

KHYBER MEDICAL UNIVERSITY, PESHAWAR

*Renovation Works at (KMU-IMS, Kohat)
Khyber Medical University, Institute of Medical Sciences, Kohat*

BIDDING DOCUMENTS

- INVITATION FOR BIDS,
- INSTRUCTIONS TO BIDDERS,
- FORM OF BID & CONTRACT Agreement,
- PREAMBLE, BILL OF QUANTITIES,
- LIST OF APPROVED MANUFACTURERS/SOURCES,
- CONDITIONS OF THE CONTRACT,
- SPECIFICATION (SPECIAL PROVISIONS),
- SPECIFICATION (TECHNICAL PROVISIONS)

***DIRECTORATE OF PLANNING AND DEVELOPMENT
KHYBER MEDICAL UNIVERSITY, PESHAWAR***

Check List

For Preparation and Submission of Bidding Documents
Renovation Works at (KMU-IMS, Kohat)
Khyber Medical University, Institute of Medical Sciences, Kohat

Ser	Question	Answer
1.	Have you carefully studied and signed each page of the bidding document?	Yes / No
2.	Have you submitted form of Bid on your company letter head pad as per format?	Yes / No
3.	Have you properly filled each row, blank spaces and filled rates and % ages on summary of estimates?	Yes / No
4.	Have you visited the site before preparing, filling, submitting the bid and quote rate?	Yes / No
5.	Have you clarified yourself from employer about the scope of work?	Yes / No
6.	Is the bid security attached as per IB-13?	Yes / No. Bank _____ No. _____ Valid for. _____
7.	Shall you deposit stamp duty, provide professional tax certificate and sign Contract agreement as envisaged in bidding documents on non-judicial stamp paper if contract is awarded to you as a result of bidding?	Yes / No

Signature; .

M/S .

Seal of Company; .

INSTRUCTIONS TO BIDDERS

Renovation Works at (KMU-IMS, Kohat)

Khyber Medical University, Institute of Medical Sciences, Kohat

A. GENERAL

IB.1 Scope of Bid & Source of Funds

1.1 Scope of Bid

The **Vice Chancellor, Khyber Medical University, Peshawar** (hereinafter called "the Employer") wishes to receive Bids for the **Renovation Works at (KMU-IMS, Kohat) Khyber Medical University, Institute of Medical Sciences, Kohat** (hereinafter referred to as "the Works").

Bidders must quote for the complete scope of work. Any Bid covering partial scope of work will be rejected as non-responsive.

1.2 Source of Funds

The Employer has arranged funds from its own sources.

IB.2 Eligible Bidders

2.1 Bidding is open to all firms duly licensed by the Pakistan Engineering Council (PEC) in any category.

IB.3 Cost of Bidding, Nos. of bids, site visit

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.

One Bid per Bidder

3.2 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.

Site Visit

3.3 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 the said works. All cost in this respect shall be at the bidder's own expense.

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

B. BIDDING DOCUMENTS

IB.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,
2. Form of Bid, Standard Form of Contract Agreement

3. Preamble and Bill of Quantities,
4. List of approved manufacturers,
5. Conditions of Contract
6. Specifications (Technical Provision)
7. Specifications (Special Provision)

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 following address;

The Director P&D, Khyber Medical University, Peshawar (PDA Building Hayatabad Peshawar).

- 5.2 The Engineer/Employer will respond to any request for clarification which it receives earlier than **five (05) days** prior to the deadline for the submission of Bids. Copies of the Engineer/Employer's response will be forwarded to all prospective bidders, at least **two (02) days prior** to dead line for submission of Bids, who have received the Bidding Documents 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 communicated in writing to all purchasers of the Bidding Documents. Prospective bidders shall acknowledge receipt of each addendum in writing to the Employer.
- 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 and all correspondence and documents relating to the Bid, exchanged by the bidder and 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) Covering Letter
 - (b) Form of Bid duly filled, signed and sealed, in accordance with Sub-Clause IB.14.3.
 - (c) Schedules (A to F) to Bid duly filled and initialed, in accordance with the instructions contained therein & in accordance with Sub-Clause IB14.3.
 - (d) Bid Security furnished in accordance with Clause IB.13.
 - (e) Power of Attorney in accordance with Sub-Clause IB 14.5.
 - (f) Attested copy of PEC registration in accordance with Clause IB.2.

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 Summary of Estimates, which %age, rates, prices etc. 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 The bidder shall fill up the Summary of Estimates indicating the %age and prices of the Works to be performed under the Contract. Prices in the Summary of Estimates shall be entered keeping in view the instructions contained in the Preamble to Summary of Estimates.
- 10.2 Unless otherwise stipulated in the Conditions of Contract, prices quoted by the bidder shall remain fixed during the bidder's performance of the Contract and not subject to variation on any account.
- 10.3 Pakistani rupee. (PKR) shall be currency of bid and payment.

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 and required by the Evaluation committee.
- 11.2 Bidder/Manufacturer must possess and provide evidence of its capability and the experience if required necessary by the evaluation committee.

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 if desirous by the committee.
- 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, Bid Security in the amount and shape as stipulated in invitation for bids.
- 13.2 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.
- 13.3 The bid securities of unsuccessful bidders will be returned upon award of contract to the successful bidder.
- 13.4 The Bid Security of the successful bidder will be retained and will be converted to security and shall be released with retention money in accordance to the conditions of the contract.
- 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, if observed by the evaluation committee.
 - (c) in the case of a successful bidder, if he fails to, sign the Contract Agreement, in accordance with Clauses IB.20.

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

- 14.1 Bids shall remain valid for ninety (90) days after the date of bid opening.
- 14.2 Summary of estimates is to be properly completed, signed and stamped.
- 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 submit Original copy of the documents comprising the bid as described in Clause IB.8.
- 14.5 The bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign. This shall be indicated by submitting a written Power of Attorney authorizing the signatory of the bidder to act for and on behalf of the bidder. 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.

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 but not later than the time and date as shown in invitation for bids.
- 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 bids 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 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

- 16.1 The Employer will open the bids, in the presence of bidders' representatives who choose to attend, at the time, date and location shown in Invitation for bids.
- 16.2 The bidder's name, percentages (%ages), Bid Prices, any discount, the presence or absence of Bid Security, and such other details as the Employer at its discretion may consider appropriate, will be announced by the Employer at the bid opening. The Employer will record the minutes of the bid opening. Representatives of the bidders who choose to attend shall sign the attendance sheet.
Any Bid Price or discount which is not read out and recorded at bid opening will not be taken into account in the evaluation of bid.
- 16.3 To assist in the examination, evaluation and comparison of Bids the Engineer/Employer may, at its discretion, ask the bidder for a clarification of its Bid. The request for clarification and the response shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted.
- 16.4 (a) Prior to the detailed evaluation, the Engineer/Employer will determine the substantial responsiveness of each bid to the Bidding Documents. For purpose of these Clauses, a substantially responsive bid is one which conforms to all the terms and conditions of the Bidding Documents without material deviations. It will include determination of the followings;

- a. the Bid is valid till required period,
- b. the Bid prices are firm during currency of contract,
- c. completion period offered is within specified limits,
- d. the Bidder is registered with PEC,
- e. the Bid does not deviate from basic technical requirements and
- f. the Bids are generally in order, etc.

(b) Arithmetical errors will be rectified as, If there is a discrepancy between the percentage (%age) and amount written the percentage (%age) shall be corrected from the amount written thereby and the total price shall be corrected. If there is a discrepancy between the totaling the minimum amount shall be considered and in case of discrepancy between words and figures the amount in words shall prevail. If there is a discrepancy between the Total Bid price entered in Form of Bid and the total shown in Summary of Estimates, the amount stated in the Form of Bid will be corrected by the Employer in accordance with the Corrected Summary of Estimates.

If the bidder does not accept the corrected amount of Bid, his Bid will be rejected and his Bid Security forfeited.

16.5 A Bid determined as substantially non-responsive will be rejected and will not subsequently be made responsive by the bidder by correction of the non-conformity.

16.6 Any minor informality or non-conformity or irregularity in a Bid which does not constitute a material deviation may be waived by Employer, provided such waiver does not prejudice or affect the relative ranking of any other bidders.

16.7 The Engineer/Employer will evaluate and compare only the bids previously determined to be substantially responsive pursuant to Sub-Clauses IB.16.4 to 16.6 as per requirements given hereunder. Bids will be evaluated for complete scope of works. The prices will be compared on the basis of the Evaluated Bid Price pursuant to Sub-Clause 16.8 herein below.

(a) **Technical Evaluation**

It will be examined in detail whether the Works offered by the bidder complies with the Technical Provisions of the Bidding Documents. For this purpose, the bidder's data if separately submitted with the bid will be compared with technical features/criteria of the Works detailed in the Technical Provisions. Other technical information submitted with the bid regarding the Scope of Work will also be reviewed.

(b) **Commercial Evaluation**

It will be examined in detail whether the bids comply with the commercial/contractual conditions of the Bidding Documents. It is expected that no material deviation/stipulation shall be taken by the bidders.

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 pursuant to Sub-Clause 16.4 hereof.
- 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. discount, if any, offered by the bidders as also read out and recorded at the time of bid opening.

16.9 Evaluation Methods

Pursuant to Clause 16.4 to 16.8 the lowest evaluated responsive eligible bid shall be determined and would be recommended for award by the bid evaluation committee.

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 prior to award of Contract. The announcement to all bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the bids evaluated.

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 to The Vice Chancellor Khyber Medical University, Peshawar not later than fifteen (15) 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**

18.1 The Employer, at any stage of the bid evaluation, having credible reasons for or *prima facie* evidence of any defect in bidder's capacities, will determine to its satisfaction that the substantially responsive lowest evaluated bidder to satisfactorily perform the contract.

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

18.2 The determination will take into account the bidder's financial and technical capabilities. It will be based upon an examination of the documentary evidence of the bidders' qualifications submitted under Clause IB.11, as well as such other information required in the Bidding Documents or by the bid evaluation committee.

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 satisfactorily perform the Contract in accordance with the provisions of Clause IB.18.

19.2 Not with standing 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.

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 The formal Agreement between the Employer and the successful bidder shall be executed on the non-judicial stamp paper within fourteen (14) days of the issuance of the "letter of acceptance" by the successful bidder and the Employer.

20.3 The successful bidder shall deposit stamp duty in Govt. Treasury before signing the agreement.

20.4 Successful bidder shall provide Professional Tax Certificate for the CFY.

FORM OF BID
(LETTER OF OFFER)

To:

The Vice Chancellor
Khyber Medical University
Peshawar

Subject: Renovation Works at (KMU-IMS, Kohat) Khyber Medical University, Institute of Medical Sciences, Kohat

1. Having examined the Bidding Documents including Instructions to Bidders, Conditions of Contract, Specifications, & BoQ alongwith preamble, List of approved manufacturer/Sources 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. As security for due performance of the undertakings and obligations of this Bid, we submit herewith a Bid Security in the amount as advised in the invitation for bids drawn in your favour or made payable to you and valid for a period of twenty eight (28) days beyond the period of validity of Bid.
3. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the Works comprised in the Contract within the stipulated time(s).
4. 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.
5. 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.
6. We undertake, if our Bid is accepted, the bid security shall be at your disposal till the completion of the works referred to in Conditions of Contract for the due performance of the Contract.
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 _____, 2012

Signature _____

in the capacity of

duly authorized to sign bid for and on behalf of _____

(Name of Bidder in Block Capitals) _____ .

(Seal)

Address _____

Witness:

(Signature) _____

Name: _____

Address: _____

**PREAMBLE TO BILL OF QUANTITIES
RENOVATION WORKS AT (KMU-IMS, KOHAT)
KHYBER MEDICAL UNIVERSITY, INSTITUTE OF MEDICAL SCIENCES, KOHAT**

1. General.

- 1.1 The BoQ shall be read in conjunction with the Conditions of Contract, together with the Specifications (Technical and Special Provisions) & list of approved manufacturers/Source.
- 1.2 The Contract shall be for the whole of the Works as described in these Bidding Documents. Bids must be for the complete scope of works.

2. Description.

- 2.1 The general directions and descriptions of works and materials are not necessarily repeated nor summarized in the BoQ. References to the relevant sections of the CSR are made before entering prices against each item. In case of any confusion description of relevant item of CSR shall be applicable in conjunction with detailed description of CSR and rate analysis.

3. Units & Abbreviations.

- 3.1 Units of measurement, symbols and abbreviations expressed in the Bidding Documents shall comply with the FPS System except steel reinforcement which is in MKS system.

4. Rates and Prices.

- 4.1 Except as otherwise expressly provided under the Conditions of Contract, the rates of BoQ inclusive of %age (above/below) entered in the summary of BoQ shall be the rates at which the Contractor shall be paid and shall be the full inclusive value of the works set forth or implied in the Contract; except for the amounts reimbursable, if any to the Contractor under the Contract.
- 4.2 Unless otherwise stipulated in the Contract Data, the rates and prices entered by the bidder shall not be subject to adjustment during the performance of the Contract.
- 4.3 All duties, taxes and other levies payable by the Contractor shall be included in the Bidding amount.
- 4.4 Furthermore;
 - (a) the bidder shall be deemed to have obtained all information by visiting the site as to and all requirements related thereto which may affect the bid price.
 - (b) The Contractor shall be responsible to make complete arrangements for the transportation of the Plant to the Site.
 - (c) The bidder shall be deemed to have read all the bidding documents carefully before quoting the rates.
- 4.5 The Contractor shall provide for all parts of the Works to be completed in every respect. Notwithstanding that any details, accessories, etc. required for the complete installation and satisfactory operation of the Works, are not specifically mentioned in the Specifications, such

details shall be considered as included in the Contract Price.

- 4.6 The unit rates for pricing BoQ are adopted of Composite Schedule of Rates CSR-2012 of Govt. of Khyber Pakhtunkhwa as on Jul-Sep (Qtr-3) 2012, however rates for Non-Schedule items are analyzed from current market. The Bidder is required to offer premium/discount (above or below) the total estimated cost at the place provided for the purpose in the summary of Bill of Quantities of the Schedule item, while no premium (above) the Non-Schedule item rate shall be provided. The bidder may offer discount (below) the Non-Schedule Rates given in the Bidding Documents.
- 4.7 Any variation if ordered in writing shall be priced on Composite Schedule of Rates (CSR) 2012 of Govt. of Khyber Pakhtunkhwa, duly adding the %age quoted in summary of estimates by the bidder/Contractor, however in case of Non-Schedule items, they shall be analyzed by the contractor and verified by the employer from current market rates along with addition of 21% (6% income tax, 10% Contractor Profit and 5% overhead charges).

5. Quantities and Claims

- 5.1 The quantities given in the BoQ are estimated, and are given to provide a common basis for comparison of bids. The basis of payment will be the actual quantities of work executed, measured by the contractor, verified by the Engineer and valuated at the rates and prices entered in the priced BoQ in addition to approved %age.
- 5.2 As stated above quantities of BoQ is only for bidding process and being the renovation works the work shall be executed as per site and user's requirement, fulfilling the engineer's directions in accordance to the contract requirement, shall be measured and paid accordingly.

Summary of Estimates
Renovation works at KMU-IMS, Kohat

Khyber Medical University, Peshawar- Institute of Medical Sciences, Kohat

Sr. #	Description	Amount
A.	Schedule Items (priced on CSR 2012)	
1	Civil Works	Rs. 1,791,148/-
2	Plumbing works	Rs. 137,160/-
3	Electrical Works	Rs. 675,024/-
	Sub-Total A.	Rs. 2,603,332/-
	Add/Deduct _____%(_____percent) on the Schedule items	
	Net Total A.	
B.	Non-Schedule items	
4	Plumbing works	Rs. 338,450
5	Electrical Works	Rs. 13,200
	Sub-Total B.	Rs. 351,650
	At par/Deduct _____%(_____percent) on the non-Schedule items	
	Net Total B.	
	G. Total A+B.	

We the undersigned offer to execute and complete such works and remedy any defect therein in conformity with the complete bidding/contract documents (i-e Conditions of the Contract, Bill of Quantities/Estimate, list of approved manufacturers/sources, Specifications both Special and Technical Provisions), and addendum in the stipulated period at the %age/Rates quoted above.

Dated Signature._____
M/S _____
Bidder/Contractor seal. _____

Engineer's Estimate (Bill of Quantities)						
Renovation Works at KMU Institute of Medical Sciences, Kohat						
Sr. #	Description	Quantity	Unit	CSR Item No	Rate	Amount
1	2	3	4	5	6	7
A. Schedule Items (Civil works)						
1	Chapter-4 (Demolition)					
1.01	Demolition of walls made of brick work	6.19	%Cft	04-13	1,581.00	Rs. 9,786
1.02	Demolition of floors made of concrete.	24.54	%Cft	04-19-c	4,092.00	Rs. 100,418
1.03	Hacking out of plaster in cement plaster	24.53	250 Sft	04-48-b	372.00	Rs. 9,125
1.04	Scraping ordinary distemper etc. from wall	100.65	%Sft	04-49-b	279.00	Rs. 28,081
2	Chapter-6 (Concrete)					
2.01	Dry rammed shingle brick ballast or stone ballast 1.5" to 2" gauge	19.26	%Cft	06-02	2,793.06	Rs. 53,794
2.02	Plain Cement Concrete incl. Placing, compacting, finishing & curing incl. screening and washing of stone aggregates					
a.	(Ratio 1:4:8)	14.51	%Cft	06-05-i	12,583.07	Rs. 182,580
b.	(Ratio 1:2:4)	12.27	%Cft	06-05-f	16,709.17	Rs. 205,022
3	Chapter-10 (Flooring)					
3.01	Providing and fixing Glazed Tiles colour printed Borders 2" wide.	5.45	% Rft	10-26-f	15,775.26	Rs. 85,975
3.02	Providing and laying of Glazed tile 1/4" thick as in dado/skirting jointed in white cement and laid over 1:2 cement sand mortar 3/4" thick incl. finishing complete : Printed tiles, of size as shown on drawings.	25.79	% Sft	10-39	9,294.33	Rs. 239,701
3.03	Providing and laying of Porcelain Tile Floor 1/4" thick laid over 3/4" thick cement mortar 1:2 (Local Master Tiles).	49.93	% Sft	10-48-a	10,064.57	Rs. 502,524
4	Chapter-12 (Wood work wooden/Aluminum Joinery)					
4.01	Hollow flush door 1.5-2" commercial veneered.	240.63	Sft	12-52-d	456.78	Rs. 109,915
4.02	Extra for providing/fixing approved quality Rim locks (Local).	5	No	12-20-a-02	1,048.47	Rs. 5,242
4.03	Extra for providing/fixing approved quality Brass Sliding bolt.	5	No	12-18-c-02	1,153.51	Rs. 5,768
4.04	P/F hydraulic Door closers single action (best quality).	9	No	12-17-b	1,321.60	Rs. 11,894
4.05	Floor Cabinet comprising 3" RCC Roof reinf. with 3/8" dia bars @ 6" c/c b/ways and 1" thick marble slab top bull nosed, 4 1/2" thick brick walls (1:4) and as base, deodar wood frame and leaping to lasani shutters and shelves duly painted, incl. magnetic/spring catchers, hinges, handles hasp & staples etc. all as per drawing as spd.	32.50	Sft	12-62-a	804.05	Rs. 26,132
4.06	Walls Cabinet comprising deodar wood frame with lasani shutters and shelves duly painted, incl. magnetic/spring catchers, hinges, handles hasp & staples etc. and L. Iron for fixing on walls all as per drawing as spd.	32.50	Sft	12-62-b	623.24	Rs. 20,255
5	Chapter-13 (Painting & Varnishing)					
5.01	Preparing surface and painting with emulsion paint : First coat	100.65	% Sft	13-30-a	1,025.99	Rs. 103,266
5.02	Preparing surface and painting with emulsion paint: 2nd & Each subsequent coat.	100.65	% Sft	13-30-b	910.80	Rs. 91,672
Total of Civil Work (Schedule Items)						Rs. 1,791,148,

Engineer's Estimate (Bill of Quantities)						
Renovation Works at KMU Institute of Medical Sciences						
Sr. #	Description	Quantity	Unit	CSR Item No	Rate	Amount
1	2	3	4	5	6	7
A.	schedule items					
6	Chapter-14 (Plumbing, Sanitary Installations & Gas Fittings)					
6.01	Providing and Fixing Glazed Earthen Ware WHB with pedestal (ICL or equivalent make) complete Size 25"x18" :	4	No	14-05-b-02	3049.92	Rs. 12,200
6.02	Providing and Fixing European pattern WC Coupled set	02	No	14-01-b, 02-a	5019.10	Rs. 10,038
6.03	Providing and Fixing Stainless Steel Sink with drain board size 48"x24" incl. Brackets, Waste Pipe etc.	04	No	14-06-a	4743.92	Rs. 18,976
6.04	Providing and Fixing Soap Tray (earthenware).	8	No	14-14-b	475.58	Rs. 3,805
6.05	Providing and Fixing Towel Rail (C/P) 3/4".	3	No	14-16-a	505.83	Rs. 1,517
6.06	Providing and Fixing best quality 5mm mirror 22"x16" Size.	04	No	14-17	774.75	Rs. 3,099
6.07	Providing and Fixing best quality Plastic Shelf 24"x5"	7	No	14-20-d	203.33	Rs. 1,423
6.08	Providing and Fixing 1/2" CP Tee Stop Cock (Faisal or equivalent make).	18	No	14-25	747.83	Rs. 13,461
6.09	Providing and Fixing CP swan-neck cock double way Mixing Valve for WHB, Sink (Faisal or equivalent make).	8	No	14-27	2,165.52	Rs. 17,324
6.10	Providing and Fixing 4" Gully Trap with PCC, incl. Masonry Chamber 1'x1' and PVC Grating 6"x6" complete work.	05	No	14-33	580.82	Rs. 2,904
6.11	P&F approved best quality gas water heaters 50 gallons capacity (NASGAS, COMFERT, SINGER or equivalent make).	01	No	14-62-c	21888.75	Rs. 21,889
	Total of Plumbing Work (Schedule Items)					Rs. 137,160/-

Engineer's Estimate (Bill of Quantities)						
Renovation Works at KMU Institute of Medical Sciences						
Sr. #	Description	Quantity	Unit	CSR Item No	Rate	Amount
1	2	3	4	5	6	7
A.	Schedule Items					
7	Electrical Works					
7.01	PVC CONDUITS/PIPES					
	Supply and erection of PVC pipe for wiring purpose including inspection boxes pull boxes, hooks, bend tees etc. complete with all specials; complete recessed in walls i/c making chase, cost of hooks and repairing of surface etc.					
a.	3/4" i/d	200.00	Rft	15-02-b-02	43.16	Rs. 8,632
b.	1" i/d	300.00	Rft	15-02-b-03	48.49	Rs. 14,547
7.02	WIRING & POWER CABLES (250/440VOLTS)					
	Supply and erection of single core PVC insulated copper conductor 250/440 volts grade cable (BSS-2004) in pre-laid pipes etc.					
a.	3/0.029"	1550.00	Rft	15-05-a	9.62	Rs. 14,911
e.	7/0.044"	2701.00	Rft	15-05-e	36.44	Rs. 98,424
7.03	POWER CABLES (660/1100VOLTS)					
	Supply and erection of Twin core PVC insulated & Sheathed copper conductor 660/1100 volts grade cable (BSS-2004) in pre laid pipes etc.					
a.	7/0.064"	700.00	Rft	15-07-a	72.96	Rs. 51,072
7.04	BACK BOXES OF SWITCH BOARDS					
	Supply and erection of M.S sheet boxes of 16 SWG 4" deep with 3/16" thick Bakelite sheet top for recessed wiring including making holes for regulator, switch, plug etc complete.					
a.	4"x4"	16	No.	15-09-a	110.25	Rs. 1,764
b.	9"x4"	12	No.	15-09-c	187.38	Rs. 2,249
7.05	CALL BELL & BELL PUSH					
a.	Supply and erection of call bell 220/250 volts fixed on shall wood board 7"x4".	3	No.	15-16	98.46	Rs. 295
b.	Supply and erection of bell Push or bed switch with 5 meter twin flexible wire 23/0.0076.	3	No.	15-17	169.48	Rs. 508
7.06	10/15 AMPS SWITCHES					
a.	Supply and erection of switches 10/15 Amp. Recessed type.	152	No.	15-18-b	107.96	Rs. 16,410
7.07	3 PIN SWITCH & PLUG COMBINED					
	Supply and erection of 3 pin switch and plug combined recessed type.					
b.	10/15 Amp.	40	No.	15-20-b	177.11	Rs. 7,084
7.08	DOUBLE & SINGLE TUBE ROD FITTINGS					
	Supply & erection of Philips tube light i/c rod choke. Starter with frame, flexible wire including connection for ceiling rose etc. complete.					
b.	Single Rod (40 watts) with 1 chokes & 1 starter.	22	Set	15-24-b	999.60	Rs. 21,991

7.09	LIGHT/FAN/CALL BELL POINT & WIRING					
	Wiring light/fan/call bell point in 3/0.029" PVC insulated bare cable (BSS-2004) incl. PVC pipe recessed in wall and complete with wooden boxes & housing switch with 3/16" thick white plastic sheet covering upto 30' length with piano switch only I/c cost of making & filling chase complete finish.	151	No.	15-50	1005.07	Rs. 151,766
7.10	2/3 PIN, 5AMPS PLUG WIRING					
	Wiring of 2/3-pin 5-Amp. plug point in 3/0.029" PVC insulated bare cable (BSS-3004) incl. PVC pipe recessed in the wall and complete with wooden boxes for housing plug unit with 3/16" thick white plastic sheet covering upto 20' length with combined/separate wall socket & switch i/c cost of making and filling chase complete to finish.	16	No.	15-51	530.02	Rs. 8,480
7.11	FANCY WALL BRACKET LIGHTS					
	Supply and erection of fancy wall type bracket light with brass holder and fancy shade complete.					
a.	Single	24	No.	15-55-a	453.26	Rs. 10,878
7.12	CEILING FAN					
	Supply and erection of best quality/approved make as Climax, Asia, Millat, National, National, Breeze, & Pak fans or Equivalent (premium quality) AC Ceiling Fan complete with GI rod, canopy, blades and regulator as per direction of Engineer.					
a.	56" sweep	55	No.	15-68-c	3017.17	Rs. 165,944
7.13	EXHAUST FAN					
	Supply and erection of best quality/approved make as Climax, Asia, Millat, National, National, Breeze, & Pak fans or Equivalent (premium quality) Exhaust Fan with shutter etc.					
a.	12x12" sweep	10	No.	15-77-c	2326.62	Rs. 23,266
7.14	EARTHING WIRE & PIPE					
	Earthing of iron clad aluminum switches etc. with G I Wire No 8 SWG in GI pipe 1/2" dia recessed or on surface of wall and floor complete with 4.5' long GI pipe 2" dia with reducing socket 13' to 16' below G.L and 6' away from building complete in all respect except excavation.	3	Job	15-41	4782.09	Rs. 14,346
7.15	EARTHING SYSTEM (PLATE TYPE)					
	Supply and erection of 2'x2'x1/8" copper plate i/c riveting to copper tape and placing in mixture of salt and charcoal etc. complete.	3	No.	15-42	6998.77	Rs. 20,996
7.16	SPECIAL EARTHING					
	Special Earthing of iron / metal clad switches etc. with copper wire No: 8 SWG in G I Pipe 0.5" dia recessed or on surface of wall & floor complete with 2'x2'x1/8" thick copper plate charcoal & salt in well 13 to 16 feet below ground level and 6' away from building .	1	No.	15-53	10,033.99	Rs. 10,034
7.17	Supply and Erection single phase imported auto circuit breaker 3-phase, 400V fungus moisture proofing: 100 Amp	24	No.	15-71-c	584.57	Rs. 14,030
7.18	Supply and Erection transpower imported auto circuit breaker 20 Amp. 30 Amp	3	No.	15-70-c	5798.40	Rs. 17,395
	Total of Electrical Work					Rs. 675,024/-

Engineer's Estimate (Bill of Quantities)					
Renovation Works at KMU Institute of Medical Sciences					
Sr. #	Description	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
B.	Non-schedule items				
8	Plumbing Works				
8.01	Providing, fixing, jointing and testing Polypropylene Random (PPR) pipes Dadex make "Polydex" or approved equivalent pressure pipe for cold/hot water as per DIN 8077-8078,PN-20 for pipes and DIN 16962,PN-25 for fittings (polyfusion welded joints) inside building including fittings and specials (sockets, tees, elbows, bends, crosses, reducers, adaptor, plugs and union etc.) supported on walls or suspended from roof slab or run in chases including pipe hangers, supports, cutting and making good the chases and holes including insulation against sun light complete in all respects.				
a.	25 mm o.d	200.00	Rft.	106.00	Rs. 21,200
b.	40 mm o.d	100.00	Rft.	244.00	Rs. 24,400
8.02	Providing and installing ball valves of following nominal dia, Kitz make, including jointing, fitting, painting & testing complete in all respects to match with PPR, PE and GI pipes of following diameters.				
a.	25 mm o.d	25	No	918.00	Rs. 22,950
b.	40 mm o.d	2	No	1500.00	Rs. 3,000
8.03	Providing, fixing, cutting, jointing and testing uPVC piping conforming to ISO 3633:1991 including uPVC fittings with solvent cement jointing rates include cost of excavation, compaction, rehandling of earth,4" thick brick ballast under 130' length of 6" dia pipe ,clamping to walls and ceiling, hangers, supports, cutting through walls and providing sleeves through concrete slabs for pipelines and pipe fittings of the following diameter:				
a.	2" dia	190	Rft.	166.00	Rs. 31,540
b.	4" dia	400	Rft.	293.00	Rs. 117,200
d.	6" dia	30	Rft.	360.00	Rs. 10,800
e.	2" dia Bend/Tee etc	28	No.	166.00	Rs. 4,648
f.	4" dia Bend/Tee etc	60	No.	293.00	Rs. 17,580
g.	6" dia Bend/Tee etc	2	No.	360.00	Rs. 720
8.04	S/F 150mm x150mm PVC grating in position	75	No.	120.00	Rs. 9,000
8.05	Construction of man hole complete	1.00	Job	15000.00	Rs. 15,000
	FIRE FIGHTING SYSTEM				
8.06	Providing, fixing, testing & Installation including all necessary fittings and accessories Fire Extinguishers of 6Kg capacity.				
a.	CO2 Extinguishers	01	No.	5000	Rs. 5,000
b.	Halotron 1Gas Extinguishers.	01	No.	20000	Rs. 20,000

8.07	Providing, laying, jointing, pressure testing and disinfecting , Seamless, MS (mild steel) ASTM schedule -40 including all fitting , clamps , & specials , such as tees , reducers , unions , bends , etc. pipe lines with welded type fittings including excavation & back fill , protective coating consisting of two coats of bitumen and wrapping of bitumen dipped hessian cloth for pipes below ground and one coat of red oxide with two coats of enamel paint for pipe above ground including its hangers and supports, Technical provisions , related civil works complete in all respect as per drawings specifications, and / or as directed by the Engineer Incharge.				
a.	2.5 in. (wall thickness 6.4 mm)	100	Rft.	129.53	Rs. 12,953
b.	1-1/2 in. dia (wall thickness 6.4 mm)	50	Rft.	114.29	Rs. 5,715
8.08	Providing & Installation of Fire Hose Reel Cabinets (915mm x 760mm x 228mm), wall mounted swinging arm type made of 18 SWG. M.S sheet, Glass front, incl. 25mm brass valve at inlet, fire hose, high pressure Nylon Plastic, spray type, Max. working pressure: 250 lbs psi. Bursting Pressure: 600 lbs psi 2.5"x100' (made in Germany) Fitted with male and female instantaneous couplings, one nozzle, rubber lined. Made in Germany, complete in all respect as per drawings specifications, and / or as directed by the Engineer Incharge.	1	No.	13500.00	Rs. 13,500
8.09	Supply and fix in repair 5mm thick sheet glass in position.	8.44	Sft	100.00	Rs. 844
8.10	S/F Muslim Shower including double bib cock as spd.	02	No	1200.00	Rs. 2,400
	Total of Plumbing Works (Non-Schedule Items)				Rs. 338,450/-

Engineer's Estimate (Bill of Quantities)					
Renovation Works at KMU Institute of Medical Sciences					
Sr. #	Description	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
B. Non-Schedule Items ELECRICAL					
9	LIGHT FITTINGS AND FIXTURES				
	Supply, fix, install energy savers with Bakelite holder etc. in position as per direction of engineer.				
9.01	24 watts.	24	No.	350.00	Rs. 8,400
9.02	18 watts.	16	No.	300.00	Rs. 4,800
	Total of Electrical Work (Non-Schedule Items)				Rs. 13,200/-

**LIST OF APPROVED MANUFACTURERS/SOURCES
RENOVATION WORKS AT (KMU-IMS, KOHAT)
KHYBER MEDICAL UNIVERSITY, INSTITUTE OF MEDICAL SCIENCES, KOHAT**

Ser	Description of items	Manufacturer/source
1.	Crushed stone aggregate	Margala, Baisai
2.	Reinforcement steel	Karachi steel mills, AFCO, Mughal, Amrelli, Fazal Razzaq, Prime, Metropolitan,
3.	Sand	Lawrencepur for concrete and other works
4.	G.I Pipes	IIL, JamaL
5.	G.I Pipes (Specials)	Chinese (imported)
6.	Cast Iron Pipes & Fitting,,	ALPINE,CME
7.	Anti termite	Termidor Dursbin, Biflex, Protect
8.	R.C.C Pipes	Izhar group of companies
9.	Water Proofing Agent & Admixture	FAB, SIKA, Vandex, Frosrock, Dupont
10.	Paint	ICI Dulux, Berger,Master
11.	Aluminum	Pak Cable, Alcop, Chawala aluminum, Prime aluminum
12.	Ceramic Tiles /Porcelain Tiles	Master tiles, shabbier tiles
13.	Gate value & sluice value	Kitz (japan)
14.	Stain less steel sink	Atlas ,Super Asia, Arshad
15.	Upvc pipe & fitting	Dadex , Beeta, MAF
16.	Sanitary fixture	ICL ,Bosch,Master,IFO,ROCO,Porto,Orin, Durr
17.	Sanitary fittings	Master ,Sonex ,ROCO,KOHLER,GROHE,ORIN
18.	Door, kitchen cabinet	Inter wood, holztic, starling,
19.	Door lock	Star,
20.	PPRC	Dadex , Beeta, Builtex, MAF
21.	Transformers	M/S PEL Pakistan M/S Siemens Pakistan
22.	Cable (High tension)	M/S Pakistan Cables(Pakistan) M/S Pioneer (Pakistan) M/S Tech Cable(Pakistan) M/S AGE Cables (Pakistan)
23.	Cable (Low tension)	M/S Pakistan cables(Pakistan) M/S pioneer(Pakistan) M/S Fast Cable(Pakistan) M/S Teach Cable(Pakistan) M/S Ali cable (Pakistan) M/S Newage Cable (Pakistan)
24.	Light fitting & fixtures	M/S Philips (Pakistan) M/S sunlight(Pakistan) M/S Clipsal (Australia) M/S Paragon(Italy)
25.	Cable conduits(PVC)	M/S Shavyl (Pakistan) M/S Galco (Pakistan) M/S Papular (Pakistan) M/S Dadex(Pakistan) M/S Beeta (Pakistan)
26.	Load break switch	M/S G & W (USA)
27.	Compression lugs	M/S Rachem (USA&UK)
28.	Transformer protection circuit breakers	M/S ABB (Germany) M/S GE (Europe) M/S Siemens (Germany)
29.	Automatic road/street light control photocells	M/S National(Japan) M/S Clipsal (Australia)

30.	H.t panel(WAPDA)	M/s PEL Pakistan M/S Siemens Pakistan
31.	Circuit breakers	M/S ABB (Germany) M/S M&G (France) M/S Legrand (France) M/S Terrasakil (Japan) M/S Mitsubishi (japan)
32.	Relays	M/S Emeril (Japan) M/S national(Japan)
33.	Contractors soil relay	M/S Togamin (Italy) M/S National(Japan)
34.	Power capacitor	M/S Nokia (Finland) M/S Suzuki (Japan)
35.	Volt meter Ampere meter .phase indication lights, other accessories for LT, HT switchgear.	M/S Briter (Italy) M/S Saci (SPAIN) M/S Legrand (RANCE) M/S K&N (NEW Zealand) M/S Zahra (Germany) M/S Dief (Denmark)
36.	LT Switchgear	M/S Pel (Pakistan) M/s JEI (Lahore, Pakistan) M/S Elmetech (Lahore, Pakistan) M/S Eleectromch(Lahore, Pakistan) M/S Electrech (Lahore, Pakistan) M/S south asia (Lahore-Pakistan)
37.	Lamps	M/S Philips –OSRAM
38.	CL Junction boxes	Hilal industries International industries Hussein & co.
39.	Switches & switch sockets etc.	M/s ABB (Germany) M/s legrand (France) M/S Clipsal(Australia) M/S MK (UK)
40.	Back boxes for switches & socket.	M/S legrand (France) M/S ABB (Germany) M/s MK (UK) M/S clipcel(Australia)
41.	Fans	Climax, Asia, Millat, National, Breez, Pak Fan
42.	Telephone out let & cable	M/s Clipsel (Australia) M/S Legrand (France) M/S Siemens (Germany)
43.	Fire alarm system	Hony well USA,GENT UK
44.	Fire fighting system	Haseein –habibs
45.	Public address system	Sun (japan), Phillips(Holland)
Note.	In case of non-availability of the above mentioned materials/items equivalent specifications material shall be utilized/incorporated in the works subject to the approval of the Engineer/Employer.	

**CONDITIONS OF THE CONTRACT
RENOVATION WORKS AT (KMU-IMS, KOHAT)
KHYBER MEDICAL UNIVERSITY, INSTITUTE OF MEDICAL SCIENCES, KOHAT**

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 Agreement.

1.1.2 “Specifications” means the specification of the works included in the contract including any modification thereof or addition thereto made under the conditions of the contract.

The Persons

1.1.4 “Employer” means the Vice Chancellor Khyber Medical University, Peshawar and the legal successors in title to this person.

1.1.5 “Contractor” means the person whose bid has been accepted by the Employer 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 fourteen (14) days after the date the Contract comes into effect or any other date mentioned in notice to commence work.

1.1.8 “Day” means a calendar day

1.1.9 “Time for Completion” means the prescribed time for completing the Works as mentioned in notice to commence work (or as extended under Sub-Clause 7.3), calculated from the Commencement Date.

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, i.e. KMU-IMS, Kohat.

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, Renovation 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.
- 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 Agreement.
- 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 for execution of works.
- 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 notified in writing to the Contractor as soon as he is so appointed. 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 shall be notified by the Engineer/Employer, alongwith the delegated duties and authority.

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

Not required as the bid security shall be retained for the purpose alongwith the retention money which shall be released on satisfactory expiry of the defect liability period.

5. DESIGN BY CONTRACTOR

5.1 Contractor's Design

The Contractor shall carry out design where required or and directed by the Engineer/Employer. 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, subject to Sub-Clause 7.3 below, within the specified Time for Completion.

7.2 Program

The Contractor shall submit to the Engineer/Employer a program for the Works to be executed in the form as provided and approved by the Employer/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

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 Letter of Acceptance.

b. Slow Progress.

Time is the essence of the work. To ensure completion in the stipulated time all the shareholders shall strictly monitor the progress. To avoid delay in performance other than due to risk of employer the contractor would be penalized @ **0.05%** per day up to a maximum of **5%** of the difference required to be claimed as per actual required cash flow and work done. However the Employer may implement or waive off after consulting with the Engineer.

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 repair and rectify work(s) 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 six (06) months from the date of issue of the Certificate of Completion by the Employer, at no cost to the Employer. 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 examinations of works before covering up

No part of the work before covering up or put out of view without the approval of the engineer and the contractor shall afford full opportunity for the engineer to examine and measure any such part of the work which is about to be covered up or put out of view and to examine foundations, steel reinforcement, pipes etc. before any part/work is placed therein/on. The contractor shall give notice to the engineer whenever any part of the works is or are ready or about to be ready for examination and the engineer shall, without unreasonable delay, unless he considers it unnecessary and advises the contractor accordingly; attend for the purpose of examining and measuring such part of the works.

9.3 Uncovering and Testing

The contractor shall uncover any part of the works or make opening in or through the same as the engineer may from time to time instruct and shall reinstate and make good such part. If any such part has been covered up or put out of view after compliance with the requirement of sub-clause 9.2 and is found to be executed in accordance to the contract, the engineer after due consultation with employer determine the amount of the contractor's cost in respect of such uncovering, making opening in or through, reinstating and making good the same, which shall be added to the contract price, and shall notify the contractor accordingly, (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

As prescribed in preamble to the Bill of Quantities.

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 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 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

Shall be priced by adopting BoQ rates including %age as approved.

11.2 Monthly Statements

The Contractor shall be entitled to be paid at monthly intervals the value of the Works actually executed and verified by the Engineer. 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 prescribed rate.

11.4 Retention

Retention money shall be deducted from the Running/ final payments @ eight (08%) of the total value of work done under this certificate. Retention money alongwith bid security already retained from the contractor shall be paid by the Employer to the Contractor within fourteen (14) days after either the expiry of the defect liability period, or the remedying of notified defects, or the completion of outstanding work, all as referred to in Sub-Clause 9.1, which ever 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 made in Pakistani rupees PKR.

12. DEFAULT

12.1 Default 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 Default 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:

- 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 to a sum equivalent to twenty percent (20%) of the value of parts of the Works not executed at the date of the termination, and
- d) 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 with 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:

- 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

Not applicable.

14.2 Default

Not applicable.

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.

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 hereabove, 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 thereunder and any statutory modifications thereto. Any hearing shall be held at Peshawar (Pakistan) and in the language referred to in Sub-Clause 1.5.

SPECIFICATIONS - SPECIAL PROVISIONS
RENOVATION WORKS AT (KMU-IMS, KOHAT)
KHYBER MEDICAL UNIVERSITY, INSTITUTE OF MEDICAL SCIENCES, KOHAT

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.
- 1.3 These specification shall be adopted in accordance to the directions of the Engineer where he requires.

2. DESCRIPTION OF PROJECT AND SITE

- 2.1 An Administrative Approval has been granted by the Vice Chancellor Khyber Medical University, Peshawar to carry out renovation works at (KMU-IMS, Kohat) Khyber Medical University, Institute of Medical Sciences, Kohat and it is intended by the employer to carryout the Contract for the execution of Civil Works (which includes Civil, Electrical, Plumbing & related works).
- 2.2 The proposed project envisages herein this Contract shall be Renovation Works at Khyber Medical University, Institute of Medical Sciences, Kohat (KMU-IMS), as for this Contract the built up of all above stated works and the entirety of which shall be featured with all incidentals pertaining to Civil, Public Health, Electrical, and related works.
- 2.3 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.

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.

6. PLANT, EQUIPMENT AND TOOLS

The Contractor shall provide at his own cost, modern plant, including 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 Conditions of Contract 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 program 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.

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 price i.e %age 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 by the Employer (as per direction of Engineer).

9. SURVEYING INSTRUMENTS

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 Helpers. 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 if directed by the engineer.

- i. Electronic Total Station with accessories
- ii. Steel measuring tapes 30 m long
- iii. Steel measuring tapes 6 m long
- 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 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 refers.
- 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 color, 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 colors 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 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, labor 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.

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 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.

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 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 (if required)

15.1 Contractor's Office, Facilities Etc.

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 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 fire fighting 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 labor camp, work yard, storage area and site offices within the site areas available at the sites.

15.4 Sign Board

Not required

15.5 Facilities for the Engineer/Engineer Representative

Transport Facilities

The Contractor shall have to provide transportation for Engineer/ Engineer Representative Staff to meet their transportation needs in connection with the project i-e pick and drop services from Peshawar to site. However no separate payment shall be made for the same. 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

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 Labor Camps and Staff Residences for the execution of the works

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.

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.

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 applicable.

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. 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 Contractors. 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.

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 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.

30. COSTRUCTION & 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. 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. 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. No physical work shall be carried out with out prior approval of the Engineer's representative and in absence of Engr'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.

**SPECIFICATIONS – TECHNICAL PROVISIONS
RENOVATION WORKS AT (KMU-IMS, KOHAT)**

KHYBER MEDICAL UNIVERSITY, INSTITUTE OF MEDICAL SCIENCES, KOHAT

1. GENERAL

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

In case of ambiguity in these specifications, PICC specifications shall be referred.

1.1 BURNT BRICKS.

Bricks Shall be well burnt without being vitrified, of uniform Color regular in shape and parallel faces, must be homogeneous in texture, emit clear ringing sound when struck, free from flaws & cracks, should not absorb more than 1/5th 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.

Nominal size	9"x 4-3/8"x 2-11/16" (228x111x68mm)
Minimum size	not less than 8-5/8"x4-1/8"x2-5/8" (219x105x67mm).
Compressive strength	not less than 2000 lbs/sq. inch.

2 FINE AGGREGATE

2.1 Source.

Fine Aggregate shall be obtained from approval sources.

2.1.1 Grading.

Fine Aggregate shall consist of well graded sand stone screening other inert material of similar characteristics or a combination of these, shall conform the requirement 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.

2.1.2 Cleanliness.

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

2.1.3 Quality.

Fine Aggregate shall be sharp cubical hard dense and durable.

2.1.4 Storage and Protection.

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

3 COURSE AGGREGATES

3.1 Source.

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

The gradation limit shall conform to the requirements of the B.S 882 Part-1, 1950 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 fore cast-in-place reinforced concrete slabs and other thin member shall be ¾". If there are difficulties in placing such a concrete the maximum size may be restricted to ½" providing the requirement for strength are satisfied.

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, C42, C123 and C-140.

3.3 Quality.

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

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 separate. These may be washed if required and contractor will do this without any extra charges.

4 COURSE AGGREGATES**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 specification:

a) Specific Gravity at 77 °F	1.02/1.04
b) Softening Point (R&B)	170/200 °F
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	300/350 °F

4.2 Protection/Test.

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

4.3 Bituminous Material for Roof.

Special bitumen shall be used as sealing material for the roof; it shall be a mineral filled thorax tropic 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 Fro, solvents
c) Consistency	Soft Paste.
d) Density	1.1 gm/cm ³
e) Dry Residue	05%
f) Flash Point	Non Flammable
g) Heat	Resistance Up to 150°C (Dry Heat)

4.4 Mastic Asphalt.

Mastic asphalt shall be used as sealing material for the foundation raft, it shall conform to B.S. Specification 1079-oct. 1973 for (Mastic Asphalt for tanking and damp proof course).

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.

5 BITUMENIZED PAPER/POLYTHENE

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.

5.2 Test Sample.

The building paper if used shall weight 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 layers.

The samples shall be approved before incorporation in the work. The contractor shall submit the sample which shall be retained till the completion of the work. The cost of such sample shall be deemed to be including in unit rate of the relevant items entered in the bill of Quantities.

6 CLAY/EARTH

6.1 General.

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

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.

7 WIRE GAUZE

7.1 General.

Unless otherwise specified the wire gauze shall be of best quality approved uniformly, woven wire webbing of 12x12 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.

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.

8 GLASS

8.1 General.

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

8.2 Quality.

The quality and specifications of glass used be as follow:
All glass shall be of approved manufacture and quality.

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

- a) Sheet glass unless specified shall be flat drawn weighting not less than 5.87 gms/sq.cm (22-1/2 ounces foot) and shall be the type as defined in the British Standard Specification 952 or equivalent ASTM Standard.
- b) Obscure 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 interiors and exterior glazing shall conform to the requirements of B.S. 544,. Compound for metal frames shall be as recommended by the manufacture for the particular application.

8.3 Samples.

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

9 LIME

9.1 Definition.

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

9.2 Source of Stone Lime.

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

9.3 Source of Kanker Lime.

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

9.4 Storage.

Lime shall be stored in dry and weather proof sheds in 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.

9.5 General.

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

10 PAINTER AND DECORATOR

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.

10.2 Materials.

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

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

Colour 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 like 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. 2092.

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.

10.3 Colour Schedule

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

10.4 Samples and Application Specification.

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

Certified date, 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.

11 VARNISH

11.1 Source

Varnish shall be procured from an approved source or manufacturer.

11.2 Quality

Varnish shall be clear, transparent and suitable for use on exterior on interior work, as specified and shall be 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 of 3 hours shall not exceed 50%

11.3 Composition

Unless otherwise specified it shall be best English Copal.

11.4 Colour

The Colour and shade shall be as approved.

11.5 Supply and Storage

The readymade varnish shall be packed in sealed tines and shall bear the batch number of production and the data of manufacture. The Varnish shall be used after one year of its manufacture.

12 DISTEMPER

12.1 Source

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

12.2 Quality

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

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.

13 TIMBER

13.1 Source

Timber shall be procured from an approved source and shall be in accordance with the requirement of B.S. 1186- Part 1.

13.2 Quality

Unless otherwise specified, timber shall mean Deodar wood for all carpentry, joinery and structure 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, rot, dots, decay, warps, twists, springs or cracks and all other defects and blemishes.

13.3 Sap Wood

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

13.4 Knots

Timber shall be free 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.

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.

13.6 Size

The round logs of timber shall not be less than 10' (3 meters) and more than 40' (12 meter) 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.

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.

13.8 Miscellaneous

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

14 WATER

14.1 Source

Water for construction shall be obtained from an approved source.

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 taste 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.

14.3 Storage

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

15 PORTLAND CEMENT

These specifications cover five types of Port- land cement, as follow:

- Type -I** For use in general concrete construction when the special properties specified for type- I, 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.

15.1 Definition

Portland cement is the product obtained by pulverizing clinker consisting essentially of hydraulic calcium silicates to which no additions have been made subsequent to calcinations, other than water and/or untreated calcium Sulphate, except that addition of other non-deleterious material may be added at the option of the manufacturer in an amount not to exceed 0.1/5.

15.2 Physical Requirement

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

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.

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

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 may be rejected if it fails to conform to any of the requirement of these specifications.

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

Cement failing of meeting 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 rejection a retest of soundness at the time of delivery of the cement.

The contractor shall supply, if required at fortnightly intervals, test Certificates with dates of such tests, showing that the cement complies with the appropriate standard. These tests shall be carried out in a 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 otherwise directed.

There shall be sufficient cement on site to ensure that each section of works 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.

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.

15.7 **Method of Sampling and Testing**

The sampling and testing of Portland cement shall be in accordance with the relevant B.S .or ASTM (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 of bags and setting under pressure the height of the stacks shall be limited to 8 bags.

15.8 **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.

15.9 **Sulphate Resisting Cement**

The sulphate resisting cement is to conform to the B.S. Specification No's: - 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-chateller Test Setting Time	10mm	(Max)
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 20 percent.

15.10 Guidelines for the Use of Sulphate Resisting Cement

To save the structures from sulphate attack and to obtain lasting immunity, the following precaution 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 impermeable calcium.
- ii. A rich should be used 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 curing at a temperature of 100 degree Centigrade and above greatly increases the resistance to sulphate attack. Sometimes to the point of immunity. Curing blow 100 degrees Centigrade does not increase the resistance and sometimes decreases it.

16 WHITE CEMENT

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 oil fired cement kiln at 3100 °F (1704 °C) brining temperature. To compensate for reduced strength in cementing power, the cement contents of mix shall be increased by 10 to 15 percent.

16.2 Characteristic/ 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. 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 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 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.

17 COLOURED CEMENT

17.1 Colored Cement

Colours are imparted to ordinary cement by mixing colouring matter to it in the form of mineral pigments. Usually 5 to 10 percent of the colouring 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 colour; cobalt gives blue colour.

For black or brown colour 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 colour but white.

18 MILD STEEL REINFORCEMENT GRADE 40 & 60

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 shall be obtained only from the approved manufacture.

18.2 Chemical Requirements

Manufactures 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 constructor to furnish manufacturer's certificate stating chemical composition of the steel Reinforcement.

18.3 Requirement of Deformations

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

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

NOMINAL DIMENSIONS IN Inches.				DEFORMATION REQUIREMENTS IN Inches			
Bar No.	WT LB/FT	DIA IN.	X-SEC AREAR IN ²	PERI-METER IN	MAX. AVERAGE SPACING	MIN.AVERAGE HT.	MAX CAP
3	0.376	0.375	0.11	1.178	0.262	0.15	0.143
4	0.668	0.500	0.20	1.571	0.350	0.020	0.191
5	1.043	0.625	0.31	1.963	0.437	0.28	0.239
6	1.502	0.750	0.44	2.356	0.525	0.038	0.286
7	2.044	0.875	0.60	2.749	0.612	0.44	0.334
8	2.670	1.000	0.79	3.142	0.700	0.050	0.383
9	3.400	1.128	1.00	3.544	0.790	0.056	0.431
10	4.303	1.270	1.27	3.990	0.889	0.064	0.487
11	5.313	1.410	1.56	4.430	0.987	0.71	0.540
14	7.650	1.693	2.25	5.320	1.185	0.085	0.648
18	13.600	2.257	4.00	7.090	1.580	0.102	0.864

18.5 Mechanical Properties of Reinforcing Bars

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

TABLE2: TENSILE IN 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

18.6 Bending Requirements

He 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 sizes of pins are prescribed in Table-3.

Bar Designation No.	Plain Diameter for " Bend Tests 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".

18.7 Permissible Variation In Mass

The permissible variation shall not exceed 5 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.

18.8 Finish

The bars shall 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 requirement of this specification.

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 minimum yield strength (characteristic strength) of 36,000 ibs/inch sq.ft.

19 THERMOPORE

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

The insulation shall conform to the following physical requirements:

Density (Average) Lbs. per Cft.	6 to 8.5
Specific Gravity (Average)	0.12
Flexural strength (Average)	
Kgm per Sq. Cm.)	3.6 to 4.3
Impact Strenght (Cm/Kgm per Sq.Cm)	03 to 0.7
Compressive Stength (Cm/Kg per Sq.Cm)	0.17 to 1.44
Deflection (Average)	0.25 to 1.44
Thermal Conductivity (Average)	
Maximum BTU at mean Temperature 10 Degree F.	0.22

20 HOLLOW FLUSH SHUTTERS (COMMERCIAL PLY) BOTH SIDES

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

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

20.1 Glue

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

21 TERMITE PROOFING MATERIAL

Termidor / biflex / Drubbing another approved shall be used as per manufactures specifications.

22 HARD BOARD

22.1 General

The hard board shall be of approved manufacture. 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 will be sufficiently thick to support the weight it has to take where being used. It shall have uniform colour and thickness and shall have an average density of 30 to 50 lbs Cft.

23 CHIP BOARD

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 2604:2640. 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 flaw, cracks, or any sort of weak spots his density shall be in the range of 50-53 lbs.sft and the modules of rupture shall be between 1,500 to 3,000 lbs/sq.in.

23.2 Samples

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

24 PLUMBING AND SAITARY FIZTURES

24.1 Water Closet

24.2 Source

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

24.3 Compositon

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

24.4 Quality

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

24.5 Colour

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

24.6 type

Type of the closet shall be Asian/ European as specified in the drawing or as approved.

24.7 Size

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

24.8 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 meter (4") i.d for connection of anti-siphonage pipe.

24.9 Foot Rest

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

25 SEAT

25.1 Source

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

25.2 Composition

Seat shall be as per manufacture's Standard.

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.

25.4 Type

Seat shall be of closed or open pattern as per manufacturer's standard

25.5 Shape

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

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.

25.7 Buffers

Seat shall be provided with rubber buffers of 25mmx 37mm (1"x1-1/2") size and 9.5 mm 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.

25.8 Colour

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

26 FLUSING CISTERN

26.1 Source

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

26.2 Composition

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

26.3 Capacity

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

26.4 Quality

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

26.5 Bracket/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 manufacture's specification.

26.6 Cover

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

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 material as approved.

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

26.8 Ball valve and Component Parts

Ball valve and its component Parts 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 rested to a pressure of 210.9 x 103 Kg/sq. meter (300 P.S.I) it shall not displace water more than half its volume when left in water.

27 WASH HAND BASINS

27.1 Source and Type

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

27.2 Composition

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

27.3 Manufacture

Each wash hand Basin shall be fired at such a temperature as to produce a satisfactory Fusing

27.4 Quality

Each wash hand Basin shall show good workmanship without dents or faults. The surface and colour shall be uniform non-corrodible, free from discoloration and imperfection.

27.5 Colour

Colour of the wash hand Basin shall be white or as approved.

27.6 Size

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

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 12.7 mm deep (2.3" long and ½" deep) it shall be so designed as to facilitate cleaning.

27.8 Soap tray or Sinking

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

27.9 Tap Holes

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

27.10 Waste Hole and Grating

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

27.11 Plug Chain 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 chain shall be of brass/chromium plated one end fixed to the plug and the other end in the chain stay hole. The position of the stay hole shall not be lower than the over flow slot.

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.

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") and shall be 300mm (12") from the back of the basin to the center of the side the side studs shall be 63mmx125mmx16mm(2-1/8" x 5" x 5/8") and centre of stud shall be 300 mm (12") from the back of the basin.

28 WASTE PIPE

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

28.1 Bottle Type Trap

All the Wash Hand basins shall be provided with a bottle type tap (chromium plated or stainless steel as approved) and connected with the basin and waste pipe.

29 TOOTH BRUSH HOLDER WITH TOOTH PASTE DISH

29.1 Source and Type

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

29.2 Composition

It shall be made of stainless steel.

29.3 Quality

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

29.4 Size

Size of the tooth brush holder shall be as approved.

30 SINK

30.1 Source and Type

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

30.2 Composition

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

30.3 Quality

Each sink shall show good workmanship without dents or faults the surface and colour should be uniform non-ferrous free from discoloration and imperfection.

30.4 Size

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

31 PILLAR COCK

31.1 General

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

32 ONE HOLE MIXER

32.1 General

- a) One hole mixer for wash Basin.
- b) One hole mixer high cock for skink.

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 of the tap shall be 13mm (1/2")

33 URINALS

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

33.1 Composition

Urinal shall be made fired at such a temperature as to produce satisfactory fused clay.

33.2 Quality

Each urinal shall show good workmanship without dents or faults. The surface and colour shall be

uniform free from discoloration and imperfection.

33.3 Colour

Colour of the urinal shall be white or as approved.

33.4 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.

33.5 Type

The type of the urinal shall be as approved.

33.6 Waste Pipe

Waste pipe shall be of 38 mm (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 (internally and externally) or chromium plated as approved.

33.7 Brackets

Brackets shall be painted iron. The brackets 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 screw.

34 TAPS AND STOP COCKS (TEE ANGLE ETC.)

34.1 Source

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

34.2 Composition

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

34.3 Quality

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

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

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.

34.5 Size

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

FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the "Agreement") made on the ____ day of _____ 200 ____ between Khyber Medical University, Peshawar (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, i-e Renovation works at KMU-IMS, Kohat (Khyber Medical University –Institute of Medical Sciences, Kohat) 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;
 - (c) The Conditions of Contract;
 - (d) Preamble alongwith summary and priced Schedule of Prices;
 - (e) List of approved manufacturers/Sources;
 - (f) The Specifications (Technical and special); and
 - (f) addendum No ____
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

Signature of the Employer

(Seal)

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

Witness:

(Name, Title and Address)

(Name, Title and Address)