Clause of this Clause), after due consultation by the Engineer with the Employer and the Contractor, there shall be added to or deducted from the Contract Price such further sums as may be agreed between the Contractor and the Engineer or, failing agreement, determined by the Engineer having regard to the Contractor's Site and general overhead costs of the Contract. The Engineer shall notify the Contractor of any determination made under this Sub-Clause, with a copy to the Employer. Such sum shall be based only on the amount by which such additions or deductions shall be in excess of 15 per cent of the Effective Contract Price.

**11. CONTRACT PRICE AND PAYMENT**

**11.1 (a) Terms of Payments**

Substitute the text with;

The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other terms of the Contract shall be paid by the Employer to the Contractor within 30 days after such Interim Payment Certificate has been jointly verified by Employer and Contractor, or, in the case of the Final Certificate within 60 days after such Final Payment Certificate has been jointly verified by Employer and Contractor. In the event of the failure of the Employer to make payment within the times stated, the Employer shall pay to the Contractor compensation at the 28 days

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

rate of KIBOR+2% 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.

**(b) Valuation of the Works**

Work done shall be priced by adopting Priced BoQ Rates as per MRS-2019.

**11.2 Monthly Statements**

**(a) The value of work executed**

**a. Items and Quantities of BoQ;**

The items mentioned and quantities set out in the Bill of Quantities are only for comparison of bids. Execution & working at site shall be done as per directions of the Engineer and shall be paid for actual work done at site.

**b. Works to be measured;**

The contractor shall submit monthly statements for the actual work carried out in accordance to the drawings, specifications and directions of Engineer. All the measurements shall be evident from the approved Check Request, lab test reports, level sheets etc. where ordered or any other procedure and methodology set by the Engineer, regarding which the contractor shall be informed accordingly.

**(b) Secured advance on Materials**

The contractor shall be entitled to receive secured advance against an indemnity bond acceptable to the employer of such sum which the engineer may consider proper in respect of non-perishable materials brought at the site but not yet incorporated in the permanent works, provided that;

- I. The materials are in accordance with the Specifications for the permanent works;
- II. Such materials have been delivered to the site and are properly stored and protected against loss or damage or deterioration to the satisfaction of Engineer but at the risk and cost of the contractor;
- III. The contractor have kept record of requirements, orders, receipt, gate pass invoices, use of materials etc. and shall be available for inspection and for submission of claims.
- IV. Ownership of such materials shall be deemed to vest in the Employer and these materials shall not be removed from the site or otherwise disposed off without written permission of the employer; and
- V. The sum payable for such materials at site shall not exceed 75% of the;

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

- a. Ex-factory/ex-warehouse price of locally manufactured of produced materials, or
  - b. Market price of other materials.
- VI. The recovery of secured advance paid to the contractor shall be effected from the monthly payment on actual consumptions basis;

**11.3 Interim Payments**

Retention money shall be deducted from the Running Payments @ Ten Percent (10%) until it reaches the maximum limit of Five Percent (5%) of the Contract Price.

**11.6 Currency of Payment**

Payment shall be done in Pak. Rupees.

**15 RESOLUTION OF DISPUTES**

**15.3 Arbitration;**

Place of Arbitration shall be Sheringal Dir Upper.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

# **FORM OF BID**

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**FORM OF BID**  
(LETTER OF OFFER)

To

The Director of Works  
Shaheed Benazir Bhutto University,  
Sheringal, Dir Upper

**Subject: “Rehabilitation works at first floor of family flats at Shaheed BB University Sheringal Dir Upper.**

1. Having examined the Bidding Documents including Instructions to Bidders, Conditions of Contract, Contract Data, Specifications, for the execution of the above-named Works, we, the undersigned, being a company doing business under the name of and address as mentioned below and being duly incorporated under the laws of Pakistan hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Bid Price as inserted in Summary of Estimates or such other sum as may be ascertained in accordance with the said Documents.
2. We understand that all the Schedules 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 drawn in your favor or made payable to you and valid for a period of twenty eight (28) days beyond the period of validity of Bid.
4. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the Works comprised in the Contract within the time(s) stated in Contract Data.
5. We agree to abide by this Bid for the period of 90 days from 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 understand that you are not bound to accept the lowest or any bid you may receive.
8. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a bid for the Works.

Dated this \_\_\_\_\_ day of \_\_\_\_, 2020.

Signature \_\_\_\_\_

Seal \_\_\_\_\_

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

# **APPENDICES TO BID**

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**SPECIAL STIPULATIONS****Clause (Conditions of Contract)**

| <b>Ser.</b> | <b>Description</b>   | <b>Ref Clause of GCC/PCC</b> | <b>Remarks/Clarification</b>  |
|-------------|--|------------------------------|---|
| 1.          | Engineer's Authority to issue Variation in emergency                                     | 2.1                          | 1% of the Contract Price stated in the Letter of Acceptance.  |
| 2.          | Amount of Performance Security   | 10.1                         | 10% of Contract Price or as stated in the Letter of Acceptance valid up to Construction Period.   |
| 3.          | Time for Furnishing Programme  | 14.1                         | Within 14 days from the date of receipt of Letter of Acceptance.  |
| 4.          | Minimum amount of Third Party Insurance  | 23.2                         | Rs. 3, 00, 000/- per occurrence with number of occurrences unlimited.   |
| 5.          | Time for Commencement  | 41.1                         | Within 07 days from the date of receipt of Engineer's Notice to Commence which shall be issued within seven (7) days after signing of Contract Agreement. |
| 6.          | Time for Completion  | 43.1,<br>48.2                | 180 days from the date of receipt of Engineer's Notice to Commence.   |
| 7.          | Amount of Liquidated Damages   | 47.1                         | 0.10% for each day of delay in completion of the Works subject to a maximum of 10% of Contract Price stated in the Letter of Acceptance.                  |
| 8.          | Defects Liability Period   | 49.1                         | 364 days from the effective date of Taking Over Certificate.  |
| 9.          | Percentage of Retention Money  | 60.2                         | 10 % of the amount of Interim Payment Certificate.  |
| 10.         | Limit of Retention Money   | 60.2                         | 10 % of Contract Price stated in the Letter of Acceptance or value of work done (whichever is higher)   |
| 11.         | Minimum amount of Interim Payment Certificates (Running Bills)                           | 60.2                         | Rs. 2.00 (Two) million.   |
| 12          | Time of Payment from delivery of Engineer's Interim Payment Certificate to the Employer. | 60.10                        | 30 days.  |

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_



**‘REHABILITATION WORK OF FIRST FLOOR AT SHAHEED BB UNIVERSITY  
SHERINGAL DIR UPPER’**

1. The Bill of Quantities shall be read in conjunction with the MRS/CSR-2019, Conditions of Contract, Specifications, Detailed Descriptions of CSR (and other documents as mentioned in ITB).
2. The quantities given in the Bill of Quantities are only estimated and provisional and are given to provide a common basis for bidding. the basis of payment will be on 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 by the employer, adding location factor (10%) and adding/deducting %age (percentage) quoted by the bidders.
3. Descriptions of the items of works entered in the priced BOQ are modified by the employer keeping in view, the detailed description of CSR and the requirements of work/contract and site, hence shall be considered by the bidders during bidding and by the contractor during performance of contract, without extra claim and shall be deemed considered by the bidder while quoting rates.
4. Pro-rata are adopted for some of the items, keeping in view its nature of works included in the item, hence shall be considered by the bidders while quoting %age/rate over the MRS/CSR rates.
5. It shall be deemed while quoting %age ( $\pm$ ) over the priced BoQ, that rates and prices entered in the priced BOQ shall, except insofar as it is otherwise provided under the Contract include all costs of Contractor’s plant, labor, supervision, materials, execution, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract. Furthermore all duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to deadline for submission of Bids, is included in the bid.
6. The whole cost of complying with the provisions of the Contract shall be included in the quoted rate/ %age/ premium/ discount in the summary of priced Bill of Quantities.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

7. The execution of items and quantities of BOQ are subject to the in-writing approval of the Engineer and may be increased, decreased even deleted during execution, hence the rate/ %age/ premium/ discount shall be entered very carefully by the bidders.
8. Variation Order if required, due to any reason shall be evaluated at the rates of Priced BoQ adding/deducting %age (premium/discount) quoted by the bidders. In case of non-availability in the contract, the rates of MRS-2019 (i-e CSR KP) with %age ( $\pm$ ) shall be adopted. However if there are some Non-Schedule items, they shall be analyzed from current market rates along with addition of 15% (10% Contractor Profit and 5% overhead charges).
9. Instructions for pricing of bid and quoting rates (%age) over summary of estimates shall be deemed considered by the bidders.
10. Units of measurements, symbols and abbreviations shall comply with the FPS System except Steel Reinforcement which is in MKS.
11. Minimum period of the contract shall be six (06) months which shall be considered from the date of letter of commencement of work and the employer may extend if required.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

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

Contract No. \_\_\_\_\_ Dated \_\_\_\_\_

Contract Value: \_\_\_\_\_

Contract Title: \_\_\_\_\_

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

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

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

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

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

Name of Buyer: .....

Name of Seller: .....

Signature: .....

Signature: .....

[Seal]

[Seal]

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**Appendix-D to Bid**

Shall be submitted by the bidder/contractor on non-judicial stamp paper of Rs. 100/- or above.

**POWER OF ATTORNEY**

**BID NAME; ‘REHABILITATION WORK OF FAMILY FLATS AT SHAHEED BB UNIVERSTY SHERINGAL DIR UPPER’.**

KNOW ALL MEN BY THESE PRESENTS that the undersigned Mr. \_\_\_\_\_ S/O Mr. \_\_\_\_\_ CNIC No \_\_\_\_\_ address \_\_\_\_\_ owner of the Firm MS \_\_\_\_\_ (hereinafter called the bidder/contractor) does hereby appoint Mr. \_\_\_\_\_ S/O Mr. \_\_\_\_\_ CNIC No \_\_\_\_\_ address \_\_\_\_\_, whose signature appears below, to be the true and lawful attorney, and authorized the said attorney to sign the bids, running bills, variation orders, collect cheques and execute all the necessary matters related there to (other than those mentioned below), in the name and on behalf of the bidder/contractor in connection with the execution, completion and maintenance of the Contract for the „Rehabilitation work of family flats at Shaheed BB University Sheringal Dir Upper as per bid/contract documents.

**WHEREAS;**

1. This power of attorney shall be considered and treated cancelled if so directed by the employer due to any reason (as per Conditions of the Contract).
2. This Power of attorney is revocable and can be terminated at any stage by the bidder/contractor.
3. The contract agreement and final bill shall not be signed by the attorney holder.
4. The attorney holder is not entitled to sue against the employer.
5. The attorney holder is not authorized to open bank account in his own name for receiving and depositing cheques from the employer in respect of above bid/contract.
6. The attorney is not authorized to terminate the contract.

**AND WHEREAS;** This power of attorney is not subletting of contract.

- Signature of the Owner of the Firm/Company (Bidder/Contractor): \_\_\_\_\_
- Name of the Owner of the Firm/Company (Bidder/Contractor): \_\_\_\_\_
- CNIC No of the Owner of the Firm/Company (Bidder/Contractor): \_\_\_\_\_
- Seal and Name of Firm/Company: M/S \_\_\_\_\_
- Signature of the Attorney: \_\_\_\_\_
- Name of the Attorney: \_\_\_\_\_
- CNIC No of the Attorney: \_\_\_\_\_

|   |  |
|---|--|
| Witness-I.<br>Signature: _____<br>Name: _____<br>CNIC No: _____<br>Address: _____ | Witness-II.<br>Signature: _____<br>Name: _____<br>CNIC No: _____<br>Address: _____ |
|---|--|

Dated on \_\_\_\_\_ day of \_\_\_\_\_ [date of signing]

Note: The Bidder should include such Power of Attorney in its bid in original, if he desired to appoint an attorney.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**Appendix-E to Bid**

Shall be submitted by the bidder/contractor on non-judicial stamp paper of Rs. 100/- or above.

**DECLARATION FOR SECURITY AND SECRECY AT SHAHEED BB UNIVERSITY**

We the M/S \_\_\_\_\_ & Co. (the bidder/contractor) do hereby solemnly declare on oath that;

1. We shall abide the University Rules and Regulations in addition to responsibilities assigned to us under the contract,
2. We shall not share the data, information, secrecy pertaining to the university as well as our contract, i-e drawings and other documents of the Project with irrelevant persons/organizations,
3. We shall hire only Pakistani labour of good character and not the foreigners, unless required for a particular job as per bid/contract (for which we shall submit request for prior approval of the Competent Authority of Shaheed BB University Sheringal, Dir Upper),
4. We shall not involve in any political activity in the University premises.

- Signature of the Owner of the Firm/Company  
(Bidder/Contractor): \_\_\_\_\_
- Name of the Owner of the Firm/Company (Bidder/Contractor): \_\_\_\_\_
- CNIC No of the Owner of the Firm/Company (Bidder/Contractor): \_\_\_\_\_
- Seal and Name of Firm/Company:  
M/S \_\_\_\_\_

---

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

### APPROVED LIST OF MANUFACTURERS

The manufacturers reference provided herein below are indicative of minimum quality and specifications required for such materials. Any other manufacturer items having at least the same quality and specifications are acceptable subject to the approval of the employer/engineer.

The contractor should note that only material from those manufacturers specified in the list of approved manufacturers shall be allowed to be used on this project. The contractor shall submit literature, catalogue and samples etc. Of all the items from each of the specified manufacturer to the employer/engineer whose decisions shall be final. For finishing items like painting, tiling, etc. Mock-up samples shall be provided for approval.

Onus lies with the contractor for establishing the genuineness of any material, product, item for its make. Origins are as specified below.

| Ser. | Description                       | Manufacturer   |
|------|-----------------------------------|--|
| 1    | Crushed Stone                     | Margala or equivalent approved quarry meeting the specifications/ tests      |
| 2    | Sand                              | Lawrancepore or equivalent approved quarry meeting the specifications/ tests |
| 3    | Mild Steel Bars                   | Fazal, Peco, Ittehad, Metropolitan, Nawab, Razzaq, Mughal                    |
| 4    | Bricks                            | WM, 33 mark, or from approved kiln confirming the specifications.            |
| 5    | Cement                            | Chirat, Kohat, Fuji, Askari, Bestway,  |
| 6    | Paving Tiles                      | Tuff Tiles, Izhar, Envicrete,  |
| 7    | False Ceiling                     | Daiken (Japan), Dampa (Denmark), Owa (Germany)                               |
| 8    | PVC Tiles                         | Decora   |
| 9    | Anti Termite                      | Termidor, Biflex, Mirage   |
| 10   | Construction Chemicals            | MBT, Sika, Fosroc  |
| 11   | Aluminum Works (Door and Windows) | Pak Cables, Alcop, Thermec Engg Co. Alhali Aluminum Co.                      |
| 12   | Paints/Distemper                  | Robbialac Berger, ICI (Dulux), Paintex,                                      |
| 13   | Iron Mongery/Hardware             | Alpha, Baber   |

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

|    |                                       |  |
|----|---------------------------------------|--|
| 14 | Glass/glazing                         | Khawaja, Nawshera Prince                                   |
| 15 | Sanitary Wares, Cocks, Mixers etc.    | Baig, Manga, Master, Faisal, Sonex, Super Asia,            |
| 16 | Glazed Ware/WC etc.                   | ICL, Forte, Karam, Cera, 3 Star, Master,                   |
| 17 | Flushing Cistern (Plastic)            | Master, Golden, Baig, Super Asia,                          |
| 18 | GI Pipes                              | IIL, Victory, Jamal, Bashir Pipes                          |
| 19 | GI Fittings                           | China Make   |
| 20 | PPRC Pipes                            | Plastherm, Raktherm, Dadex                                 |
| 21 | uPVC Pipes, Fittings                  | Shafisons Engg (Pvt) Ltd, Beta Pipes, Snow, Dadex (Nikasi) |
| 22 | CI Spun Pipes, Covers                 | CI Engg. Corp, Teepu, Alphine, NPC, CME, BKM, MK Traders,  |
| 23 | Gate Valve                            | Anwar, Super Asia  |
| 24 | Stainless Steel Sinks                 | Atlas, Super Asia,   |
| 25 | Fire Hose Cabinet and Extinguishers   | Haseen Habib (Pvt) Ltd.                                    |
| 26 | Ceramic Tiles                         | Master, Shabbir, Stile, Emco,                              |
| 27 | Wires and Cables                      | Fast Cables, Pakistan Cables, Newage, AGE, Pioneer Cables  |
| 28 | Telephone Cables                      | Siemens, Pakistan Cables                                   |
| 29 | Circuit Breakers/Change over switches | Terasaki (Japan)   |
| 30 | Switches and Sockets                  | Bosch, Milano, Legrand, Clipsal, ABB, PPI Switch Kids,     |
| 31 | PVC Pipes                             | Shavyl, Glaco, Beta, Popular, Tesco                        |

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|    |                                  |  |
|----|----------------------------------|--|
| 32 | PVC Ducts                        | Dura, Adamjee.   |
| 33 | Lights (Fittings/Fixtures)       | Philips, Paklite, Sunlight, Indalux, Illume, Pierlite                  |
| 34 | Telephone Exchange               | Siemens, Panasonic, Nortel   |
| 35 | Fire Alarm System                | Bosch, Tyco, GST UK, Siemens,  |
| 36 | HT/LT Panels etc.                | Siemens, PEL, FICO   |
| 37 | Transformers/Poles/Structures    | As per WAPDA Spec. (Siemens, Climax, J&P, PEL)                         |
| 38 | Earthing & Grounding Accessories | Furse, Erico, Panduit, Crosheind                                       |
| 40 | DG Set                           | Cater Pillar, FG Wilson, Siemens, Mitsubishi, Cummins Power            |
| 41 | Alternator                       | Siemens, Newage, Stamford, Cummins, Leroy Somer (France) Cater Pillar. |
| 42 | Ceiling fans                     | Asia, Millat, Climax, GFC, Younas, Pak Fans, Breeze                    |
| 43 | Exhaust and Bracket fans         | Younas, Pak Fans   |
| 44 | Cooking Rang                     | Skyflame, Nargas, Corona   |
| 45 | Gas Room Heater                  | Nargas, Firex, Singer, Ravi, Corona, tasfa, marvel,                    |
| 46 | Geyser                           | Singer, Nargas, ambassador, corona, admiral, Super Asia.               |
| 47 | Water Cooler                     | Meco, Comfort, Tasfa, Nargas, Corona,                                  |
| 48 | Water Filters                    | So Safe, Aqua Safe   |
| 49 | Air Conditioners (Window Type)   | PEL, Climax, General Agnause,  |
| 50 | Air Conditioners (Split Type)    | Acson, Daikin, Waves, Mitsubishi                                       |

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# FORMS

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**FORM OF PERFORMANCE SECURITY  
(Insurance AA Rating)**

Guarantee No. \_\_\_\_\_

Executed on \_\_\_\_\_

Expiry date \_\_\_\_\_

[Letter by the Guarantor to the Employer]

Name of Guarantor (Bank) with address: \_\_\_\_\_

(Insurance AA Rating)

Name of Principal (Contractor) with address: \_\_\_\_\_

Penal Sum of Security (express in words and figures) \_\_\_\_\_

Letter of Acceptance No. \_\_\_\_\_ Dated \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bidding Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal we, the Guarantor above named, are held and firmly bound unto the \_\_\_\_\_ (hereinafter called the Employer) in the penal sum of the amount stated above for the payment of which sum well and truly to be made to the said Employer, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has accepted the Employer's above said Letter of Acceptance for \_\_\_\_\_ (Name of Contract) for the \_\_\_\_\_ (Name of Project).

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Employer, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of

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Seal \_\_\_\_\_  
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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 9, Defects Liability, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We, \_\_\_\_\_ (the Guarantor), waiving all objections and defenses under the Contract, do hereby irrevocably and independently guarantee to pay to the Employer without delay upon the Employer's first written demand without cavil or arguments and without requiring the Employer to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Employer's written declaration that the Principal has refused or failed to perform the obligations under the Contract which payment will be effected by the Guarantor to Employer's designated Bank & Account Number.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the Principal (Contractor) has duly performed his obligations under the Contract or has defaulted in fulfilling said obligations and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Employer forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above-bounden Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Witness:

1. \_\_\_\_\_

\_\_\_\_\_  
Corporate Secretary (Seal)

2. \_\_\_\_\_

\_\_\_\_\_  
Name, Title & Address

\_\_\_\_\_  
Guarantor (Insurance AA Rating)

Signature \_\_\_\_\_

Name \_\_\_\_\_

Title \_\_\_\_\_

\_\_\_\_\_  
Corporate Guarantor (Seal)

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

## FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the "Agreement") made on the \_\_\_ day of \_\_\_\_\_ 2020 between \_\_\_\_\_ (hereinafter called the "Employer") of the one part and \_\_\_\_\_ (hereinafter called the "Contractor") of the other part.

WHEREAS the Employer is desirous that certain Works, viz \_\_\_\_\_ should be executed by the Contractor and has accepted a Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW this Agreement 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 Letter of Acceptance;
  - (b) The completed Form of Bid along with Schedules to Bid;
  - (c) Conditions of Contract & Contract Data;
  - (d) Preamble and Priced Bill of Quantities.
  - (e) The Specifications; and
  - (f) The Drawings
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy defects therein in conformity and in all respects within the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor, in consideration of the execution and completion of the Works as per provisions of the Contract, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS WHEREOF the parties hereto have caused this Contract Agreement to be executed on the day, month and year first before written in accordance with their respective laws.

Signature of the Contactor

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

(Name, Title and Address)

Signature of the Employer

(Seal)

Witness:

(Name, Title and Address)

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

# **SPECIFICATIONS - SPECIAL PROVISIONS**

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## **SPECIFICATIONS - SPECIAL PROVISIONS**

### **1. GENERAL**

- 1.1 Specifications – Special Provisions shall form an integral part of Bid & Contract documents.
- 1.2 The Contractor shall notify all sub-contractors of the provisions of these Special Provisions.

### **2. DESCRIPTION OF PROJECT AND SITE**

- 2.1 Administrative Approval shall be granted by the Vice Chancellor Shaheed BB University.
- 2.2 The Employer shall give to the Contractor possession of the area designated and defined as “the Site” on the drawing or as may be required to implement the Works.

### **3. CODES, STANDARDS AND CERTIFICATES**

#### **A. Applicable Standards**

Except as otherwise provided by these Specifications or the Drawings, all materials, equipment and fabrication and testing thereof shall conform to the latest applicable standards and codes referred in the Specifications by use of the abbreviations explained below:

|        |   |
|--------|---|
| ACI    | - American Concrete Institute (USA)                                 |
| AISI   | - American Iron and Steel Institute (USA)                           |
| AISC   | - American Institute of Steel Construction (USA)                    |
| ANSI   | - American National Standard Institute (USA)                        |
| ASTM   | - American Society for Testing and Materials (USA)                  |
| AASHTO | - American Association of State Highway & Transportation Officials. |
| AWS    | - American Welding Society (USA)                                    |
| BS     | - British Standards (UK)  |
| CP     | - Codes of Practice (UK)  |
| PS     | - Pakistan Standards (Pak)  |
| SSPC   | - Steel Structures Painting Council (USA)                           |
| UBC    | - Uniform Building Code (USA)                                       |
| USBR   | - United States Bureau of Reclamation (USA)                         |
| ASA    | - American Standard Association                                     |
| ASCE   | - American Society of Civil Engineers.                              |
| ICAO   | - International Civil Aviation Organization                         |
| BSICP  | - British Standard Institute Code of Practice                       |
| PCA    | - Portland Cement Association                                       |
| PSQCA  | - Pakistan Standard & Quality Control Authority.                    |

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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.

**B. Standards other than those Specified**

Where requirements for materials or equipment are specified by reference to a standard which has its origin in one country, it is not the intention to restrict the requirements solely to that standard and that country. Other standards, including standards of other countries, will be accepted provided the requirements thereof, in the sole opinion of the Engineer are at least equal to the requirements of the standard specified. The Contractor may propose to the Engineer an equivalent standard other than that specified, in which case he shall submit the proposed standard and all other information required and shall submit written proof that his proposed standard is equivalent in all significant respects to the standard specified. All submissions must be made in the English language.

**C. Codes and Standards at Site**

The Contractor shall supply and have at his site office:-

- a) Copies of all latest editions of codes and standards referred to in these Specifications or equivalent codes and standards as approved by the Engineer.
- b) Catalogues and published recommendations from manufacturers supplying products and materials for the project.
- c) The Contractor shall provide manufacturer's or supplier's materials which must meet the requirements of a specific code or standard as stated in these Specifications.

**4. MANUFACTURER'S RECOMMENDATIONS**

Installation of manufactured items shall be in accordance with procedures recommended by the manufacturer or as approved by the Engineer.

**5. UNITS OF MEASUREMENTS**

As far as possible the Metric System of Units shall be used throughout the Project. However, keeping in view the local practices, knowledge, experiences and capabilities of the Contractor skilled/unskilled staff and materials availability, the Imperial System (FPS System) of Units (i-e British system) has been used in the drawings and pricing BoQ and the same will be adopted in the entire project.

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## **6. PLANT, EQUIPMENT AND TOOLS**

The Contractor shall provide at his own cost, modern plant, including batching plant for concrete work equipment and tools which are adequate and benefitting to the nature, magnitude and size of contracted Works, in strict compliance with the requirements of the General Conditions of Contract, Conditions of Particular Applications and Technical Specifications.

## **7. STORAGE & HANDLING FACILITIES**

The Contractor shall make his own arrangements for providing the necessary space for the storage of plant, equipment, materials and for his temporary office, in and around the site of works, during the currency of the Contract.

## **8. FIELD LABORATORY AND TESTING**

### **8.1 General**

The Contractor shall provide and maintain a field laboratory well equipped with approved equipment to perform all tests that shall be required by the Engineer for quality assurances. These tests shall be performed by Contractor's competent personnel in accordance with quality control programme as established by the Contractor and approved by the Engineer. If the Engineer so desires, the Contractor shall at his own cost, facilitate performing of certain tests in any other laboratory as designated by the Engineer.

- The Contractor shall employ qualified material Engineer, Technicians and helpers for managing the laboratory activities and shall provide any assistance, from time to time or whenever required by the Engineer for testing purposes.
- The Field Laboratory, including all equipment and technical staff shall be placed at the disposal and direction of the Engineer during the entire period of the Contract.
- The Contractor shall keep a complete record of all quality tests performed at site.
- All quality control tests shall be carried out in accordance with applicable Standards and Codes.

### **8.2 Field Laboratory Equipment Requirements**

The Laboratory shall be well equipped with new, unused and latest Equipment to perform tests as per Technical Specifications and General Conditions of Contract. Additional equipment/materials shall be supplied by the Contractor as and when required by the Engineer to perform any specified test, at no additional cost to the Employer.

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The laboratory shall also be equipped with new, unused furniture, fittings and fixtures. If any equipment, furniture, fitting or fixture becomes unserviceable for any reason what so ever, the Contractor shall promptly replace the same as and when directed by the Engineer.

### **8.3. Method of Payment**

The cost of providing, running and maintenance of the laboratory, equipment, materials and staff, testing charges for materials to be supplied by the Contractor and all other tests to be performed in any other laboratory designated by the Engineer shall be deemed to be included in the rates, prices are quoted by the Contractor and no separate claim for payment on this account shall be entertained by the Engineer.

In case the Contractor does not provide the specified equipment and testing facility, then the same shall be done from the approved labs such as UET lab etc. and payment made alongwith 40% O/H shall be deducted from Contractor (as per direction of Engineer).

## **9. SURVEYING INSTRUMENTS (if required by the Engineer)**

### **9.1 General**

The minimum quantity of survey equipment is stated below which shall be available with the Contractor at site of Works along with qualified Surveyors and Survey Helper. The equipment shall be maintained throughout the Contract Period and replaced by the Contractor in case of damage or loss. The survey equipment shall be made available to the Engineer when directed. All surveying equipment shall be in excellent working conditions.

### **9.2 Surveying Equipment Required**

The Contractor shall provide and maintain the following surveying equipment at site.

- |      |   |        |
|------|---|--------|
| i.   | Electronic Total Station with accessories                                     | 1 No.  |
| ii.  | Steel measuring tapes 30 m long   | 2 Nos. |
| iii. | Steel measuring tapes 6 m long  | 2 Nos. |
| iv.  | All other miscellaneous tools, equipment and materials required in surveying. |        |

## **10. APPROVAL OF MATERIALS AND PLANT**

### **10.1 Quality of Materials**

All materials, fixtures, fittings, supplies and plant to be furnished under the Contract shall be new and conforming to standards of first grade quality both in-terms of workmanship and design. No inferior or low-grade materials, supplies or articles shall either be approved or accepted. All permanent Works, whether of installation, assembly or of construction as envisaged under the Contract shall be performed

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in a first-class and workmanlike manner. While asking for prices for materials intended for delivery to the site and incorporation in the Works under any portion of these Specifications, the Contractor shall provide the manufacturer or supplier with complete information as may be necessary to secure compliance to this Clause and, in every case, he shall quote this Clause in full to each such manufacturer or supplier.

## **10.2 Submission of Samples and Data**

- 10.2.1 The Contractor shall furnish for approval of the Engineer with reasonable promptness all samples as directed by the Engineer or specifically called for in the Specifications and in accordance with the time schedule provided in the schedule of submittals. The Engineer shall check and approve such samples with reasonable promptness only for conformance with the design concept of the Works and for compliance with the information given in the Contract Documents. All work shall be in accordance with approved samples.
- 10.2.2 Samples shall be furnished so as not to delay fabrication, allowing the Engineer reasonable time for consideration of the sample submitted.
- 10.2.3 Each sample shall be properly labeled with the name and quality of the material, manufacturer's name, name of the project, the Contractor's name and the date of submission, and the Specifications Article number to which the sample refer.
- 10.2.4 The manufacturer's installation directions shall be provided with each sample. The Contractor shall pay all transportation costs and deliver samples to the Engineer's office, Site or testing laboratory as directed by the Engineer.
- 10.2.5 Samples shall be of adequate size to permit proper evaluation of the material by the Engineer. Where variations in colour, texture, dimensions or other characteristics are to be expected, the Contractor shall submit samples showing the maximum range of variation. Materials exceeding the range of variation of the approved samples shall not be used on the Work.
- 10.2.6 In order to permit coordinated selection of colours and finishes, the Contractor shall deliver samples of all related items to the Engineer at one time. Samples of such materials shall not be approved until all related samples have been submitted.
- 10.2.7 If both Shop Drawings and samples are required for the same item, the Engineer may require both to be submitted before approving either.
- 10.2.8 The Contractor shall erect Mock-up samples of finished items (such as wooden/aluminum doors/windows/ventilators, all exterior/interior finishes including tile work, concrete pre-cast elements like

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jali/grill work, false ceiling, etc.) where specifically called for in the documents or as directed by the Engineer.

The Mock-up samples shall be preserved/protected by the Contractor till the end of the project or as directed by the Engineer.

- 10.2.9 No acceptance or approval of any Shop Drawings or sample, or any indication or request by the Engineer on any Shop Drawings shall constitute an authorization for any increase in the Contract Sum.

### **10.3 Inspections**

All material and Plant furnished and all work performed under this Contract will be subject to inspection by the Engineer at all times and in all states of completion both off-Site and on-Site. The Contractor shall furnish promptly without additional charge, all facilities, transportation, travelling, boarding, lodging, labour and materials reasonably needed for performing such inspection and testing as may be required by the Engineer.

### **10.4 Approved Sample at Site**

The Contractor shall, at all times, keep on the Site approved samples. All such samples shall be made available to the Engineer as and when required.

## **11. BAR BENDING SCHEDULE**

Bar bending (reinforcement bars) schedule of all structural drawings shall be prepared by the Contractor and submitted in triplicate to the Engineer for approval, which shall become basis of payment upon approval by the engineer.

## **12. DRAWINGS**

### **12.1 Bid Drawings**

Bid Drawings issued with the Bidding Documents, called the Bid Drawings, showing general scope of the work to be performed by the Contractor. The Drawings are generally in sufficient detail which may be used as a basis for construction, fabrication and for placing orders for materials subject to corrections based on the future issue of supplementary/additional/modified Drawings as provided under Sub-Clause 12.2 Hereof.

### **12.2 Construction Drawings, Supplementary Drawings**

After award of Contract, the Bid Drawings may become Construction Drawings.

The Engineer shall have authority to issue to the Contractor, from time to time, such supplementary additional/modified Drawings and instructions as shall be necessary for the purpose of the proper and

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Adequate execution and completion of the Works and the remedying of any defects therein. The Contractor shall follow these drawings.

**12.3 Definition of Term Drawings**

The term Drawings as used in the Specifications means the Drawings referred in Clauses 12.1 and 12.2 above.

**12.4 Checking of Drawings**

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

**12.5 Copies of Drawings**

Drawings will be issued to the Contractor as described below.

**12.5.1 Bid Drawings (at Construction stage)**

One (1) set of the Construction Drawings will be issued to the Contractor at the time of Construction free of charge. Additional sets will be provided at cost of reproduction upon written request of the Contractor.

**12.6 Drawings to be furnished by the Contractor**

The Contractor shall submit to the Engineer for review, such drawings as are required under the Contract, sufficiently in advance of the work intended to be executed.

**12.6.1 Reinforcement Drawings**

Reinforcement placement drawings and bar bending schedules (to be provided by the Contractor as per clause 11 above) of all RCC work shall be prepared by the Contractor and submitted in triplicate to the Engineer for approval, sufficiently in advance of the works in which they are intended to be used.

**12.6.2 Shop Drawings**

(a) The Contractor shall submit to the Engineer for review three (3) copies of all drawings to be issued for setting out, fabrication, supply order and construction; based on data, requirements, dimensions, details, codes, standards and design provided in the drawings issued by the Engineer. Such drawings shall be submitted at least twenty-eight (28) days before they are required for use. The Engineer may notify the Contractor that a drawing fails to comply with the relevant requirement of the Contract, in which case the drawing shall be rectified and resubmitted for approval at the Contractor's cost. Fabrication or construction shall not commence on any part of the Works until the shop drawings or construction drawings for that part of the Works have been approved by the Engineer.

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The Works shall be executed in accordance with the drawings as approved by the Engineer. If the Contractor wishes to modify any approved drawings, he shall immediately notify the Engineer and submit revised drawings for approval. If the Engineer instructs that further drawings are necessary for executing the Works, the Contractor shall prepare such drawings and submit them for approval.

The Contractor at his cost shall rectify errors, omission, ambiguities, inadequacies and other defects.

Approval by the Engineer, in accordance with this paragraph, shall not relieve the Contractor of any of his responsibilities under the Contract.

- (b) The shop drawings shall be properly identified indicating the part of the Works, the name of the contractor / supplier etc., the date of preparation and the dates of all revisions. The Shop Drawings shall be complete and shall show the design dimensions, proposed materials to be used, finishes, type of shop paint and all other details in connection thereto.
- (c) Where adjoining work requires shop drawings, the Contractor shall prepare and submit composite shop drawings, which shall show and define the work under all affected trades. If the Contractor executes work before coordinating with other trades so as to cause interference with work of those trades, he shall make changes necessary to correct the conditions without extra cost to the Employer.
- (d) No changes shall be made by the Contractor in the resubmitted shop drawings in excess of the corrections spelled out by the Engineer and in a separate note on the shop drawings.
- (e) No work in the shop shall be started and no material or plant ordered until the Engineer has approved the shop drawings. It shall be the responsibility of the Contractor to submit the shop drawings on a schedule that allows reasonable time for checking and approval and subsequent fabrication. Failure to submit shop drawings in ample time for checking, correcting, and rechecking will not justify extension of time for completion of the Works.
- (f) The Contractor shall also check and verify all site measurements whenever requested by other Specialist Contractors or by other Sub-Contractors to enable them to prepare their own shop drawings and pass on the information with sufficient promptness, so as not to delay the work in any way. A copy of all such information passed on shall be given to the Engineer.

### **12.6.3 As-Built Drawings**

The Contractor shall, at all times, keep on Site a separate set of prints of all drawings on which all significant changes between the work shown on the Drawings and that which is actually constructed, shall be noted neatly, accurately and promptly as the work progresses. The Sub-Contractor(s) for plumbing, mechanical and electrical shall, at all times, keep on Site, a separate set of prints of the drawings (showing their parts of the Works) on which all significant changes between the work shown on the Drawings and

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that which is actually constructed, shall be noted neatly, accurately and promptly as the work progresses. Such drawings shall show the exact physical location and configuration of the works as actually installed.

The Contractor shall, within fourteen (14) days of issuance of Taking-Over Certificate for whole of the Works, furnish to the Engineer for his approval two (2) copies of such marked up drawings. One (1) copy of each of the marked up drawings approved by the Engineer shall be returned to the Contractor by the Engineer and these shall be used for the preparation of the As - Built Drawings.

The Contractor shall furnish to the Engineer six (6) complete sets and one reproducible copy of all As-Built Drawings along with soft copies within twenty eight (28) days of receipt of drawings stated above, from the Engineer.

**13. PROTECTION OF THE WORKS**

The Contractor shall whenever necessary cover up and protect the works from weather and damage by his own or other workmen performing subsequent operation. The Contractor shall provide all necessary dustsheets, barriers and guard rails and clear away the same at completion.

**14. RESTORATION AND CLEANING**

Upon completion of the works, the Contractor shall restore all items covered by the Contract to the satisfaction of the Engineer.

The Contractor shall do regular cleaning and clear away all rubbish and excess materials that may accumulate from time to time on completion and before handing over. Upon completion of the works he shall obliterate all signs of temporary construction facilities such as work areas, structures, foundations of temporary structures, stock piles of excess or waste materials, or any other vestiges of construction, as directed by the Engineer. All buildings shall be cleaned; floors and paving scrubbed and the works and site shall be left in a clean and satisfactory state for immediate use and occupation. Care shall be taken not to use any cleaning materials, which may cause damage to the surface to be cleaned.

The Contractor shall also take all necessary precautions to keep the works and site free from vermin during construction and he shall leave the works vermin free on completion. Application of pest control agents shall not commence until the specific product, name, method and extent of application have been submitted to and approved of by the Engineer.

**15. SITE OFFICES AND TEMPORARY FACILITIES TO BE PROVIDED BY THE CONTRACTOR**

**15.1 Contractor's Office, Facilities Etc. (not required)**

The Contractor shall establish and maintain Site office. The Contractor shall provide all facilities in connection with the execution, completion, of the Works, remedying defects therein and maintenance of

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the utilities services. The facilities shall not be limited to the Contractor's Site Office, labor camps, work yard and storage areas, temporary water supply, waste water disposal, temporary electricity, medical unit, temporary roads, fire protection and firefighting equipment etc. The Contractor shall be solely responsible for arranging all utilities and the Contractor shall setup, maintain and operate an architectural and engineering facility at sites with adequate number of technical and support staff as well as equipment required for particular nature of job covered under the Contract to prepare drawings/shop drawings for approval of the Engineer.

The Contractor shall arrange his labour camp, work yard, storage area and site offices within the site areas available at the sites.

### **15.2 Temporary Roads. (not required)**

The Contractor shall prepare and maintain such temporary roads as may be necessary, from the site to the nearest road and also within the plot. Such roads shall be positioned strictly in accordance with the Engineer's instructions and the Contractor shall reduce or control any dust nuisance by regularly spraying water and compaction as directed.

### **15.3 Temporary Services**

#### **15.3.1 Temporary Water Supply, (not required)**

The Contractor shall make his own arrangement for water resources necessary potable and other water for construction purposes for all trades at least three (3) points at different locations within the site and from where the Contractor shall take-off the piping at the desired location of construction. The Contractor shall make his own arrangements and pay charges for water service installation, maintenance and removal thereof, and pay the costs of water for all trades at rates mutually agreed with the Employer to the concerned local agency.

At completion of the work, the temporary water services equipment and piping shall be removed by the Contractor at his own expense.

#### **15.3.2 Temporary Electricity.**

The Contractor, at his own expense shall provide temporary electricity connection at three (3) points and at locations within the site areas from the PESCO and shall make all the necessary arrangements for temporary electricity services, pay all expense in connection with the installation, operation and removal thereof and pay the costs of electricity consumed by all trades at commercial rates of PESCO.

Notwithstanding to above, to ensure uninterrupted work at site against any unforeseen reasons he shall arrange and furnish an Electric Power Generating set at site and maintain the generating set in perfect working condition through-out the duration of Contract. The generating power of the set shall be

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Sufficient to operate all plant and equipment as well as the camps and offices of the Contractor and the offices of the Engineer/Employer, during construction at site. Should the set fail to meet the required demand at site or fail to function or operate, the Contractor shall immediately replace the same with other generating set/sets to the satisfaction of the Employer as well as the Engineer.

Temporary lighting system shall be furnished, installed and maintained by the Contractor as required to satisfy the minimum requirements for safety and security and to the satisfaction of the Engineer.

At completion of construction work, temporary electricity services shall be removed by the Contractor at his own expense.

### **15.3.3 Waste Disposal**

The Contractor shall make such temporary provisions as may be required in order to dispose of any chemicals, fuels, oils, grease, bituminous materials, waste and soil waste and the like without causing pollution to either the site or the environment. Disposal of any materials, wastes, effluent, garbage, oil, grease, chemicals and the like shall be in areas specified by the concerned local authority proposed by the Contractor and subject to the approval of the Engineer. If any waste material is dumped in unauthorized areas the Contractor shall remove the material and restore the area to the condition of the adjacent undisturbed area. If necessary, contaminated ground shall be excavated, disposed off as directed by the Engineer and replaced with suitable fill material compacted and finished with topsoil all at the expense of the Contractor.

### **15.3.4 Fire Protection**

The Contractor shall provide and maintain adequate fire protection in the form of barrels of water with buckets, fire bucket tanks, fire extinguisher, or other effective means ready for instant use, distributed around the project and in and about temporary inflammable structures during construction of the works.

Gasoline and other flammable liquids shall be stored in and dispensed from safety containers approved by the Engineer and storage shall not be within building.

Torch-cutting and welding operations performed by the Contractor shall have the approval of the Engineer before such work is started and a chemical extinguisher is to be available at the location where such work is in progress.

The Contractor shall follow the instructions and specifications of the Civil Defense Department or any other local department concerned with such activities.

### **15.4 Sign Board. (not required)**

The Contractor shall erect and maintain at the Site in a location to be approved by the Engineer two (2) Sign Boards of minimum 6"x4" dimensions approved by the Engineer. The Sign Boards shall be made of metal. It shall be mounted on steel posts securely anchored and braced. The Contractor shall paint on the

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_



Sign Boards, the name of the Works, and the names of the Employer, Engineer, the Consultant and the Contractor both in English and Urdu Language.

**15.5 Site Offices and other Facilities for the Engineer / Engineer Representative.**

(the clause 15.5 and all sub clauses are not applicable to this contract).

The Contractor shall, within fourteen (14) days of the commencement of any work at the Site provide for the exclusive use of the Engineer or thereto Resident Engineer the following:

**15.5.1 Office Accommodation. (not required)**

Office accommodation at site comprising covered area of not less than Two Hundred (200 Sft) alongwith washroom facility, of approved design and specification by the Engineer, along with suitable approaches. The site office shall also be furnished and equipped & maintained with adequate new and unused furniture and brand new equipment. The contractor shall provide courier, post, cargo, etc. and other miscellaneous office expenses/services of the Engineer representative site office.

**15.5.2 Utilities. (not required)**

The site office shall be connected to the electrical, HVAC, portable water supply and sewage disposal systems.

**15.5.3 Telephone. (not required)**

The Contractor shall provide the required one no. of STD /PTCL/Mobile Phone in use of the Engineer and shall pay monthly bill upto Rs. 1000/-.

**15.5.4 Computer Facility. (not required)**

One Internet DSL connections + One Laptop, Core i5, one A3 size HP color printer with all related cables, stabilizers, etc., along with adequate stationery on regular basis. Contractor, at his own cost shall also provide for the exclusive use of the Engineer a new and latest Digital Camera complete in all respects as per the approval of the Engineer or through the Resident Engineer.

**15.5.5 Transport Facilities.**

The Contractor shall provide transportation for Engineer/ Engineer Representative Staff in respect of testing in external labs and like in connection with the project/contract.

The Contractor shall maintain the site office of the Resident Engineer till the issuance & completion of Defects Liability Certificate & period

The site office as provided above shall become the property of the Contractor after the completion of the project.

No payment shall be made for the works involved within the scope of this section of specifications unless otherwise specifically stated in the Bills of Quantities or herein.

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The cost thereof shall be deemed to have been included in the Premium/ unit rates and total price quoted by the Contractor.

**15.6 Site Facilities to be provided by the Contractor. (not required)**

**15.6.1 General**

Without prejudice to the generality of the various clauses of the Contract, particular attention is drawn to the obligation of the Contractor to make his own arrangement at his own expense for the following.

**15.6.2 Labour Camps and Staff Residences**

The Contractor shall provide, operate and maintain labour camps and staff residences and are required for the proper and efficient progress of the work to house his own employees. For the purposes of operation and maintenance of the Camps and Residences, the Contractor shall comply with the rules of Pakistan Labour Camp Rules 1960 and all other applicable provisions of the Pakistan Labour Laws.

**15.6.3 Administrative and Field Office**

The Contractor shall provide, operate and maintain administrative and field offices required for his staff and would be responsible for Operation and Maintenance, furniture, equipment, appliances, janitor services and security of the same.

**15.6.4 Work yards and Storage Areas**

The Contractor shall provide, operate and maintain all sheds, fencing, foundations and all above ground structures required to store material or equipment brought on to the site by him. The Contractor shall be responsible for the security of his entire camps, residence, site and field offices work yard and storage area.

**15.6.5 Water Supply, Sewerage System and Electricity**

The Contractor shall make his own arrangement, at his own expense for provision, operation and maintenance of electric supply, reasonable supplies of raw and potable water and sewerage system at the site of works and his labour camps, staff residences and offices. The Contractor shall pay all fees, and charges (including bills) of whatsoever nature to the concerned departments (if any) in order to procure connections of the above facilities and thereafter using these facilities.

**15.6.6 Medical Care**

The Contractor shall be responsible for the medical care of the Project staff and labour and shall provide and maintain at his own expense suitable first aid center at site and camps for use by the Project staff and labor.

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### **15.6.7 Other Facilities**

The Contractor shall also be responsible for providing at his own cost other facilities for the Project staff and labor such as educational, recreational, transport, telephone and catering if required.

### **16. CONSTRUCTION PROCEDURES**

The Contractor shall advise the Engineer of proposed construction procedures in accordance with the General Conditions of Contract.

If the Engineer shall see that the work progress is slow in such a way that the work will not be completed in the time specified, then he shall order the Contractor to work overtime or in more shifts and the Contractor shall obey these orders without any additional payments and without any objections or request for compensation. In that case overtime payment of Consultant supervising team shall be charged to the Contractor & deducted from Bills & paid to the Consultant by the Employer.

### **17. NOTIFICATION TO ENGINEER**

The Engineer shall be notified daily in writing of the nature and location of the Works the Contractor intends to perform the next day so as to enable necessary inspection and measurement to be carried out. The Engineer may, if necessary, direct that longer notice be given of certain operations.

### **18. NIGHT WORK**

No Work shall be allowed at night unless specifically allowed by the Engineer/Resident Engineer under special circumstances. When work is done at night, the Contractor shall maintain from sunset to sunrise such lights on or about his work and plant as the Engineer may deem necessary for the proper observations of the work and the efficient execution thereof. The contractor shall be responsible to pay for the overtime payment and other expenses to the Resident Engineer staff.

### **19. WEATHER**

No work is to be undertaken when, in the opinion of the Engineer, the weather is not suitable that proper protection of the work cannot be ensured.

### **20. CO-ORDINATION WITH OTHER CONTRACTORS**

It shall be the responsibility of the Contractor to co-ordinate and keep-up good relations with other Contractors employed on site by the Employer.

### **21. ACCIDENT PREVENTION, PROTECTIVE EQUIPMENT**

The Contractor shall comply and enforce compliance by all his sub-contractors with the highest standards of safety and accident prevention in accordance with international standards and in compliance with all applicable laws, ordinances and statutory provisions.

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Seal \_\_\_\_\_  
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All requisite barriers, fences, warning signs, lights and other safety precautions as required for the protection of persons and property on or adjacent to the site shall be provided at the Contractor's cost.

All false work, scaffolding and handrails shall be well constructed and secured at all times. Where overhead work is being carried out, warning signs shall be installed at ground level clearly warning of the overhead work.

All warning signs shall be in two languages, English and Urdu, and shall at all times be maintained in a clean and legible condition, to the satisfaction of the Engineer.

Trash shall be removed at frequent intervals to the satisfaction of the Engineer.

**22. SETTING OUT OF WORK & SOIL INVESTIGATION SURVEY** *(not required)*

**22.1 Topographic Survey Reference Points, Lines & Re-confirmatory Soil Investigation**

The Contractor shall carry out detailed topographic survey of the project site showing all its existing features, services, levels, contours, plants etc. & establish benchmarks and/ or reference line at the Site in accordance with the instructions of the Engineer/Resident Engineer. The Contractor shall set out the work from these benchmarks and lines and submit the soft & hard copies of the survey plan to the Engineer/Resident Engineer. The Contractor shall also carry out re-confirmatory geo-tech investigation of the project site as determined by the Engineer/Resident Engineer with complete programme to be supplied by the Engineer's representative to check bearing capacity of the project sites, if so required and ordered by the Engineer subject to the approval of the Employer.

**22.2 Verification**

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

**22.3 Survey Instruments**

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

**23. MONTHLY JOINT PROGRESS MEETING**

A monthly Joint Progress Meeting (JPM) between the Engineer/ Engineer's representative, and Contractor shall be held on site to review, evaluate and discuss the progress of the Project.

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Any instructions issued to the Contractor through the minutes of the meeting shall have the same effect as instructions issued by the Engineer under General Conditions of Contract.

The Contractor shall make all necessary arrangements for such meetings, including the preparation and presentation with respect to the Project directed by the Engineer.

**24 PRECAUTION FOR POLLUTION**

Precautionary measures and facilities shall be provided by the Contractor at his own cost in carrying out the Works including dumping and disposal of spoils, in the manner approved by the Engineer to prevent environmental pollution.

**25. COORDINATION OF WORKS AT SITE**

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

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

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

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

**26. PAYMENT OF WORK**

No payment shall be made for the works involved within the scope of this section of specifications unless otherwise specifically stated in the Bills of Quantities or herein.

The cost thereof shall be deemed to have been included in the Premium/ unit rates and total price quoted by the Contractor.

**27 SHIFTING / RE-ROUTING OF SERVICES**

The contractor shall be responsible for shifting /re-routing/diversion of services if any in the site area and shall coordinate with the concerned agencies/department and facilitate the client for the purpose without any claim/cost.

**28. PREVENTIVE / PRECAUTIONARY AND SECURITY MEASURES**

Project site being located in the high security zone, the contractor shall make security clearance of his staff/labor and vehicles deployed at the project. Preventive / precautionary and security measures shall be

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adopted. Security passes shall be made by the contractor for his staff for identification purpose at their own cost and responsibility.

**29. DISMANTLING OF EXISTING STRUCTURE**

The contractor is required to undertake dismantling of existing structure, if any, falling in the project area for construction of the project work and visit the site to ascertain the quantum of work. The cost of dismantling work is deemed to have been covered under the quoted rate/bid.

**30. CONSTRUCTION & CHECKING AT SITE**

- 30.1 The contractor shall submit to the engineer in due time for approval and discussion, his proposal and plan as to the method and procedure to be adopted for the temporary and permanent works involved.
- 30.2 The submitting to these suggestions and arrangement, and the approval thereof by the engineer shall not relieve the contractor of his responsibilities and duties under the contract.
- 30.3 The carrying out of all work included in the contract is to be supervised by a sufficient number of qualified representatives of the contractor and full facilities and assistance are to be afforded by the contractor to manage, check & examine the execution of the works in accordance to the contract.
- 30.4 No physical work shall be carried out without prior approval of the Engineer's representative and in absence of Eng.'s rep, further to ensure quality work it is mandatory to submit to the Engineer on daily basis the inspection program for the next day and a check request book shall be maintained which shall be submitted for each activity along with supporting documents such as level sheet, bar bending schedule etc. This check request after approval by the Engineer shall be attached with monthly statement/IPA/IPC for verification of work done on site to the Engineer and to the Employer if asked.
- 30.5 The measurement sheets for each item of work carried out and claimed/submitted for payment shall be provided with a column showing number of approved check request confirming the physical execution of work in presence of the Engineer's Representative.

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# Volume-II

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**SPECIFICATIONS**  
**(TECHNICAL PROVISIONS)**

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# **SPECIFICATIONS (TECHNICAL PROVISIONS)**

## **1.0 GENERAL**

Unless otherwise specified herein all materials to be used shall strictly comply with the specifications included in these documents.

## **1.1 BURNT BRICKS**

They shall be well burnt without being vitrified. They shall be of uniform color regular in shape and parallel faces. They must be homogeneous in texture and emit clear ringing sound when struck. They shall be free from flaws and cracks. They shall not absorb more than 1/5<sup>th</sup> of their weight of water being soaked for one hour and shall show no signs of efflorescence on drying.

### **1.1.1 Size and Strength**

The nominal size of the bricks shall be 9"x 4-3/8"x2-11/6" (228x111x68mm) and the minimum size shall not be less than 8-5/8"x4-1/8"x2-5/8" (219x105x67mm). The compressive strength shall not be less than 2000 lbs/sq. inch.

## **1.2 FINE AGGREGATE**

### **1.2.1 Source**

Fine Aggregate shall be obtained from approved sources.

### **1.2.2 Grading**

Fine Aggregate shall consist of well graded sand stone screening other inert material of similar characterize-tics or a combination of these.

Fine Aggregate shall conform to the requirements of B.S. 882 and/or PS 243 Only. Fine Aggregate of grading zones 1 to 3 (B.S. 882) shall be used. Aggregate of zone A may be used for special mixes only after written approval.

### **1.2.3 Cleanliness**

Fine Aggregate shall be clean and free from clay lumps soft and flaky particles, shale alkali organic matter loam mica and injurious amounts of deleterious substances shall not exceed 5 percent by weight.

### **1.2.4 Quality**

Fine Aggregate shall be sharp cubical hard dense and durable.

### **1.2.5 Storage and Protection**

Fine Aggregate shall be attacked on a brick, wooden or other suitable platform so as to adequately protect it from dust and other admixtures. These may be washed if required.

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### **1.3 COURSE AGGREGATES**

#### **1.3.1 Source**

Course aggregates shall be obtained from an approved source. Coarse aggregate should conform to the requirements of B.S. 882 and/or P.S. 243.

The gradation limits shall conform to the requirements of the B.S. 882 Part-1, 1905 or any latest amendments. It shall consist of quarried crushed stone or other inert material and combination of these as specified or as approved.

Wherever feasible the normal maximum size of aggregate for cast-in-place reinforced concrete slabs and other thin members shall be ¾". If there are difficulties in placing such a concrete the maximum size may be restricted to ½" provided the requirements for strength are satisfied.

#### **1.3.2 Cleanliness**

Coarse aggregate shall be clean and free from soft friable thin or elongated pieces alkaline organic matter or injurious amounts of deleterious substances.

The sum of the percentage of all deleterious substances in any size shall not exceed 3 percent by weight. Cleanliness of the aggregate should conform to the requirements of ASTM C-117, C-142, C-123 and C-140.

#### **1.3.3 Quality**

Coarse Aggregate shall consist of well-shaped hard dense durable uncoated rock fragments as approved.

#### **1.3.4 Storage and Protection**

Coarse aggregate shall be stacked on a brick wooden or other suitable platform so as to adequately protect it from dust and other admixtures. Each type and size of aggregate shall be stacked separately. These may be washed if required and Contractor will do this without any extra charges.

### **1.4 BITUMINOUS MATERIAL**

#### **1.4.1 General**

The bituminous material shall be straight grade asphalt of 10/20 penetration for use in damp proofing work in DPC and filling in Expansion joints etc.

The material shall be of best quality manufactured in Pakistan and shall conform to the following specifications:-

- |    |                           |            |
|----|---------------------------|------------|
| a] | Specific Gravity at 77 °F | 1.02/1.04  |
| b] | Softening Point (R & B)   | 170/200 °F |

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|    |                              |           |
|----|------------------------------|-----------|
| c] | Penetration at 70 °F, 100gm. | 10/20     |
| d] | Ductility at 77 °F (cms)     | 4/7       |
| e] | Solubility in Cc 14 (Min.)   | 99.5%     |
| f] | Working Temperature          | 300/35 °F |

#### 1.4.2 **Protection/Test**

The approved quality of materials shall be brought in sealed containers or with a certificate of manufacture regarding the quality standard of the material. The storage and application of the material shall strictly follow the manufacturer's instructions.

#### 1.4.3 **Bituminous Material for Roof**

Special bitumen shall be used as sealing material for the roof, it shall be a mineral filled thixotropic special bitumen emulsion which meets A.I.B. standard No. 4683.03 and shall have the following properties:

|    |               |                                   |
|----|---------------|-----------------------------------|
| a] | Base Material | Bitumen/latex/coautchouc emulsion |
| b] | Solvents      | Free from Solvents                |
| c] | Consistency   | Soft Paste.                       |
| d] | Density       | 1.1 hm/cm <sup>3</sup>            |
| e] | Dry Residue   | 05 %                              |
| f] | Flash Point   | Non Flammable                     |
| g] | Heat          | Resistance Upto 150 °C (Dry Heat) |

#### 1.4.4 **Mastic Asphalt**

Mastic asphalt shall be used as sealing material for the foundation raft, it shall conform to B.S. Specifications 1097-Oct. 1973 for (Mastic Asphalt for tanking and damp proof course).

#### 1.4.5 **Special Imported Water Proofing Material (VANDEX), Sika, Fosrock,**

Special Imported Water Proofing material shall be used to completely water proof basement roof and joints. It shall be applied in accordance with the manufacturer's recommendations and the applicable drawings.

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## **1.5 BITUMENIZED PAPER/POLYTHENE**

### **1.5.1 General**

Unless otherwise specified the building paper shall conform to B.S. 4016. It shall be smooth stout and possess through water proofing qualities. Building Paper/Polythene sheet shall be used where specified in the Drawings. Double layer shall always be used with 2" (50 mm) side laps and 6" (150 mm) end laps wherever specified.

### **1.5.2 Test Sample**

The building paper if used shall weigh 40 to 50 Kg./100 meter square (8 to 10 lbs./100 Sft.). In case of polythene sheet the thickness shall not be less than 0.2mm (.008") per layer.

The samples shall be approved before incorporation in the work. The Contractor shall submit the samples which shall be retained till the completion of the work. The cost of such samples shall be deemed to be included in unit rate of the relevant items entered in the Bill of Quantities.

## **1.6 CLAY/EARTH**

### **1.6.1 General**

Clay shall be plastic and obtained from approved sources and shall have fine sand in the range of 20 to 30 %. It shall not contain more than 0.5% soluble salts; more than 0.2% sulphate more than 4% organic contents. It shall not contain any gravel, coarse sand, kanker, roots of grass and plant and other injurious matters.

### **1.6.2 Preparation**

Clay before use shall be dug up and left to weather for a week. It shall be thoroughly watered repeatedly turned over and tempered for at least 48 hours before use until it is homogeneous and stiff.

## **1.7 WIRE GAUZE**

### **1.7.1 General**

Unless otherwise specified the wire gauze shall be of best quality approved uniformly, woven wire webbing of 12 x12 meshes to 645 mm square (one Sq. Inch) made from 22 gauge galvanized iron wire. All panels shall be in one piece and no joints shall be allowed.

### **1.7.2 Fixing**

Wire gauze shall be fixed as shown on the drawings or as directed. The gauze shall remain tight to the full width without any sag.

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Seal \_\_\_\_\_  
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## **1.8 GLASS**

### **1.8.1 General**

Clear Glass shall be of best quality manufactured in Pakistan except as may be otherwise called for on the drawings.

#### **Quality**

The quality and specifications of glass used shall be as follows:-

All glass shall be of approved manufacture and quality.

Each kind of glass described below shall be labeled by its manufacturer and the labels left on until their removal is authorized:

- a) Sheet glass unless specified otherwise shall be flat drawn weighing not less than 6.87 gms/sq.c., (22-1/2 ounces per square foot) and shall be the type as defined in the British Standard Specification 952 or equivalent ASTM Standard.
- b) Plate glass unless specified shall be best quality bajri glass manufactured in Pakistan. It shall not be less than 5mm thick and at least as obscure as syenite glass.
- c) Plate glass unless specified otherwise shall be of the quality as defined in British standard 952 and shall be 5mm thick. Glazing compound for use in wooden frames for interior and exterior glazing shall conform to the requirements of B.S. 544. Compound for metal frames shall be as recommended by the manufacturer for the particular application.

### **1.8.2 Samples**

Samples of all kind of materials to be used in the job shall be submitted for approval to before incorporation in the work.

## **1.9 LIME**

### **1.9.1 Definition**

Unless otherwise specified "LIME" shall mean stone lime or Kanker Lime.

### **1.9.2 Source of Stone Lime**

Stone fat or white lime shall be manufactured from lime stone containing at least 90% pure carbonate of lime.

### **1.9.3 Source of Stone Lime**

Kanker lime shall be burnt from good quality kanker boulders having a blue grey fracture, free from sand grains. The kanker shall be quarried from an approved source.

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Seal \_\_\_\_\_  
M/S \_\_\_\_\_

#### **1.9.4 Storage**

Lime shall be stored in dry and weather proof sheds on a compact heap so as to expose as small an area as possible to air to prevent air slaking. Lime shall not be stored for a long period after burning but used as fresh as possible.

#### **1.9.5 General**

Wherever lime appears in specifications or Bill of Quantities it will be taken to mean "Lime Putty".

### **1.10 PAINTER AND DECORATOR**

#### **1.10.1 Conformity to Standards**

Except as otherwise specified, all painting work shall be carried out in conformity with British Standard Code of Practice CP-231 "Painting" as applicable to the work.

#### **1.10.2 Materials**

All materials used shall conform to the applicable British Standard Specifications and shall be used as per manufacturer's printed directions.

**Paints** shall be high grade enameled products of known manufacturer and, when approved, shall be delivered on the work in original unbroken packages bearing the manufacturer's brand and name.

**Color Pigments** shall be pure, non-fading and finely grounded and at least 99% passing through a 325 mesh sieve.

**Distemper** shall be obtained from an approved quality and make. It shall be delivered at site in original unbroken packages bearing the maker's name and brands. Any pigment content shall be lime proof.

**Snowcem** shall be delivered at site in original and sealed packages, bearing the manufacturer's brand and name.

**Brushes** All brushes used for Painting work shall conform to the requirements of B.S 2096.

**Lime** shall conform to B.S 890 "Building Lime".

**Wax Polish** shall be of best quality available in Pakistan and as approved.

**Spirit Polish** shall have shellac of approved quality.

#### **1.10.3 Color Schedule**

The color, shade and surface finish required for various materials shall be as approved.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

#### **1.10.4 Samples and Application Specifications**

Samples of the paints used for the work shall be approved as and same type of paint shall be used throughout.

Certified data, test samples and detailed application specifications shall be submitted for approval. If the material is to be tested, this will be got done by the Contractor at his own cost from an approved laboratory.

#### **1.11 VARNISH**

##### **1.11.1 Source**

Varnish shall be procured from an approved source or manufacture.

##### **1.11.2 Quality**

Varnish shall be clear, transparent and suitable for use on exterior or interior work, as specified and shall give a uniform and glossy coating, free from runs and specks. Varnish shall become surface dry not more than 6 hours for interior and 8 hours for exterior work and hard dry not more than 18 hours.

The loss in weight on heating in a suitable oven after placing on a metal dish at a temperature of 105 degree to 110 degrees centigrade for 3 hours shall not exceed 50%.

##### **1.11.3 Composition**

Unless otherwise specified it shall be best English Copal.

##### **1.11.4 Color**

The color and shade shall be as approved.

##### **1.11.5 Supply and Storage**

The ready-made varnish shall be packed in sealed tins and shall bear the batch number of production and the date of manufacture. The varnish shall be used after one year of its manufacture.

#### **1.12 DISTEMPER**

##### **1.12.1 Source**

Distemper shall be obtained from an approved source or manufacture as approved.

##### **1.12.2 Quality**

When thoroughly mixed and applied it shall give a uniform color free from runs and specks.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
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### **1.12.3 Storage**

Distemper shall be stored in sealed tins and only in such quantities as shall be consumed within one year of its manufacture.

## **1.13 TIMBER**

### **1.13.1 Source**

Timber shall be procured from an approved source and shall be in accordance with the requirements of B.S – Part1.

### **1.13.2 Quality**

Unless otherwise specified, timber shall mean Deodar wood for all carpentry, joinery and structural works, as specified in the drawings.

Timber shall be of good quality felled not less than two years before use for carpentry and four years for joinery work and shall be properly seasoned. Timber shall be uniform in texture, straight in fibers, free from open shakes, bore holes, fungus attack, rots, dots, decay, warps, twists, springs or cracks and all other defects and blemishes.

### **1.13.3 Sap Wood**

Sap wood shall not be permissible in any work i.e. in carpentry, joinery and structural works.

### **1.13.4 Knots**

Timber shall be free from knots, other than sound knots appearing on surface only and not exceeding ½” (15mm) diameter. Such loose or decayed dead knots shall not be permissible in any joinery and shall be cut out and plugged properly.

### **1.13.5 Shakes**

Straight splits or shakes shall be permissible in the ends up to a total for both ends of 2” (50mm) per meter of length at the time of passing.

Timber shall not be spongy or in brittle condition.

### **1.13.6 Size**

The round logs of timber shall not be less than 10” (3meters) and more than 40” (12meter) in length and 7” (2.1 meter) in girth. Tapered logs shall not be less than 4” (1.2 meter) in girth at the small end.

Squares shall be of the size not less than 10” (3 meter) in length and 16”x16” (400mm x 400mm) in cross section.

Sleepers shall be obtained from logs cut from sound and mature trees.

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### **1.13.7 Storage**

Timber shall be stacked on a raised wooden or paved platform to eliminate chances of white ant attack.

It shall be stacked under a proper shelter, where maximum aeration is possible without subjecting it to the direct sun, rain or other weathering agents.

### **1.13.8 Miscellaneous**

In all other respects, timber should conform to the applicable requirements of B.S. 1186.

## **1.14 WATER**

### **1.14.1 Source**

Water for construction shall be obtained from an approved source.

### **1.14.2 Quality**

Water shall be free from clay, vegetable, organic impurities and any other substance likely to cause efflorescence or interfere with setting of mortars or otherwise be harmful to the work. Broadly speaking any water which does not show an intensive odor or brackish test shall be considered suitable for building works, whereas water fit for drinking, shall be accepted as suitable for all engineering works. P.H. value of water shall range between 6 and 8. Where doubts exist as to the suitability of water it shall be tested in accordance with B.S. 3148.

### **1.14.3 Storage**

Water shall be stored in water tight tanks or containers adequately protected from the admixture of dust and other foreign matter.

## **1.15 PORTLAND CEMENT**

These specifications cover five types of port-land cement, as follows:-

**Type-1** For use in general concrete construction when the special properties specified for type-II, III IV and V are not required.

**Type-II** For use in general concrete construction exposed to moderate sulphate action, or when moderate heat of hydration is required.

**Type-III** For use when high early strength is required.

**Type-IV** For use when low heat of hydration is required.

**Type-V** For use when high sulphate resistance is required.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**1.15.1 Definition**

Portland cement is the product obtained by pulverizing clinker consisting essentially of hydraulic calcium silicates to which on additions have been made subsequent to calcinations, other than water and/or untreated calcium sulphate, except that addition of other non-deleterious materials may be added at the option of the manufacturer in an amount not to exceed 0.1%.

**1.15.2 Physical Requirements**

Portland cement of each of the five typos shown above shall conform to the requirements of ASTM Designation C-150 or B.S. Specifications No: 12.

**1.15.3 Packing and Marking**

When the cement is delivered in packages, the name and brand of the manufacturer and the type, shall be plainly identified thereon. When the cement is delivered in bulk this information shall be contained in the shipping invoice accompanying the shipment-A bag shall contain 50 kg. All cement shall be fresh and of approved origin and manufacture.

**1.15.4 Inspection**

Every facility shall be provided for careful sampling and inspection either at the mill or at the site of work. The following periods from time of sampling shall be allowed for completion of testing.

|             |         |
|-------------|---------|
| 1-day test  | 6 days  |
| 3-day test  | 8 days  |
| 7-day test  | 2 days  |
| 28-day test | 33 days |

**1.15.5 Rejection**

The cement may be rejected if it fails to meet any of the requirements of these specifications.

Cement remaining in bulk storage at the mill, prior to shipment for a period greater than six months after completion of the tests, may be tested and naty ve rejected if it fails to conform to any of the requirements of these specifications.

If the variation in weight of any shipment is 3% in the lower side than the entire shipment may be rejected.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

Cement failing to meet the test for soundness in the autoclave may be accepted if it passes a retest, using a new sample, at any time within 28 days thereafter. The provisional acceptance of cement at the mill shall not override the right to reject on a retest of soundness at the time of delivery if the cement.

The Contractor shall supply, if required, at fortnightly intervals, test Certificates with the dates of such test, showing that the cement complies with the appropriate standard. These tests shall be carried out in an approved laboratory. Only one brand of each type of cement shall be used for concrete in any individual member of the structure. Cement shall be used in the sequence of receipt of shipment, unless otherwise directed.

There shall be sufficient cement on site to ensure that each section of work is completed without interruption.

Cement reclaimed from cleaning of bags or from leaky containers shall not be used.

The mixing together of different types of cement will not be permitted.

#### **1.15.6 Method of Sampling and Testing**

The sampling and testing of port-land cement shall be in accordance with relevant B.S. or A.S.T.M. (C-150-74) standard specifications.

Contractor shall carry out tests on Ordinary Portland Cement, Sulphate Resistant Cement and White Cement at his own cost, if and when required.

The sampling and testing of Portland Cement shall be in accordance with the relevant B.S. or A.S.T.M.(C-150-74) standard specifications.

- i] The sacks should be stacked closely on a damp proof floor or on timber planks raised 12” (300mm) or so from the ground with air space below. There should be similar air space between the stacks and walls and roof of the building, which should have sound weather proof walls and roof.
- ii] To avoid bursting of bags and setting under pressure the height of the stacks shall be limited to 8 bags.

#### **1.15.7 Limitation of Use**

No cement stored through a monsoon or for more than six months should be used, unless tests have been applied and cement meets the requisite standard.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

### 1.15.8 Sulphate Resisting Cement

The sulphate resisting cement is to conform to the B.S. Specification Nos:-4027, 1966 which stipulate as below:

i] **Chemical Analysis:**

|                        |           |       |
|------------------------|-----------|-------|
| Magnesium Oxide        | 4.0%      | (Max) |
| Loss of Ignition       | 4.0%      | (Max) |
| Insoluble Residue      | 1.5%      | (Max) |
| Tri-Calcium Aluminates | 3.5%      | (Max) |
| lime Saturation Factor | .66-1.02% | (Max) |

ii] **Physical Tests:**

|   |        |       |
|---|--------|-------|
| Fineness Specific Surface Sq. Cm. per Gm. | 2500   | (Max) |
| Soundness, Le-Chatelier Test              | 10mm   | (Max) |
| Setting Time                              |        |       |
| a] Vicat Test, initial Set in Minutes     | 45     | (Max) |
| b] Final Set in Hours                     | 10 Hrs | (Max) |

iii] **Compressive Strength**

|                               |      |
|-------------------------------|------|
| 3 Days – Lbs. Per Square Inch | 2200 |
| 7 Days – Lbs. Per Square Inch | 3400 |

The Sulphate Resisting Cement where specified shall conform to P.S. 612 or B.S. 4027 with appropriate content of Tricalcium aluminates. A requirement of ASTM C-150 for Type (V) is that the contents of C-4 AF plus twice the amount of C3A shall not exceed 20percent.

### 1.15.9 Guidelines for the Use of Sulphate Resisting Cement

To save the structures from sulphate attack and to obtain lasting immunity, the following precautions should be taken when using sulphate resisting cement.

- i] Water curing of the structures should be done for a longer period before exposure to the sulphate water. An intermediate period of drying in air also increases the resistance owing to the formation of an impermeable calcium carbonate skin.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

- ii] A rich mix should be used with a low water cement ratio.
- iii] A dense concrete should be used to give it a greater tightness against penetration by the sulphate solutions.
- iv] Steam cutting at a temperature of 100 degree Centigrade and above greatly increases the resistance to sulphate attack, sometimes to the point of immunity.

Curing below 100 degrees Centigrade does not increase the resistance and sometimes decreases it.

## **1.16 WHITE CEMENT**

### **1.16.1 White Cement**

White Cement shall be non-staining, water repellent Portland Cement conforming to relevant B.S. or ASTM standard which shall be tested in accordance with the relevant stipulations of Clause 1.15.6 for Ordinary Portland Cement.

White Cement used where specified shall conform to the Specifications of iron oxide contents below 1 percent. The strength characteristics shall be the same as ordinary Portland Cement but produced in an oil fired cement kiln at 3100 °F to 15 percent.

### **1.16.2 Characteristics / Properties**

White Portland Cement is a chemical product of several compounds which are in a state of fine division chemically active and highly sensitive to moisture. Its essential qualities are hydraulic in nature i.e. it sets and hardens when worked with water. A good white cement which combines the properties of its numerous compounds, will set when water is added to it in a regulated time; it will harden and gain strength progressively, its strength will not show retrogression in strength at a later period and will have constancy of volume. Above all, the basic requirement it has to fulfill concerns its appearance which must be white, without any contamination of iron or anything else. To maintain this primary property viz. whiteness, great care has to be taken at every stage of its production. The characteristic and properties of white cement are fineness, setting time and soundness. It has to conform to the most rigorous specification in respect of soundness. This is most important, for any lack of proportion in the elements that produce it or any negligence in the production processes would spoil the product. In other words even the slightest defect in the manufacture would make the things made from it such as hydraulic tiles or other molded articles unsatisfactory.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**1.17 COLORED CEMENT**

**1.17.1 Colored Cement**

Colors are imparted to ordinary cement by mixing coloring matter to it in the form of mineral pigments. Usually 5 to 10 percent of the coloring matter is added to obtain the required shade. The mineral oxide used as pigments are rather costly.

Iron oxide gives red, yellow or brown; Chromium oxide gives green color; Cobalt gives blue color. For black or brown color manganese dioxide is used. White cement is prepared with raw materials almost free from iron; it has the normal setting of ordinary cement, except for the absence of any color but white.

**1.18 MILD STEEL REINFORCEMENT GRADE 40 & 60**

**1.18.1 Material and Manufacture**

The bars shall be rolled from billets of Karachi Steel Mill properly identified heats of mold cast or strand cast steel using the open hearth, basic Oxygen, or electric-furnace process. The reinforcement steel shall be obtained only from the approved manufacturers.

**1.18.2 Chemical Requirements**

Manufacturers shall perform analysis of test samples and determine the percentages of carbon, manganese phosphorus and sulphur. The phosphorus content shall not exceed 0.05%. It will be obligatory for the Contractor to furnish manufacturers certificate stating chemical composition of the Steel Reinforcement.

**1.18.3 Requirements for Deformations**

Deformation shall be spaced along the bar at substantially uniform distance. The deformations on opposite sides of the bar shall be similar in size and shape. The spacing height and gap of deformations shall conform to the requirements prescribed in Table-1.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**TABLE-1 DEFORMED BAR DESIGNATION NUMBER, NORMAL WEIGHTS, NOMINAL DIMENSIONS AND DEFORMATION REQUIREMENTS.**

| BAR NO. | WT. LB/FT | DIA IN. | X-SEC AREA IN <sup>2</sup> | PERI-METER IN | MAX. AVERAGE SPACING | MIN.AVE RAGE HT. | MAX. CAP |
|---------|-----------|---------|----------------------------|---------------|----------------------|------------------|----------|
| 3       | .376      | .375    | .11                        | 1.178         | .262                 | .015             | .143     |
| 4       | .668      | .500    | .02                        | 1.571         | .350                 | .020             | .191     |
| 5       | 1.043     | .625    | .31                        | 1.963         | .437                 | .028             | .239     |
| 6       | 1.502     | .750    | .44                        | 2.356         | .525                 | .038             | .286     |
| 7       | 2.044     | .875    | .60                        | 2.749         | .612                 | .044             | .334     |
| 8       | 2.670     | 1.000   | .79                        | 3.142         | .700                 | .050             | .383     |
| 9       | 3.400     | 1.128   | 1.00                       | 3.544         | .790                 | .056             | .431     |
| 10      | 4.303     | 1.270   | 1.27                       | 3.990         | .889                 | .064             | .487     |
| 11      | 5.313     | 1.410   | 1.56                       | 4.430         | .987                 | 0.71             | .540     |
| 14      | 7.650     | 1.693   | 2.25                       | 5.320         | 1.185                | .085             | .648     |
| 18      | 13.600    | 2.257   | 4.00                       | 7.090         | 1.580                | .102             | .864     |

**1.18.4 Mechanical Properties of Reinforcing Bars**

The material shall conform to the requirements for tensile and percentage of elongation properties as presented in Table-2

**TABLE 2: TENSILE REQUIREMENTS**

|                                   | GRADE 40 | GRADE 60 |
|-----------------------------------|----------|----------|
| Tensile Strength Minimum (in psi) | 70,000   | 90,000   |
| Yield Strength Minimum PSD        | 40,000   | 60,000   |
| Elongation in 8: Piece. (in %age) | %age     | %age     |
| Bar No.                           |          |          |
| 3                                 | 11       | 9        |
| 4                                 | 12       | 9        |
| 5                                 | 12       | 9        |
| 6                                 | 12       | 9        |
| 7                                 | 11       | 8        |
| 8                                 | 19       | 8        |
| 9                                 | 9        | 7        |
| 10                                | 8        | 7        |
| 11                                | 7        | 7        |

Sign \_\_\_\_\_  
 Seal \_\_\_\_\_  
 M/S \_\_\_\_\_

### 1.18.6 **Bending Requirements**

The bend-test specimen shall stand being bent around a pin without cracking on the outside of the bent portion. The requirements for degree of bending and size of pins are prescribed in Table-3.

| Bar Designation<br>No. | Plain Diameter for "Bend Test<br>d-nominal diameter of Specimen |          |
|------------------------|---|----------|
|                        | Grade-40  | Grade-60 |
| 3,4,5                  | 4d  | 4d       |
| 6                      | 5d  | 5d       |
| 7,8                    | 5d  | 6d       |
| 9,10,11                | 5d  | 8d       |

"Test bends 180° unless noted otherwise.

### 1.18.7 **Permissible Variation in Mass**

The permissible variation shall not exceed 6 percent under nominal mass. Reinforcing bars shall be evaluated on the basis of nominal masses. In no case shall the over weight of any bar be the cause for rejection.

### 1.18.8 **Finish**

The bars shall be free of injurious defects and shall have a workmanlike finish. Rust, seams, surface irregularities, or mill scale shall not be cause for rejection, provided the weight, dimensions cross-sectional area, and tensile properties of a hand wire brushed test specimen are not less than the requirements of this specification.

### 1.18.9 **Plain Mild Steel BARS**

Unless otherwise specified, all plain reinforcing bars shall comply with the requirements of B.S. 785 for plain mild steel bars and shall have a minimum yield strength (characteristic strength) of 36,000 Ibs/inch sq.ft.

### 1.19 **POLYSTYRENE (Thermo pore)**

The material shall be of approved manufacture and of best quality available in Pakistan. The Polystyrene shall be of the type used for insulating roof.

The insulation shall conform to the following physical requirements:

|  |                |
|--|----------------|
| Density (Average) kg. per M <sup>3</sup>     | 37             |
| Specific Gravity (Average)                   | 0.12           |
| Flexural Strength (Average Kgs per Sq. Cm.)  | 3.6 to 4.3     |
| Impact Strength (Cm/Kgs per Sq. Cm.)         | 0.3 to 0.7     |
| Compressive strength (Cm/Kg per Sq. Cm.)     | 0.17 to 1.44   |
| Deflection (Average)                         |                |
| Thermal conductivity (Average)               | 0.25 to Inches |
| Maximum BTU at mean temperature 10 Degree F. | 0.22           |

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_



**1.20 HOLLOW FLUSH SHUTTERS (COMMERCIAL PLY) BOTH SIDES**

Hollow flush doors of approved manufacturers and of best quality available in Pakistan or as approved shall be used.

The ply wood shall be in accordance with the requirements of B.S. 1455: 1963.

**1.20.1 Glue**

For joints work enamel glue complying with B.S. 745, Casein glue complying with B.S. 745 and cold setting Casein glue complying with B.S. 1204 shall be used.

**1.21 TERMITE PROOFING MATERIAL**

Termidor / Biflex / Durbbin another approved shall be used as per manufacturer Specifications.

**1.22 HARD BOARD**

**1.22.1 General**

The hard board shall be of approved manufacturer. It shall be hard and stout and shall not warp in moist climate nor turn into laminations. Shall be free from cracks, flaws, dents, etc. shall be sufficiently thick to support the weight it has to take where being used. It shall have uniform color and thickness and shall have an average density of 30 to 50 lbs per Cft.

**1.23 CHIP BOARD**

**1.23.1 General**

The Chip Board in general shall be medium density of best quality available in the country and shall have uniform texture and thickness conforming to B.S. 2604 : 2604. The surface shall be of such nature so as to give good adhesion to the decorative lamination to be pressed on to it. They should be free from flaws, cracks, or any sort of weak spots. The density shall be in the range of 50-53 lbs/Sft and the modulus of rupture shall be between 1,500 to 3,000 lbs/sq.in.

**1.23.2 Samples**

The samples shall be submitted by the contractor from approval before placing order to the supplier and these samples will be retained till the completion of work. The cost of such samples shall be deemed to be included in the unit rates of the relevant items entered in the Bill of Quantities.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

## **PLUMBING AND SANITARY FIXTURES**

### **1.24 WATER CLOSET**

#### **1.24.1 Source**

Unless otherwise specified the water closet shall be of best quality manufactured in Pakistan approved.

#### **1.24.2 Composition**

The water closet shall be made of ceramic ware in one piece of material.

#### **1.24.3 Quality**

Each water closet shall show good workmanship without dents or faults. The surface and color shall be uniform, non-corrodible, and free from discoloration and imperfections.

#### **1.24.4 Color**

The color of the water closet shall be white or as approved.

#### **1.24.5 Type**

The color of the water closet shall be Asian / European as specified in the drawings or as approved.

#### **1.24.6 Size**

The size of the water closet shall be as specified in the drawings or as approved.

#### **1.24.7 Trap**

The trap shall be either S or P type as approved. For manufacture and quality it shall conform to the above specification for water closet. Each trap shall have a circular opening of 0.02 meter (4") I.d. for connection of anti-siphonage pipe.

#### **1.24.8 Foot Rest**

For squatting/Asiatic pattern type water closet the foot rest shall be an integral part of the water closet.

### **1.25 SEAT**

#### **1.25.1 Source**

Unless otherwise specified the seat shall be in double seat cover comprising a seat and a cover hinged together of best quality manufactured in Pakistan or as approved.

#### **1.25.2 Composition**

Seat shall be as per manufacturer's Standard.

#### **1.25.3 Quality**

Seat shall be made in one piece. It shall be free from blisters. The surface shall be highly polished impervious and hygienic.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**1.25.4 Type**

Seat shall be of closed or open pattern as per manufacture's Standard.

**1.25.5 Shape**

The shape of the seat shall be in conformity with the type water closet specified. The underside of the seat shall be flat and shall not be recessed. For closed pattern seat the hinging devices shall be either of good quality non-ferrous metal or any other corrosion resistant material.

**1.25.6 Bolts**

The bolts shall be of non-ferrous material 65 mm (2- 1/2") in length. Two bolts shall be provided with each seat.

**1.25.7 Buffers**

Seat shall be provided with rubber buffers of 25mm x 37mm (1" x 1-1/2") size and 9.5mm x 3/8") thickness. The buffers shall be rigidly attached to the seat. The metal in contact with buffers shall be non-ferrous. The cover of the seat for closed pattern shall have buffers not less than two in number.

**1.25.8 Color**

The color of the seat shall be black or as approved.

**1.26 FLUSHING CISTERN**

**1.26.1 Source**

Cistern shall be obtained from approved source which shall be of the best quality manufactured in Pakistan or as approved.

**1.26.2 Composition**

Low level non-completed coupled cistern shall be made of plastic or ceramic war in one piece of materials. For manufacture and quality it shall conform to Specifications of water closet.

**1.26.3 Capacity**

The capacity of the cistern shall be 13.5 liters (3 Gallons).

**1.26.4 Quality**

Each cistern shall show good workmanship without dents or faults. The surface and color shall be uniform free from discoloration and imperfections.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

### **1.26.5 Brackets/Bolt Kit**

Brackets shall be of material as approved. The length of the bracket shall be such as to enable 100mm (4") embedding in the wall or fixed to the wall with the help of screws. Where bolt kit is available as standard Accessory it shall conform to manufacturers specifications.

### **1.26.6 Cover**

For composition and quality the cistern cover shall conform to the corresponding specification of cistern.

### **1.26.7 Flush Pipe**

Flush pipe shall be of 31mm (1-1/2") internal diameter. It shall be manufactured either from steel or non-ferrous materials as approved.

The steel pipe shall be either galvanized or chromium plated both internally and externally as approved. Moulded rubber cone shall be provided for connection with the water closet.

### **1.26.8 Ball Valve and Component Parts**

Ball valve and its component part shall be either of brass or gun metal or any corrosion resistant alloy or plastic. These shall be sound, hard, smooth and well finished. The mechanism of component parts shall be such that when the position is in contact with the face of seat the short arm of the level shall be in vertical position. Ball valve shall not leak when rested to a pressure of 210. x 103 Kg/sq. meter (300 P.S.I.) It shall not displace water more than half its volume when left in water.

## **1.27 WASH HAND BASIN**

### **1.27.1 Source and Type**

Wash Hand Basins shall be of an approved best quality and type manufactured in Pakistan.

### **1.27.2 Composition**

Wash Hand Basin shall be made as ceramic ware in one piece of material as approved.

### **1.27.3 Manufacture**

Each Wash Hand Basin shall be fired at such a temperature as to produce a satisfactory fused clay.

### **1.27.4 Quality**

Each Wash Hand Basin shall show good workmanship without dents or faults. The surface and color shall be uniform non-corrodible, free from discoloration and imperfections.

### **1.27.5 Color**

Color of the wash hand basin shall be white or as approved.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**1.27.6 Size**

The size of the wash hand basin shall be as specified in the Bill of Quantities.

**1.27.7 Overflow**

Overflow shall be either of open ware type with removable grating or of a bolt type as specified. The slot for overflow shall be 63mm long 12.7mm deep (2.5" long ½" deep). It shall be so designed as to facilitate cleaning.

**1.27.8 Soap tray or Sinking**

Soap tray or sinking shall be so provided as to drain into the basin.

**1.27.9 Tap Holes**

The tap holes shall be squarer of fit pillar taps and shall be beveled around the opening. They shall be so situated as to allow supply pipes to be clear of waste and vent pipes and shall have enough space to prevent the user striking the head on the tap.

**1.27.10 Waste Hole and Grating**

Waste hole shall have a minimum diameter of 63mm (2.5"). The outlet shall be beveled or rebated. The tap hole shall be square I shape and each side shall be of 29mm (1.1/8") length. Chromium plated grating of an appropriate diameter shall allow free drainage of water and be securely fitted to basin without any leakage.

**1.27.11 Plug Chin and Stay Hole**

Plug shall be of rubber. The diameter of the plug shall be such as to fit snugly in the waste hole. The chin shall be of brass/chromium plated one end fixed to the plug and the other end in the chin stay hole. The position of the stay hole shall not be lower than the over flow slot.

**1.27.12 Brackets**

Brackets shall be of an approved material. The length of the bracket shall be such as to enable 100mm (4") embedding in the wall or fixed to the wall with the help of screws.

**1.27.13 Stud Slots**

Stud slots shall be monolithically cast with the wash hand basin. These shall receive the brackets on the inside of the basin and shall be so situated that the brackets remain 50mm (2") away from the face. These shall not exceed 12.7 mm (1/2") in dia 7.9 mm (5/10") in height and shall be 300mm (12") from the back of the basin to the center of the side. The side studs shall be 63mm x 125mm x 16mm (2-1/8" x 5" x 5/8") and Centre of stud shall be 300mm (12") from the back of the basin.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

## **1.28 WASTE PIPE**

Waste Pipe shall be of 38mm (1-1/2") internal diameter. It shall be PVC painted with enamel paint, or chromium plated as specified in the BOQ.

### **1.28.1 Bottle Type Trap**

All the wash hand basins shall be provided with a bottle type trap (Chromium plated or stainless steel as approved) and connected with the basin and waste pipe.

## **1.29 TOOTH BRUSH HOLDER WITH TOOTH PASTE DISH**

### **1.29.1 Source and Type**

Tooth brush holder with tooth paste dish shall be of best quality and type manufactured in Pakistan as approved.

### **1.29.2 Composition**

It shall be made of Stainless Steel.

### **1.29.3 Quality**

Each tooth brush holder shall be of best quality and show good workmanship. The surface and color should be uniform, non-corrodible, and free from discoloration and imperfections.

### **1.29.4 Size**

Size of the tooth brush holder shall be as approved.

## **1.30 SINK**

### **1.30.1 Source and Type**

Sink shall be of best quality and type manufactured in Pakistan and as approved.

### **1.30.2 Composition**

It shall be made of 18 gauge stainless steel or as approved.

### **1.30.3 Quality**

Each sink shall show good workmanship without dents or faults. The surface and color should be uniform non-ferrous free from discoloration and imperfections.

### **1.30.4 Size**

Size of the stainless steel sink shall be as specified in the Bill of Quantities or as approved.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

### **1.31 PILLAR COCK**

#### **1.31.1 General**

Pillar Cock shall be chromium plated and of best quality manufactured in Pakistan. These shall be of screw down type with jam nut. Internal diameter of the tap shall be 15mm (1/2").

### **1.32 ONE HOLE MIXER**

#### **1.32.1 General**

- a) One hole mixer for wash basin.
- b) One hole mixer high cock for sink.

One hole mixer shall be chromium plated and of best quality manufactured in Pakistan. These shall be of screw down type with jam nut. Internal diameter if the tap shall be 13mm (1/2").

### **1.33 URINALS**

Urinal shall be of best quality manufactured in Pakistan and as approved.

#### **1.33.1 Composition**

Urinal shall be made as a ceramic ware in one piece of material as specified.

#### **1.33.2 Manufacture**

Each urinal shall be fired at such a temperature as to produce a satisfactory Fused Clay.

#### **1.33.3 Quality**

Each urinal shall show good workmanship without dents or faults. The surface and color shall be uniform free from discoloration and imperfections.

#### **1.33.4 Color**

Color of the urinal shall be white or as approved.

#### **1.33.5 Flushing Cistern**

4.5 liters capacity automatic C.I. cistern best quality local made enamel painted or Ceramic type best quality local made as specified in the Bill of Quantities.

#### **1.33.6 Type**

The type of the urinal shall be as approved.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**1.33.7 Waste Pipe**

Waste pipe shall be of 38 mm (1-1/2"Ø internal diameter. It shall be manufactured either from steel or non-ferrous materials as approved. The steel pipe shall be either galvanized (internally and externally) or chromium plated as approved.

**1.33.8 Brackets**

Brackets shall be painted iron. The bracket shall be either of such a length as to enable 100 mm (4") embedding in the wall or shall be such as to be fixed to the wall with the help of screws.

**1.34 TAPS AND STOP COCKS (TEE ANGLE ETC)**

**1.34.1 Source**

Taps and cocks shall be of best quality manufactured in Pakistan and as approved.

**1.34.2 Composition**

The bodies and heads shall be of hard brass or gun metal or hot pressings of brass or manganese bronze. Spindles, glands, crutches, washer plates and nuts shall be of brass or manganese.

**1.34.3 Quality**

Castings shall be from metal poured into the moulds while hot pressing shall be metal pressed between dies.

Pressing shall be smoother and shall present a better appearance. These shall be plated with zinc or chromium as specified.

**1.34.4 Requirements**

Tap and cocks shall be fitted with a cover of pressed sheet metal threaded for attachment to the head and which can be cleaned easily. The stem of washer, plate (called a jumper) shall be either loose or fixed by screwing to the spindle with the help of a grub screw.

**1.34.5 Size**

Size of the taps and cocks shall be as specified or as approved.

**1.35 C.P. SHOWER AND C.P. ARMS**

**1.35.1 Source and Type**

The C.P. Shower with arms shall be of an approved best quality and type manufactured in Pakistan.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_



### **1.35.2 Composition**

It shall be made of best quality materials duly chromium plated in accordance with the latest specifications as approved.

### **1.35.3 Quality**

It shall be of quality and show good workmanship. The surface and color should be uniform non-corrodible discoloration and imperfections.

### **1.35.4 Size**

The C.P. shower shall be from an approved manufactured and of the sizes specified.

## **1.36 C.P. SOAP DISH**

### **1.36.1 Source and Type**

C.P. Soap dish shall be of an approved best quality and type manufactured in Pakistan.

### **1.36.2 Composition**

It shall be made of best quality materials duly chromium plated in accordance with the latest specifications as approved.

### **1.36.3 Quality**

It shall be of best quality and show good workmanship. The surface and color should be uniform non-corrodible, free from discoloration and imperfections.

### **1.36.4 Size**

The size of the C.P. Soap dish shall be as approved as specified.

## **1.37 C.P. TOILET PAPER HOLDER**

### **1.37.1 Source and Type**

The C.P. Toilet Paper holder shall be of an approved best quality and type manufactured in Pakistan.

### **1.37.2 Composition**

It shall be made of best quality material duly chromium plated in accordance with the latest specifications as approved.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

### **1.37.3 Quality**

It shall be of best quality and show good workmanship. The surface and color should be uniform non-corrodible, free discoloration and imperfections.

### **1.37.4 Size**

The size of the toilet paper holder shall be as approved or as specified.

## **1.38 C.P. TOWEL RAIL**

### **1.38.1 Source and Type**

C.P. Towel Rail shall be of an approved best quality type manufactured in Pakistan.

### **1.38.2 Composition**

It shall be make of best quality iron pipe duly chromium plated in accordance with the latest specifications as approved.

### **1.38.3 Quality**

It shall be of best quality and show good workmanship smooth surface and color should be uniform non-corrodible, free from discoloration and imperfections.

### **1.38.4 Size**

It shall be of ¾" dia x 24" long (19mm x 600mm) long.

## **1.39 MIRROR**

### **1.39.1 Source and Type**

Mirror shall be of best quality Belgium or local as specified make with Chromium plated screws.

### **1.39.2 Composition**

It shall be made best quality materials in accordance with the latest British Standard Specifications as approved.

### **1.39.3 Quality**

It shall be of best quality and show good workmanship and surface should be uniform and free from imperfections and distortion.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

#### **1.39.4 Size**

Size of the mirror shall be 24" x ¼" or as specified.

### **1.40 PLATE GLASS SHELVES WITH C.P. GUARD RAILS**

#### **1.40.1 Source and Type**

Plate glass shelves with C.P. guard rails shall be of an approved best quality and type manufactured in Pakistan.

#### **1.40.2 Composition**

It shall be made of best quality materials in accordance with the latest specifications as approved.

#### **1.40.3 Quality**

It shall be best quality and show good workmanship. The surface and color should be uniform non-corrodible, free from discoloration and imperfections.

#### **1.40.4 Size**

It shall be of size 24" x 5" x 3/16" (600 x 125 x 5mm) or as specified.

#### **1.40.5 C.P. Hanger**

The C.P. hanger shall be of an approved best quality and type manufactured in Pakistan.

#### **1.40.6 Composition**

It shall be made of best quality materials duly chromium plated in accordance with the latest specifications.

#### **1.40.7 Quality**

It shall be of best quality and show good workmanship. The surface and color should be uniform non-corrodible, free from discoloration and imperfections.

#### **1.40.8 Size**

The size of the C.P. hanger shall be as approved.

### **1.41 TIMBER GRILL**

#### **1.41.1 Source and Type**

Timber grill shall be of first class deodar wood or as specified/approved.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

#### **1.41.2 Composition**

It shall be manufacture from 1<sup>st</sup> class deodar wood duly painted with 3 coats of enamel paints as approved.

#### **1.41.3 Quality**

It shall be of best quality and show good workmanship.

#### **1.41.4 Size**

It shall be of 27" x 27" x 3" (675mmx 675mm x 75mm) size or as approved.

### **1.42 FLOOR TRAPS**

#### **1.42.1 Source and Type**

The floor trap shall be of an approved best quality and type manufactured in Pakistan.

#### **1.42.2 Composition**

It shall be of best quality cast iron in accordance with the latest specifications with C.P. Grating of specified size.

#### **1.42.3 Quality**

It shall be made of best quality and show good workman-ship. The surface shall be uniform, non-corrodible, non-ferrous and free from imperfections.

#### **1.42.4 Size**

The size of the flow trap shall be as specified or as approved.

### **1.43 GULLY TRAPS**

#### **1.43.1 Source and Type**

Gully traps shall be of an approved best quality and type manufactured in Pakistan.

#### **1.43.2 Composition**

It shall be made of best quality earthenware duly glazed with 150 x 150mm cast iron gratings. A brick masonry chamber plastered with 1:3 cement sand mortar both inside and outside shall be construed over the gully trap with C.I. frame and cover of required size.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

### **1.43.3 Quality**

It shall be of best quality and show good workmanship. The surface shall be uniform free from imperfection. It shall be made of best quality and show good workman-ship. The surface shall be uniform, non-corrodible, non-ferrous and free from imperfections.

### **1.44 VALVES**

Air relief valves, non-return valves, gate valves etc.

It shall be made of best quality and show good workman-ship. The surface shall be uniform, non-corrodible, non-ferrous and free from imperfections.

#### **1.44.1 Source and Type**

The valves shall be heavy duty and of an approved best quality and type manufactured in Pakistan.

#### **1.44.2 Composition**

- a) Air relief valve shall have small orifice valve, rubber balls, brass air vent orifices, gun metal nipple, screw down valve and seats, operating screws. The valve shall be capable to resist 153meter of water pressure.
- b) Non-return valves body shall be of cast iron or bronze with gun metal seats and stainless steel hinges. The valve shall be capable to resist a pressure of 150 meter of water.
- c) Gate valves, heavy-duty type brass, gun metal or bronze of best quality, manufactured in Pakistan as approved and capable to resist a pressure of 150 meter of water.

#### **1.44.3 Size**

As per Bill of Quantities.

### **1.45 MANHOLE COVER AND FRAME**

#### **1.45.1 Source and Type**

Manhole cover and frame shall be of an approved best quality and type manufactured in Pakistan conforming to B.S.S 497.

#### **1.45.2 Quality**

It shall be of best quality and show good workmanship. The surface shall be uniform, non-corrodible, non-ferrous and free from imperfections.

#### **1.45.3 Size**

18" (450mm) dia weight ½ Cwt. or as specified in the B.O.Q.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

## 1.46 **CAST IRON SOIL PIPES (SPUN TYPE)**

**1.46.1** Cast iron soil pipes and fittings shall be of an approved best quality manufactured in Pakistan which shall be truly cylindrical with clear internal diameter as specified having a uniform thickness smooth and with strong and deep sockets free from flaws air bubbles, cracks, and –holes and other defects. They shall not be brittle but shall allow for ready cutting chipping drilling.

### **1.46.2 Standards**

When used underground the thickness and weight of cast iron pipes shall not be less than those shown on the following table:

| Internal Diameter | Weighty per 6 ft. length (including socket & headed spigot or flanges, the socket not less than 3/8" thick) |
|-------------------|---|
| 2" (50mm)         | 24.9 Kg.  |
| 3" (75mm)         | 34 Kg.  |
| 4" (100mm)        | 48 Kg.  |
| 6" (150mm)        | 70.3 Kg.  |

### **1.46.3 Treatment**

Before use all cast iron pipes and fitting shall be treated with two coats of Angus Smith composition of the Dower – Barft process or Macarlaine"s glass enamel or other approved means of preventing oxidation.

### **1.46.4 Type**

Cast iron soil pipes shall be either spigotted or socketted or flanged at both ends as specified.

### **1.46.5 Length**

Cast iron soil pipes shall be in 6ft. (2meter) long pipes including socket and beaded spigot or flanges at both ends.

### **1.46.6 Plain Bend Door Bend and Plug Junction**

For quality and treatment the specials shall conform to the corresponding specification of cast iron soil pipes. The size shall be as specified.

## 1.47 **REINFORCED CEMENT CONCRETE PIPES**

### **1.47.1 Source**

Reinforced cement concrete pipe of specified quality shall be of approved manufacturer.

### **1.47.2 Composition**

Pipe shall be made of reinforced cement concrete. The cement concrete shall be Class – B for all Class of pipes (1:1-1/2:3).

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

### 1.47.3 Quality

Pipe shall be of uniform internal diameter and thickness throughout its length. The minimum amount of reinforcement for different diameters of pipes shall be as given in Table No. I and II.

### 1.47.4 Collars and Sockets

Collars and sockets shall conform to the above specifications for composition quality and reinforcement.

### 1.47.5 Standard

The standard thickness, weight and reinforcement for different diameters of pipes and collars shall be as given in Table No. 1 & 2.

### 1.47.6 Tolerance

The internal diameter of pipe shall not deviate from the nominal internal diameter by more than 1/8" (3mm) upto 18" (450mm) diameter; 1/4" (6mm) upto 48 (1200mm) diameter. The radial thickness of the wall of pipe or its fittings shall not vary more than specified below:

| Pipe diameters in inches | Variation in radial Thickness in inches. |
|--------------------------|--|
| 3 to 18                  | ± 1/16                                   |
| 20 to 36                 | ± 3/32                                   |
| 38 to 48                 | ± 1/8                                    |

The internal diameter of the socket or collar shall have a minimum clearance when fixed to the pipes as specified below:

| Nominal Internal diameter of pipe<br>In inches | Minimum clearance between spigot and socket or collar<br>in inches |
|--|--|
| 3 to 18  | 3/8  |
| 10 to 18                                       | 5/8  |
| 24 to 48                                       | 3/4  |

### 1.47.7 Hydraulic Test

Pipe barrel shall withstand the specified internal pressure without showing any sign of injury or sweating.

The pressure shall be applied at a rate not exceeding 10 PSI in 5 second and full pressure shall be maintained for at least thirty seconds.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**TABLE NO. 1**

| Diameter | Steel Reinforcement for Pipes |                 |              |                 | Steel Reinforcement for Collars |                 |              |                   |
|----------|-------------------------------|-----------------|--------------|-----------------|---------------------------------|-----------------|--------------|-------------------|
|          | Spirals                       |                 | Straight Rod |                 | Spirals                         |                 | Straight Rod |                   |
|          | Gauge                         | Weight per Pipe | Size         | Weight per Pipe | Gauge                           | Weight per Pipe | Size         | Weight per Collar |
| 1        | 2                             | 3               | 4            | 5               | 6                               | 7               | 8            | 9                 |

**E-CLASS PIPES AND COLLARS**

| Inches |    | Lbs.  |       | Lbs. |    | Lbs. |       | Lbs. |
|--------|----|-------|-------|------|----|------|-------|------|
| 3      | 14 | 0.56  | 3/16" | 2.80 | 12 | 0.07 | 3/16" | .36  |
| 4      | 12 | 0.76  | 3/16" | 2.94 | 12 | 0.10 | 3/16" | .43  |
| 5      | 12 | 1.32  | 3/16" | 3.03 | 12 | 1.16 | 3/16" | .52  |
| 6      | 12 | 1.47  | 3/16" | 3.25 | 12 | 0.24 | 3/16" | .60  |
| 7      | 12 | 2.31  | 3/16" | 5.25 | 12 | 0.27 | 3/16" | .67  |
| 8      | 12 | 2.75  | 3/16" | 5.35 | 12 | 0.34 | 3/16" | .75  |
| 9      | 12 | 3.14  | 3/16" | 6.4  | 12 | 0.39 | 3/16" | .80  |
| 10     | 11 | 3.56  | 3/16" | 7.0  | 11 | 0.42 | 4G    | .90  |
| 12     | 11 | 5.22  | 4G    | 10.2 | 11 | 0.85 | 4G    | 1.1  |
| 15     | 11 | 8.16  | 4G    | 15.1 | 10 | 1.2  | 1/4"  | 1.3  |
| 18     | 9  | 15.01 | 1/4"  | 16.1 | 9  | 2.28 | 1/4"  | 1.6  |

**M-CLASS PIPES AND COLLARS**

| Inches |    | Lbs.  |       | Lbs. |    | Lbs. |       | Lbs. |
|--------|----|-------|-------|------|----|------|-------|------|
| 3      | 14 | 1.81  | 3/16" | 4.67 | 12 | 0.31 | 3/16" | .5   |
| 4      | 12 | 1.90  | 3/16" | 5.0  | 10 | 0.33 | 1/4"  | .53  |
| 5      | 12 | 2.13  | 3/16" | 5.25 | 10 | 0.35 | 3/16" | .57  |
| 6      | 12 | 3.09  | 3/16" | 5.25 | 10 | 0.39 | 3/16" | .65  |
| 7      | 12 | 4.97  | 3/16" | 5.83 | 10 | 0.56 | 3/16" | .08  |
| 8      | 12 | 6.0   | 1/4"  | 6.0  | 9  | 0.85 | 1/4"  | .85  |
| 9      | 12 | 6.02  | 1/4"  | 7.6  | 9  | 0.75 | 3/16" | .9   |
| 10     | 11 | 7.8   | 4G    | 8.5  | 8  | 1.05 | 4G    | 1.0  |
| 12     | 11 | 12.40 | 4G    | 10.2 | 7  | 1.74 | 4G    | 1.1  |
| 15     | 11 | 18.5  | 3G    | 12.1 | 6  | 2.13 | 1/4"  | 1.7  |
| 18     | 9  | 33.62 | 3G    | 18.7 | 6  | 2.24 | 1/4"  | 2.3  |

**H-CLASS PIPES AND COLLARS**

| Inches |    | Lbs.  |       | Lbs. |    | Lbs. |       | Lbs. |
|--------|----|-------|-------|------|----|------|-------|------|
| 3      | 14 | 2.17  | 3/16" | 4.67 | 10 | 0.35 | 3/16" | .5   |
| 4      | 12 | 3.28  | 3/16" | 5.0  | 9  | 0.51 | 3/16" | .53  |
| 5      | 10 | 4.35  | 3/16" | 5.25 | 9  | 0.63 | 3/16" | .57  |
| 6      | 10 | 5.87  | 3/16" | 5.25 | 8  | 0.74 | 3/16" | .65  |
| 7      | 9  | 7.61  | 3/16" | 5.83 | 8  | 0.88 | 4G    | .8   |
| 8      | 9  | 11.27 | 1/4"  | 6.0  | 7  | 1.31 | 4"    | .8   |
| 9      | 8  | 11.85 | 1/4"  | 7.0  | 7  | 1.46 | 1/4"  | .9   |
| 10     | 8  | 15.87 | 4G    | 8.5  | 6  | 1.05 | 1/4"  | 1.0  |
| 12     | 7  | 24.16 | 4G    | 10.2 | 5  | 6.2  | 1/4"  | 1.1  |
| 15     | 6  | 36.8  | 3G    | 12.1 | 5  | 4.43 | 1/4"  | 1.7  |
| 18     | 4  | 66.31 | 3G    | 18.7 | 3  | 8.33 | 1/4"  | 2.3  |

Sign \_\_\_\_\_  
 Seal \_\_\_\_\_  
 M/S \_\_\_\_\_



**TABLE NO. 2**  
**R.C.C. PIPES AND COLLARS (6 FEET LENGTH)**

| S. No. | Bore dia Inches | A-None Pressure |        | B- Tested to 75- Head |        | C- Tested To 150- Head |        | D- Tested To 200- Head |        |
|--------|-----------------|-----------------|--------|-----------------------|--------|------------------------|--------|------------------------|--------|
|        |                 | Thickness       | Weight | Thickness             | Weight | Thickness              | Weight | Thickness              | Weight |
|        |                 | Inches          | lbs.   | Inches                | lbs.   | Inches                 | lbs.   | Inches                 | lbs.   |
| 1.     | 3               | 1               | 14     | 1                     | 14     | 1                      | 14     | 1                      | -      |
| 2.     | 4               | 1               | 18     | 1                     | 18     | 1                      | 18     | 1                      | -      |
| 3.     | 5               | 1               | 21     | 1                     | 21     | 1                      | 21     | -                      | -      |
| 4.     | 6               | 1               | 26     | 1                     | 25     | 1                      | 25     | 1                      | -      |
| 5.     | 8               | 1               | 32     | 1                     | 32     | 1-1/2                  | 50     | 1                      | 95     |
| 6.     | 9               | 1               | 36     | 1                     | 36     | 1-1/2                  | -      | 1-1/2                  | -      |
| 7.     | 10              | 1-1/8           | 42     | 1-1/8                 | 42     | 1-1/2                  | 60     | -                      | 62     |
| 8.     | 12              | 1-3/16          | 54     | 1-3/16                | 54     | 1-1/2                  | 70     | -                      | -      |
| 9.     | 15              | 1-1/4           | 71     | 1-1/4                 | 71     | 1-7/8                  | 114    | -                      | 92     |
| 10.    | 18              | 1-3/8           | 95     | 1-3/8                 | 95     | 2                      | 114    | -                      | -      |

**1.47 GALVANIZED IRON PIPES**

**1.48.1 Source**

Galvanized iron pipes shall be of specified quality and of an approved manufacture.

**1.48.2 Composition**

Pipe shall be of best quality galvanized iron.

**1.48.3 Quality**

Pipes shall be sound costly workable with drill or file and free from imperfections. Its inner and outer surface shall be smooth. Each pipe shall be properly galvanized. It shall have screw threads on both ends for jointing with sockets.

**1.48.4 Welding Socket**

High frequency induction welding, Socket shall conform to the above specifications of galvanized iron pipes for composition and quality.

**1.48.5 Requirements**

All straight lengths of pipes and its threads threads shall be protected socket and jute covering.

**1.48.6 Test**

Pipes shall be capable of withstanding a pressure 700 psi. The pipes shall comply with Specification No. B.S. 1387, Clause-M.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

### **1.48.7 Galvanized Iron Specials**

The specials shall be of G.I. manufactured to the same specifications as the pipes but where these are not available locally manufactured gun metal specials can be used. It shall be ensured that the threads are not worn out. The fittings shall be tested by jointing at least 5 percent of the local supplies to straight pipes with sufficient pressure. Defective fittings invariably crack on application of pressure. The fittings shall also be hydraulically tested to a pressure of 200 ft. of water head.

### **1.49 FIRE HYDRANT**

#### **1.49.1 Source**

The fire hydrant shall be of an approved quality and manufacture.

#### **1.49.2 Composition**

Head valve gate and nozzle cap shall be made of cast iron. Outlet nozzle, valve seat drain valve stuffing box glands box nut and operating stem shall be of bronze or any other corrosion resistant alloy as approved.

#### **1.49.3 Quality**

The component parts of the hydrant shall be free from flaws air bubbles cracks and holes and other defects. The main valve shall be faced with rubber or leather and in case of slide gate tubes shall have bitumastic barrel rings. All exposed surfaces shall be painted with three coats of approved quality paint. The capacity of hydrant shall be given at hydrant top and nozzle cap. It shall be self lubricating type.

#### **1.49.4 Requirements**

The requirements of fire hydrant shall be:

- i) Pitch of the stem thread shall be such that water hammer shall not exceed working pressure.
- ii) In case the upper portion of the barrel is broken off, hydrants shall remain reasonably tight.
- iii) It shall be capable of taking a flow of not less than 150 gallons per minute.
- iv) To prevent freezing a non-corrodible drip valve shall be provided to drain the barrel when the main valve is closed. Main valve shall be faced with a yielding material such as rubber for the compression type or a bronze ring for the gate type and a seat of bronze or other non-corrodible material.
- v) Outlet threads shall conform to those used in the system.

#### **1.49.5 Type**

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

Type of hydrant shall be either “SUNK” or “FLUSH” as approved.

**1.49.6 Size**

Size of the hydrant shall be 2-1/2” dia or as specified.

**1.50 EXTERNAL FITTINGS / SPECIALS**

**1.50.1 Source**

The external fittings shall be of an approved source and quality.

**1.50.2 Composition**

The external fittings shall be made of cast iron.

**1.50.3 Quality**

Each fitting shall be of the clean diameter as specified of uniform thickness with smooth and strong spigot and socket or flanges as specified. It shall be free from flaws and air bubbles, cracks and holes and other defect.

**1.50.4 Standard**

Each fitting shall conform to the respective standards.

**1.50.5 Size**

Size of each fitting shall be as specified or approved.

**1.51 JUMBOLON**

**1.51.1 Source**

Jumbolon of specified quality shall be of approved manufacture best quality available in Pakistan. The Jumbolon shall be of the type used for insulating roof.

The insulation shall confirm to the following physical requirements.

|                     |  |
|---------------------|--|
| All Structure       | Closed very fine                         |
| Density             | 26-32 kg / M3 (ISO 845 1988 E)           |
| Chemical Resistance | Excellent (ASTM 547)                     |
| Temperature Range   | -80 to +85 °C                            |
| Flexibility         | Good (BS 4433)                           |
| Ozone Resistance    | Excellent (ASTM D1171 & BS 5173)         |
| Thermal Conduct     | K-CAL / H.M2C 0.030 Bta / hr ft2 F 0.207 |
| Vapom Barium        | Excellent                                |
| Flammability        | Self Extinguishing                       |
| Smoke Density       | Class A (ASTM E-84)                      |

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

**MISC FORMATS**

**FOR EXECUTION AND APPROVAL OF  
WORKS**

**DAILY PROGRESS REPORT**

**PORE PERMISSION SLIP**

**CHECK REQUEST**

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_



# SHAHEED BENAZIR BHUTTO UNIVERSITY

SHERINGAL, DIR UPPER KHYBER PAKHTUNKHWA,

## DAILY PROGRESS REPORT

Weather \_\_\_\_\_ dated \_\_\_\_\_

### 1. Labour ; -

- a. Masons; - \_\_\_\_\_.
- b. Carpenter: - \_\_\_\_\_.
- c. \_\_\_\_\_: - \_\_\_\_\_.

### 2. Works executed: -

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

### 3. Materials Used: -

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

### 4. Test carried out: -

\_\_\_\_\_  
\_\_\_\_\_.

Sub-Engr (Works)

Site Engr (Contractor)

For info please.

- 1. Secretary to the Vice Chancellor SBBU
- 2. Registrar, Shaheed BB University
- 3. Director Works Shaheed BB University.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_



**SHAHEED BENAZIRBHUTTO UNIVERSITY**  
SHERINGAL, DIR UPPER KHYBER PAKHTUNKHWA,

**PORE PERMISSION SLIP**

date \_\_\_\_\_

**Location and description; -**

\_\_\_\_\_ : - \_\_\_\_\_  
\_\_\_\_\_ : - \_\_\_\_\_  
\_\_\_\_\_ : - \_\_\_\_\_

**Test done and dates: -**

\_\_\_\_\_ : - \_\_\_\_\_  
\_\_\_\_\_ : - \_\_\_\_\_  
\_\_\_\_\_ : - \_\_\_\_\_

**Test result : -**

\_\_\_\_\_ : - \_\_\_\_\_  
\_\_\_\_\_ : - \_\_\_\_\_  
\_\_\_\_\_ : - \_\_\_\_\_

Sub-Engr (Works)

Site Engr (Contractor)

For info please.

Secretary to the Vice Chancellor SBBU  
Registrar, Shaheed BB University  
Director Works Shaheed BB University.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_



**SHAHEED BENAZIRBHUTTO UNIVERSITY**  
SHERINGAL, DIR UPPER KHYBER PAKHTUNKHWA,

**CHECK REQUEST**

Weather \_\_\_\_\_ dated \_\_\_\_\_

**Location ; -**

\_\_\_\_\_ : - \_\_\_\_\_.  
\_\_\_\_\_ : - \_\_\_\_\_.  
\_\_\_\_\_ : - \_\_\_\_\_.

**Works to be executed: -**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

**Materials to used: -**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

**Test carried out: -**

\_\_\_\_\_.

Sub-Engr (Works)

Site Engr (Contractor)

AD (Works)

Dir Works

For info please.

- a. Secretary to the Vice Chancellor SBBU.
- b. Registrar, Shaheed BB University.

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_

# Volume-IV

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_



# DRAWINGS

Sign \_\_\_\_\_  
Seal \_\_\_\_\_  
M/S \_\_\_\_\_