

SHAHEED BB UNIVERSITY, SHERINGAL, DIR UPPER



CONSTRUCTION OF DUG/SUMP WELL NEAR GUEST HOUSE AT SHAHEED BENAZIR BHUTTO UNIVERSITY, SHERINGAL DIR UPPER KHYBER PAKHTUNKHWA



BIDDING DOCUMENTS

VOLUME-I

INVITATION FOR BIDS
INSTRUCTIONS TO BIDDERS
FORM OF BID & SCHEDULES TO BID
PREAMBLE, BILL OF QUANTITIES
CONDITIONS OF THE CONTRACT, CONTRACT DATA
SPECIFICATIONS

DIRECTOR OF WORKS/PROJECT DIRECTOR SHAHEED BENAZIR BHUTTO UNIVERSITY, SHERINGAL, DIR UPPER

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<u>Check List</u>

Preparation and Submission of Bidding Documents <u>Single Stage Two Envelop Bidding</u>

Ser	Description	Remarks
1.	Have you carefully studied and signed each page of the bidding document? کیاآپ نے بولی کے دستاویز کے تمام صفحات کو احتیاط سے پڑھ لیا ہے؟	Yes / No
2.	Are you eligible to participate in bidding as per PEC criteria> PEC Registration NoCategory CValid upto ^ كياآپ پاكتان انجنيرُ نگ كونسل كے ساتھ رجسٹر ڈ ہیں؟	Yes / No
3.	Have you visited the site, got requisite information in respect of bid, and submitted the bid for complete scope of work? کیاآپ نے یو نیور سٹی کو ویزٹ کیا ہے اور اس بولی کے متعلق تمام معلومات حاصل کئے ہیں؟ کیاآپ نے کمل کام کے لئے اپناٹینڈر دیا ہے؟	Yes / No
4.	Have you submitted alternate proposal for provision of clean, drinkable water in sufficient quantity for the campus? کیا آپ نے مبدل تجویز بھی اینے دیتا ویزات میں دی ہے جس کا مقصد صاف سقر سے پانی کی دستیابی ہو؟	Yes / No
5.	Have you submitted Qualification Documents and Technical Proposal in separate envelop as per ITB?	Yes / No
6.	Have you submitted Financial Bid in separate envelop as per ITB? کیاآپنے فاننشل بڈالگ لفانے میں ڈالی ہیں؟	Yes / No
7.	Have you put the both envelops (i-e Technical and Financial) in one envelop, sealed, stamped signed the top as per PPRA Rules, Bid Documents? کیا آپ نے مندرجہ بالادونوں لفافوں کوایک لفافے میں ڈال کراس اوپر محکمے کا پیۃ لکھ دیا ہے، جیسا کہ پیپر اکے قوانین میں ہے؟	Yes / No
8.	Have you attached Bid Security (Original) to Financial Bid and attached certificate of availability in Technical Bid as ITB?	Yes / No
9.	Do you know that your bid shall be valid for 120 days? After date of opening of bid? کیاآپ کو معلوم ہے کہ بولی کے دن کے بعد آپ کابڈایک سوبیس دن تک جائزاور محکمے کے ساتھ رہے گا؟	Yes / No
10.	Have you studied and understood method of performing works? کیاآپ نے کام کرنے کے طریقے کار کو مکمل سجھ لیاہے جواس دستاویز کے اوا خرمیں دیا گیاہے؟	Yes / No
11.	Have you properly filled Rates in the Bill of Quantities, keeping in view Preamble, Conditions of the Contract, method of performing works and knowing that items, quantities can be increased, decrease and even deleted during execution? کیاآپ نے تمام قواعد وضوابط کو مد نظر رکھتے ہوئے اپنی ہولی بناکر پیش کی ہے ؟	Yes / No
12.	Have revisited University's website on the second last day of submission of bid for updating yourself in respect of bidding, regarding amendment in bid or time extension for submission of bid? الما الما الما الما الما الما الما الم	Yes / No

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INSTRUCTIONS TO BIDDERS

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

A. **GENERAL**

IB.1 Scope of Bid & Source of Funds

1.1 Scope of Bid

- a) The Vice Chancellor, Shaheed Benazir Bhutto University, Sheringal, Dir Upper (hereinafter called "the Employer") wishes to receive Bids for the "Construction of Dug/Sump Well at Shaheed BB University Sheringal, Dir Upper".
- b) Bidders must quote for the complete scope of work. Any Bid covering partial scope of work will be rejected as non-responsive.

IB.2 Eligible Bidders

- 2.1 Bidding is open to all firms and persons meeting the following requirements:
 - a) Duly licensed by the Pakistan Engineering Council (PEC) in appropriate category.
 - b) Duly enlisted by Pak PDW/ Railways /C&W/PDA/CDA/MES/TMA/Irrigation/Public Health Engg. / KPHA/ NHA or any Engineering Department of Federal or Provincial Govt.

2.2 One Bid per Bidder

Each bidder shall submit only one bid either by himself, or as a partner in a joint venture. A bidder who submits or participates in more than one bid will be disqualified.

IB.3 Cost of Bidding

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

3.2 **Site Visit**

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

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expenses incurred as a result of such inspection.

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

B. BIDDING DOCUMENTS

IB.4 Contents of Bidding Documents

- 4.1 In addition to Invitation for Bids, the Bidding Documents are those stated below, and should be read in conjunction with any Addendum issued in accordance with Sub-Clause IB.6.1.
 - 1. Instructions to Bidders (ITB).
 - 2. Form of Bid & Schedules to Bid.
 - 3. Preamble and Bill of Quantities.

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- 4. Conditions of Contract & Contract Data.
- 5. Standard Forms.
- 6. Specifications.
- 7. Drawings.

The bidders are expected to examine carefully the contents of all the above documents. Failure to comply with the requirements of bid submission will be at the bidder's own risk.

IB.5 Clarification of Bidding Documents

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

IB.6 Amendment of Bidding Documents

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

C. PREPARATION OF BIDS

IB.7 Language of Bid

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

IB.8 Documents Comprising the Bid

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

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

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

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

(B) Financial Proposal

- a. Dully filled-in Form of Bid and Bill of Quantities along with complete set of bidding documents prescribed in sub-clause 7.1;
- b. Original Bid Security;

IB.9 Sufficiency of Bid

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

IB.10 Bid Prices, Currency of Bid and Payment

10.1 The bidder shall fill up the summary of Bill of Quantities indicating %age over the MRS rates entered in the BoQ for the rate of items for the Works to be performed under the Contract. Prices in the Bill of quantities are entered in Pakistani Rupees, keeping in view the instructions contained in the Preamble to Bill of Quantities.

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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.

IB.11 Documents Establishing Bidder's Eligibility and Qualifications

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

IB.12 Documents Establishing Works' Conformity to Bidding Documents

- 12.1 The documentary evidence of the Works' conformity to the Bidding Documents may be in the form of literature, drawings and data and the bidder shall furnish documentation as set out in Bidding Data.
- 12.2 The bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers, if any, designated by the Employer in the Technical Provisions are intended to be descriptive only and not restrictive.

IB.13 Bid Security

- 13.1 Each bidder shall furnish, as part of his bid, at the option of the bidder, a Bid Security in the amount stipulated in **Invitation for Bid** in Pak. Rupees in the form of Deposit at Call or a Bank Guarantee issued by a Scheduled Bank in Pakistan or an insurance company having alteast AA rating from PACRA/JCR in favour of the Employer valid for a period up to twenty eight (28) days beyond the bid validity date.
- 13.2 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.
- 13.3 The bid securities of unsuccessful bidders will be returned upon award of contract to the successful bidder or on the expiry of validity of Bid Security whichever is earlier.
- 13.4 The Bid Security of the successful bidder will be returned when the bidder has furnished the required Performance Security, and signed the Contract Agreement.
- 13.5 The Bid Security may be forfeited:
 - (a) if a bidder withdraws his bid during the period of bid validity; or
 - (b) if a bidder does not accept the correction of his Bid Price, pursuant to Sub-Clause 16.4 (b) hereof; or
 - (c) in the case of a successful bidder, if he fails to sign the Contract Agreement, in accordance with Sub-Clauses IB.20.2 & 20.3.

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

- 14.1 Bids shall remain valid for the period 120 days after the date of bid opening.
- 14.2 All Schedules to Bid are to be properly completed and signed.

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- 14.3 No alteration is to be made in the Form of Bid except in filling up the blanks as directed. If any alteration be made or if these instructions be not fully complied with, the bid may be rejected.
- 14.4 Each bidder shall prepare one document 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 at the address to the Employer.

14.7 Alternate Proposals by Bidder

Should any bidder consider that he can offer any advantages to the Employer by a modification to the designs, specifications, Bill of Quantities, methodology or other conditions, he may, in addition to his bid to be submitted in strict compliance with the Bidding Documents, submit any Alternate Proposal(s) containing (a) relevant design calculations; (b) technical specifications; (c) proposed construction methodology; and (d) any other relevant details / conditions, provided always that the total sum entered on the Letter of Bid shall be that which represents complete compliance with the Bidding Documents. The bidder may submit separate Bill of Quantities duly priced on MRS-2022.

D. SUBMISSION OF BID

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

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

E. BID OPENING AND EVALUATION

IB.16 Bid Opening, Clarification and Evaluation

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

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

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

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(B) Envelop -II (Financial Proposal)

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

Evaluation of bids.

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

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

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

1. Experience;

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

Sr. #	Description	Detailing	Weightage
i)	Works/Projects of similar nature and complexity completed over last 10 years.	5 marks/each project	10
ii)	Works/Projects of similar nature and complexity in hand.	5 marks /each project	10
iii)	Experience of Works related to this bid but not basic part.	5 mark/ each project	10

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iv)	Status of enlistment with Govt. Org. and other agencies.	1 mark/ each Deptt.	5
		Sub-total:	35

2. Personnel Capabilities;

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

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

3. Financial Position;

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

Ser. #	Description Detailing		Weightage
i)	Working Capital in last 3 years.	2 mark/ million	10
ii)	Registration with Income Tax Department	Y=10	10
iv)	Litigation History where decision went against the Firm.	N=10	10
v)	Blacklisting from any Agency	N=5	5
		Sub-Total:	35

4. Equipment and machinery;

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

Sr. #	Description	Marks Assigned	Explanation for Marks Obtained
1	Dumper Trucks/Dyna/ Shower/ Loader	10	Total Marks
2	Steel cutting & Bending Machine	10	
3	Form Work/ Scaffolding Pipe	10	= (Marks Obtained
4	Concrete Mixer/ Lift with Machine	10	/ 60) * 15
5	Generator Set (5 KVA)	10	
6	Vibrator/plate compactor	10	
	G. total	60 .	15

(B) Envelop -II (Financial Proposal);

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

Preliminary Examination of Bids and Determination of Responsiveness;

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

a. The documents have been properly signed,

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- b. The Bid is valid till required period,
- c. Completion period offered is within specified limits,
- d. The Bids are generally in order.

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

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

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

16.8 Evaluated Bid Price

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

- (i) Making any correction for arithmetic errors 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.

IB.17 Process to be Confidential

- 17.1 Subject to Sub-Clause IB.16.3 heretofore, no bidder shall contact Engineer/Employer on any matter relating to its Bid from the time of the Bid opening to the time the bid evaluation result is announced by the Employer. The evaluation result shall be announced at least ten (10) days prior to award of Contract. The announcement to all bidders shall be made through uploading bid evaluation report in university website.
- 17.2 Any effort by a bidder to influence Engineer/Employer in the Bid evaluation, Bid comparison or Contract Award decisions may result in the rejection of his Bid. Whereas, any bidder feeling aggrieved may lodge a written complaint to the Vice Chancellor Shaheed BB University Sheringal, Dir Upper 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.

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F. AWARD OF CONTRACT

IB.18 Post-qualification

Not used as single stage two envelops bidding shall be done.

IB.19 Award Criteria & Employer's Right

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

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.
- Formal Agreement between the Employer and the successful bidder shall be executed within seven (7) days of the receipt of Form of Contract Agreement by the successful bidder from the Employer.

IB.21 Performance Security

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

FORM OF BID (LETTER OF OFFER)

To:

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

Subject: <u>Construction Dug/Sump Well at Shaheed BB University, Sheringal, Dir Upper.</u>

1. Having examined the Bidding Documents including Instructions to Bidders, Conditions of Contract, Contract Data, Specifications, for the execution of the above-named Works, we, the

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undersigned, being a company doing business under the name of and address as mentioned below and being duly incorporated under the laws of Pakistan hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Bid Price as inserted in Summary of Estimates or such other sum as may be ascertained in accordance with the said Documents.

- 2. We understand that all the Schedules attached hereto form part of this Bid.
- 3. As security for due performance of the undertakings and obligations of this Bid, we submit herewith a Bid Security drawn in your favor or made payable to you and valid for a period of twenty eight (28) days beyond the period of validity of Bid.
- 4. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the Works comprised in the Contract within the time(s) stated in Contract Data.
- 5. We agree to abide by this Bid for the period of 120 days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- 6. Unless and until a formal Agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
- 7. We understand that you are not bound to accept the lowest or any bid you may receive.
- 8. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a bid for the Works.

Dated this	_day of, 2022
Signature	_in the capacity of
Duly authorized to sign	n bid for and on behalf of

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FORM OF PERFORMANCE SECURITY (Bank Guarantee)

		(Guarantee No Executed on _		
(Letter by the Guarantor to the Employer) Name of Guarantor (Scheduled Bank in Pakist Name of Principal (Contractor) with address: Sum of Security (express in words and figures Letter of Acceptance No	s)		Executed on _		
KNOW ALL MEN BY THESE PRESENTS, that is said Letter of Acceptance (hereinafter called a Guarantor above named, are held and firmly the penal sum of the amount stated above, for Employer, we bind ourselves, our heirs, execut by these presents.	the Documents bound unto the the payment o) and at the reque e (her f which sum well	uest of the said einafter called I and truly to be	Principal w the Employ made to th	re, the rer) in e said
THE CONDITION OF THIS OBLIGATION IS S above said Letter of Acceptance (Name of Project).					oyer's —
NOW THEREFORE, if the Principal (Contractor covenants, terms and conditions of the said D any extensions thereof that may be granted by notice is, hereby, waived and shall also well an and conditions of the Contract and of any and made, notice of which modifications to the Gotherwise to remain in full force and virtue till of Contract are fulfilled.	Pocuments duri y the Employen od truly perforn d all modification uarantor being	ng the original to the with or withouth the and fulfill all the the ons of the said D thereby waived,	erms of the saint notice to the eundertakings ocuments that then, this oblig	d Document Guarantor, v , covenants may hereaf gation to be	ts and which terms ter be void;
Our total liability under this Guarantee is limit attaching to us under this Guarantee that the validity period of this Guarantee, failing who Guarantee.	claim for payr	nent in writing s	hall be received	d by us with	in the
We, (the Guarantor), waiving all object and independently guarantee to pay to the Emwithout cavil or arguments and without requisions such demand any sum or sums up to the amount that the Principal has refused or failed to perfebe effected by the Guarantor to Employer's deprovided by the Guarantor to Employer's deprovided (Contractor) has duly performed his obligations and the Guarantor shall pay with upon first written demand from the Employed other person. IN WITNESS WHEREOF, the above bounded	aployer without airing the Emploount stated about the obligatesignated Bank be the sole and ations under the out objection are forthwith an Guarantor has	t delay upon the loyer to prove or ove, against the cions under the Carlon Num I final judge for the Contract or any sum or sums ad without any resecuted this Interpret to the executed this Interpret to prove the contract or any sum or sums and without any resecuted this Interpret to prove the executed this Interpret to prove the executed this Interpret to prove the prove t	Employer's firs to show groun Employer's was contract, for whom deciding whet has defaulted aup to the amoreference to the enstrument und	t written de ds or reaso ritten declaration payment the Prin in fulfilling ount stated as Principal control er its seal of the declaration of the payment of	mand ns for ration nt will ncipal g said above or any
date indicated above, the name and corporate duly signed by its undersigned representative				nd these pre	sents
Guarantor (Bank (Name, Title & Address)	Witness:	Corporate Secr Corporate Gua			
			Seal	1	

FORM OF CONTRACT AGREEMENT

THIS CO	ONTRACT AGREEMENT (hereinafter called th	e "Agreement") made on the day of 2022						
betwee	n(hereinafter called	the "Employer") of the one part and						
(herein	after called the "Contractor") of the other par	t.						
WHERE	EAS the Employer is desirous that certain	Works, viz should be executed by the						
Contrac	ctor and has accepted a Bid by the Contractor	for the execution and completion of such Works and the						
remedy	ring of any defects therein.							
NOW th	nis Agreement witnesseth as follows:							
1.	In this Agreement words and expressions sha	all have the same meanings as are respectively assigned						
	to them in the Conditions of Contract hereina	fter referred to.						
2.	The following documents after incorporate	ing addenda, if any except those parts relating to						
	Instructions to Bidders, shall be deemed to fo	rm and be read and construed as part of this Agreement						
	viz:							
	(a) The Letter of Acceptance;							
	(b) The completed Form of Bid alongwith	Schedules to Bid;						
	(c) Conditions of Contract & Contract Date	ca;						
	(d) Preamble and Priced Bill of Quantitie	S.						
	(e) The Specifications; and							
	(f) The Drawings							
3.	In consideration of the payments to be ma	de 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	d in all respects within the provisions of the Contract.						
4.	The Employer hereby covenants to pay the	ne Contractor, in consideration of the execution and						
	completion of the Works as per provisions of	f 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.							
	-	sed this Contract Agreement to be executed on the day,						
month	and year first before written in accordance wi	th their respective laws.						
Signatu	are of the Contactor	Signature of the Employer						
(Seal)		(Seal)						
	Sealed and Delivered in the presence of:	()						
Witness		Witness:						
(Name	(Name, Title and Address) (Name, Title and Address)							

Sign_	
Seal _	
M/S _	

FORM OF INDEMNITY BOND

FOR SECURED ADVANCE AGAINST MATERIAL BROUGHT AT SITE

This	s deed of indemnity is	issued by M/S	in f	avor of M/S	whereas	has
paid	d the secured advance	against the cost of 1	naterial throug	gh any bank to lik	e agency by any oth	ier method
by v	virtue of the terms of tl	ne contract existing	between the p	arties. The detail:	s of the material and	d their cost
for v	which secured advance	e is being sought for	the period	till consumpti	on of the material is	as under;
	1 at Rs	per	= Rs			
	2 at Rs	per	= Rs			
	3 at Rs	per	= Rs			
The	erefore this deed of inde	emnity witnesseth a	as follows;			
a.	I /we of	M/S	do hereby i	ndemnify M/s	for all the lo	sses due to
	thefts, arson, pilferag	e, loss due to flood	and inundatio	n, shortage, detei	rioration and depre	ciation etc.
	through any act of Ma	n or Allah of slum i	n the market o	f any or all the ma	terials financed or j	paid by the
	employer on our re	quest for Ofinancir	ng payment ag	ainst materials.	I /we shall	indemnify
	against any	or all claims, action	ı damages arisi	ng out of or resul	ting to the said mate	erials.
b.	I /we fur	ther declare that w	e will faithfull	y abide by the ab	ove declaration and	d solemnly
	affirm that we will no	t remove, sell, pilfe	rage any of the	materials agains	t which M/S	has
	paid us such a secure	d advance and will	not pledge the	same with any Ba	nk, Finance Corpora	ation, Firm,
	Company, Individual	or the like agency o	r create any ch	ange whereon in a	any from what so ev	er.
c.	I /we do	hereby also declar	e that in the ev	ent of my/our ir	ofringement of the o	declaration
	made abovev	vill be entitled to for	feit all such ma	iterial and also pr	oceed against me/us	s according
	to the relevant clause	pertaining to breacl	h of contract an	d further invoke t	he power of seek an	y remedies
	secured of with me/u	s or otherwise avail	lable under the	law.		
	Place;	<u>.</u>				
	Dated;					
	Contractor;					

Sign	
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M/S	

CONDITIONS OF THE CONTRACT

1. GENERAL PROVISIONS

1.1 **Definitions**

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

The Contract

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

The Persons

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

The Dates, Times and Periods

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

The Money and Payments

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

Other Definitions

- 1.1.11 "Contractor's Equipment" means all machinery, apparatus and other things required for the execution of the Works but does not include Materials or Plant intended to form part of the Works.
- 1.1.12 "Country" means the Islamic Republic of Pakistan.
- 1.1.13 "Employer's Risks" means those matters listed in Sub-Clause 6.1.
- 1.1.14 "Force Majeure" means an event or circumstance which makes performance of a Party's obligations illegal or impracticable and which is beyond that Party's reasonable control.
- 1.1.15 'Materials' means things of all kinds (other than Plant) to be supplied and incorporated in the Works by the Contractor.

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- 1.1.16 "Plant" means the machinery and apparatus intended to form or forming part of the Works.
- 1.1.17 "Site" means the places provided by the Employer where the Works are to be executed, and any other places specified in the Contract as forming part of the Site.
- 1.1.18 "Variation" means a change which is instructed by the Engineer/Employer under Sub-Clause 10.1.
- 1.1.19 'Works' means any or all the works whether Supply, Installation, Construction etc. and design (if any) to be performed by the Contractor including temporary works and any variation thereof.
- 1.1.20 "Engineer" means the person notified by the Employer to act as Engineer for the purpose of the Contract and named as such in Contract Data.

1.2 **Interpretation**

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

1.3 **Priority of Documents**

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

1.4 **Law**

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

1.5 **Communications**

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

1.6 **Statutory Obligations**

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

2. THE EMPLOYER

2.1 **Provision of Site**

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

2.2 **Permits etc.**

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

2.3 Engineer's/Employer's Instructions

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

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2.4 **Approvals**

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

3. ENGINEER'S/EMPLOYER'S REPRESENTATIVES

3.1 **Authorized Person**

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

3.2 Engineer's/Employer's Representative

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

4. THE CONTRACTOR

4.1 **General Obligations**

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

4.2 **Contractor's Representative**

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

4.3 **Subcontracting**

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

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4.4 **Performance Security**

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

5. DESIGN BY CONTRACTOR

5.1 **Contractor's Design**

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

5.2 **Responsibility for Design**

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

6. EMPLOYER'S RISKS

6.1 **The Employer's Risks**

The Employer's Risks are:-

- a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, within the Country;
- b) Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war, within the Country;
- 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;

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- e) Pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds;
- f) Use or occupation by the Employer of any part of the Works, except as may be specified in the Contract;
- g) late handing over of sites, anomalies in drawings, late delivery of designs and drawings of any part of the Works by the Employer's personnel or by others for whom the Employer is responsible;
- h) A suspension under Sub-Clause 2.3 unless it is attributable to the Contractor's failure; and
- i) Physical obstructions or physical conditions other than climatic conditions, encountered on the Site during the performance of the Works, for which the Contractor immediately notified to the Employer and accepted by the Employer.

7. TIME FOR COMPLETION

7.1 **Execution of the Works**

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

7.2 **Program**

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

7.3 **Extension of Time**

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

The Employer shall extend the Time for Completion as determined.

7.4 **Late Completion**

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

8. TAKING-OVER

8.1 **Completion**

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

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8.2 **Taking-Over Notice**

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

9. REMEDYING DEFECTS

9.1 **Remedying Defects**

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

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

9.2 **Uncovering and Testing**

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

10. VARIATIONS AND CLAIMS

10.1 **Right to Vary**

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

10.2 **Valuation of Variations**

Variations shall be valued as follows:

a) At a lump sum price agreed between the Parties, or

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

10.3 **Early Warning**

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

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

10.4. **Valuation of Claims**

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

10.5 **Variation and Claim Procedure**

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

11. CONTRACT PRICE AND PAYMENT

11.1 (a) Terms of Payments

The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other terms of the Contract, shall, subject to Clause 47, be paid by the Employer to the Contractor within 30 days after such Interim Payment Certificate has been jointly verified by Employer and Contractor, or, in the case of the Final

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Certificate referred to in Sub Clause 60.8, within 60 days after such Final Payment Certificate has been jointly verified by Employer and Contractor; Provided that the Interim Payment shall be caused in 42 days and Final Payment in 60 days in case of foreign funded project. In the event of the failure of the Employer to make payment within the times stated, the Employer shall pay to the Contractor compensation at the 28 days rate of KIBOR+2% per annum in local currency and LIBOR+1% for foreign currency, upon all sums unpaid from the date by which the same should have been paid. The provisions of this Sub-Clause are without prejudice to the Contractor's entitlement under Clause 69.

(b) Valuation of the Works

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

11.2 **Monthly Statements**

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

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

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

11.3 **Interim Payments**

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

11.4 **Retention**

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

11.5 Final Payment

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

Within sixty (60) days from the date of receipt of the verified final account from the Engineer, the Employer shall pay to the Contractor any amount due to the Contractor. While making such

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payment the Employer may, for reasons to be given to the Contractor in writing, withhold any part or parts of the verified amount.

11.6 **Currency**

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

12. DEFAULT

12.1 **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;

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- i. to the additional cost due the work done at the Risk & Cost of the Contractor (i-e previous contractor whose contract is terminated),
- ii. To a sum equivalent to twenty percent (20%) of the value of Parts of the Works not executed at the date of the termination to cover the additional cost/burden on employer.

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

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

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

13. RISKS AND RESPONSIBILITIES

13.1 Contractor's Care of the Works

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

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

13.2 Force Majeure

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

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

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

- 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.

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14. INSURANCE

14.1 **Arrangements**

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

14.2 **Default**

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

15. RESOLUTION OF DISPUTES

15.1 **Engineer's Decision**

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

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

15.2 **Notice of Dissatisfaction**

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

15.3 **Arbitration**

A dispute which has been the subject of a notice of dissatisfaction shall be finally settled as per provisions of Arbitration Act 1940 (Act No. X of 1940) and Rules made there under and any

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statutory modifications thereto. Any hearing shall be held at the place specified in the Contract Data and in the language referred to in Sub-Clause 1.5.

16. CONSTRUCTION & CHECKING AT SITE

- 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 without 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 programe for the next day and a check request book shall be maintained which shall be submitted for each activity along with supporting documents such as level sheet, bar bending schedule etc. This check request after approval by the Engineer shall be attached with monthly statement/IPA/IPC for verification of work done on site to the Engineer and to the Employer if asked.
- The measurement sheets for each item of work carried out and claimed/submitted for payment shall be provided with a column showing number of approved check request confirming the physical execution of work in presence of the Engineer's Representative.

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CONTRACT DATA

Sub-Clauses of Conditions of Contract

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

1. GENERAL PROVISIONS

1.1 Definitions

The Contract

1.1.1 Contract.

List of Contract Documents;

- (a) The Contract Agreement
- (b) The Letter of Acceptance
- (c) The completed Form of Bid
- (d) The Priced Bill of Quantities along with preamble and method of performing works
- (e) The Contract Data
- (f) The Conditions of Contract
- (g) The Drawings

1.1.2 **Specifications.**

(a) The Specifications (Technical Provisions) attached with MRS

1.1.3 Drawings.

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

The Persons

1.1.4 The Employer.

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

1.1.4 The Engineer.

T.B.N.

1.1.5 The Contractor

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

The Dates, Times and Periods

1.1.7 Commencement Date means

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

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1.1.9 **Time for Completion**

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

1.3 **Priority of Documents**

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

2. THE EMPLOYER

2.1 **Provision of Site:**

Shall be provided by the University to the Contractor.

3. ENGINEER'S/EMPLOYER REPRESENTATIVES

3.1 **Authorized Person**:

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

Director of Works

Shaheed Benazir Bhutto University, Sheringal, Dir Upper.

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

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

T.B.N

5. DESIGN BY CONTRACTOR

5.1 **Contractor's Design**

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

7.4 **Late Completion**

a. Liquidated Damages.

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

b. Rate of Progress

If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Works or any Section is at any time, in the opinion of the Engineer, too slow to comply with the Time for Completion, the Engineer shall so notify the Contractor who shall thereupon take such steps as are necessary, subject to the consent of the Engineer, to expedite progress so as to comply with the Time for Completion. The Contractor shall not be entitled to any additional payment for

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taking such steps. If, as a result of any notice given by the Engineer under this Clause, the Contractor considers that it is necessary to do any work at night or on locally recognized days of rest, he shall be entitled to seek the consent of the Engineer so to do. Provided that if any steps, taken by the Contractor in meeting his obligations under this Clause, involve the Employer in additional supervision costs, such cost shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

c. Liquidated Damages for Delay

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

d. Reduction of Liquidated Damages

If, before the Time for Completion of the whole of the Works or, if applicable, any Section, a Taking-Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after the date stated in such Taking-Over Certificate, and in the absence of Alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

9. REMEDYING DEFECTS

9.1 **Remedying Defects**

Period for Remedying Defects is six months.

10. VARIATION AND CLIAMS (Alterations, Additions and Omissions)

Delete sub-clause and substitute the text with;

a. Variations

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

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

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

b. Instructions for Variations

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

c. Valuation of Variations

All variations referred to hereinabove and any additions to the Contract Price which are required to be determined (for the purposes of this Clause referred to as "varied work"), shall be valued at the rates and prices set out in the Contract (Priced BoQ) if, in the opinion of the Engineer, the same shall be applicable. If the Contract (Priced BoQ) does not contain any such rates then the Rates of MRS/CSR 2022 with %age ± duly evaluated form the Contract Price and Engineer's Estimate. However the MRS/CSR/ does not cover the same then actual market rate adding labor charges and 10% contractor profit and 5% overhead charges (along with income tax if applicable) as per general engineering practice shall be adopted.

d. Variations Exceeding 15 per cent

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

- (a) all varied work valued under Sub-Clauses 10. a & b.
- (b) all adjustments upon measurement of the estimated quantities set out in the Bill of Quantities, excluding Provisional Sums, but not from any other cause, there have been additions to or

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deductions from the Contract Price which taken together are in excess of 15 per cent of the "Effective Contract Price" (which for the purposes of this Sub-Clause shall mean the Contract Price, excluding Provisional Sums and allowance for day works if any) then and in such event (subject to any action already taken under any other Sub-Clause of this Clause), after due consultation by the Engineer with the Employer and the Contractor, there shall be added to or deducted from the Contract Price such further sums as may be agreed between the Contractor and the Engineer or, failing agreement, determined by the Engineer having regard to the Contractor's Site and general overhead costs of the Contract. The Engineer shall notify the Contractor of any determination made under this Sub-Clause, with a copy to the Employer. Such sum shall be based only on the amount by which such additions or deductions shall be in excess of 15 per cent of the Effective Contract Price.

11. CONTRACT PRICE AND PAYMENT

11.1 (a) Terms of Payments

Substitute the text with;

The amount due to the Contractor under any 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

Work done shall be priced by adopting Priced BoQ Rates.

11.2 Monthly Statements

Payment shall be done upon completion of works successfully.

(a) The value of work executed

a. Items and Quantities of BoQ;

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

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b. Works to be measured;

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

(b) Secured advance on Materials (Not applicable)

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

- I. The materials are in accordance with the Specifications for the permanent works;
- II. Such materials have been delivered to the site and are properly stored and protected against loss or damage or deterioration to the satisfaction of Engineer but at the risk and cost of the contractor;
- III. The contractor have kept record of requirements, orders, receipt, gate pass invoices, use of materials etc. and shall be available for inspection and for submission of claims.
- IV. Ownership of such materials shall be deemed to vest in the Employer and these materials shall not be removed from the site or otherwise disposed off without written permission of the employer; and
- V. The sum payable for such materials at site shall not exceed 75% of the;
 - a. Ex-factory/ex-warehouse price of locally manufactured of produced materials, or
 - b. Market price of other materials.
- VI. The recovery of secured advance paid to the contractor shall be affected from the monthly payment on actual consumptions basis;

11.3 **Retention money**

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

11.4 payment of retention money

Shall be paid on after expiry of defect liability period.

11.6 **Currency of Payment**

Payment shall be done in Pak. Rupees.

14.1 Arrangements

Not applicable

14.2 **Default**

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15 RESOLUTION OF DISPUTES

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Place of Arbitration shall be Sheringal Dir Upper.

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PREAMBLE TO SCHEDULE OF RATES

A. **GENERAL**

- 1. The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specifications.
- 2. The quantities given in the Bill of Quantities are only estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work executed and measured by the Contractor and verified by the Engineer and valued at the rates and prices of the priced Bill of Quantities, where applicable.
- 3. The rebate or discount offered over the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract, include all costs of Contractor's plant, labour, supervision, materials, execution, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract. Furthermore all duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to deadline for submission of Bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder, or shall provide proof for tax exemption.
- 4. While quoting rate and price over BoQ, the bidder shall read the method of performing works and shall quote accordingly.
- 5. The execution of items and quantities of BoQ are subject to the approval of the Engineer as may be increased, decreased even deleted during execution, hence unit rate shall be entered vary carefully by the bidders.
- 6. Variation Order if required, due to any reason shall be valuated at the rates of Priced BoQ. In case of non-availability in the contract i-e Priced BoQ, the rates of MRS-2022 (i-e CSR KP) with %age (\pm) duly evaluated from Engineer's Estimate compared with total corrected Bid Price, shall be adopted. However if there are some Non-Schedule items, they shall be analyzed from current market rates along with addition of 15% (10% Contractor Profit and 5% overhead charges).
- 7. The bidder may offer alternate method if deemed suitable, for consideration of Engineer.
- 8. Units of measurements, symbols and abbreviations shall comply with the FPS System except Steel Reinforcement which is in MKS.

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كام كرنے كاطريقه كار

- 1. ٹھیکہ دار سب سے پہلے موجودہ الیکٹر ک ریز بیسٹیویٹی سروے (ای آرایس) جو کہ اس بولی کے دستاویزات میں ہی نتھی کر دی گئی ہے کو
 پڑھے اور اس کو زیر غور لائے ،اور اپنے ماہرین سے اس پر مشورہ کرے ،اس کے ساتھ ساتھ ، ٹھیکہ دار کاماہر یونیور سٹی کا سر سری ویزیٹ

 کرے ، (طائرانہ طور پر) اور عام وسادہ چیز وں یا آلات کو استعال کرے ، (جبیبا کہ براس کی ڈنڈیاں والا طریقہ یادو سراکوئی بھی طریقہ) تاکہ
 وہ معلوم کرے کہ مطلوبہ جگہ میں کو نبی جگہ زیادہ مناسب ہے ، (یادر ہے اس ویزٹ یا جزل سروے کی کوئی ادائیگی یونیور سٹی نہیں کرے
 گی) ،
- 2. یونیورسٹی کو بڑی ٹینکی بھرنے کیلئے ایک موٹر پہپ چلاناچا ہتاہے جو کہ 25 ہارس پاور طاقت والاہے، ہمیں ایسا کنواں چاہیئے جو کہ ہمارے اس پہپ کو بھر پور طریقے سے چلائے، اور اسی کو چلانے کیلئے یونیورسٹی نے یہ ٹھیکہ کرنے کا ادارہ کیاہے، تو ٹھیکہ داراپنے کو پہلے یقینی بنائے کہ وہ ایسا کنواں بناکر دے گا،
 - 3. اگر ٹھیکہ دار کوسو فیصدیقین ہو کہ وہ مطلوبہ جگہ میں ایسا کنوال بناسکتاتب ہی وہ اس ٹھیکہ میں شرکت کرے،
- 4. ایک تخمینہ لاگت بولی کے دستاویز کے ساتھ لگاہے، جو کہ کام کے قیمتوں /زخ کی صرف تعین کرتاہے تاکہ بولی دہندہ کو معلوم ہو کہ اس کو کون کون سی ایٹوں کو موقع پر کرنے پراس نرخ کو واضح کر سکے،
- 5. یادرہے کام مشین سے کیاجائے یامز دورہاتھ سے کریں، یاایکسکویٹر یادیگر کوئی بھی طریقہ سے کریں، لیکن مشینوں کیلئے ڈیزل یا پیٹرول وغیرہ کی کوئی علیجیدہ ادائیگی نہیں کی جائے گی، بلکہ وہ ریٹ میں شامل سمجھی جائے گی، اسی طرح کام کیلئے مسلسل موٹر چلانے کیلئے تاکہ پانی کے اندر کام ہوسکے، ان موٹروں کیلئے یاجزیٹر کا کرایہ یاان کو چلانے کیلئے تیل وغیرہ کسی بھی چیز کی ادائیگی نہیں ہوگی، بلکہ بی او کیو کے مطابق ہی ادائیگی ہوگی اور یہ کہ جتنی کھدائی ہوئی چاہئے ذیادہ ہویا کم لیکن اسی کی ادائیگی ہوگی یہ بلکل واضح امرہے،،
- 6. جس ٹھیکہ دار کو کام مل جائے تووہ کل تخمینہ لاگت کاد س فیصد پر فار منس بانڈیاسی ڈی آریا نقدر قم یونیورسٹی کو جمع کرے گاتب ہی آگے ہو گا، اور کنٹریکٹ دستخط ہوگا،
- 7. کام کے دوران سائٹ کی حفاظت اوراس کنویں میں لو گول کو گرنے سے بچاؤ کیلئے مناسب تدابیر ،اسی طرح کام والول کی حفاظت ٹھیکہ دار کی ذمہ داری ہوگی ،اس کیلئے کنویں کے گرد باڑو غیر ہ لگانا بھی ٹھیکہ دار کا کام ہوگا، جو کی علیجیدہ کوئی ادائیگی نہیں کی جائے گی ،
- 8. کام کے دوران کنویں سے دوڑاور گرد ہٹانے کیلئے پنکھاوغیر ہاوراس کے کیلئے بجلی بھی ٹھیکہ دار کی ذمہ داری ہو گی،اس کی بھی کوئی ادائیگی نہیں کی جائے گی،
- 9. کنویں کے اندر پلم کنگریٹ کی جائے گا،اوراس میں سریے سے بنے سیڑیاں کنگریٹ کے دوران ہی لاگئے جائیں گے،اسی طرح کنویں کے اوپر مضبوط حجیت بنایا جائے گا جس میں کافی مقدار میں سریااور موٹا حجیت ہوگاوہ بھی ایسا کہ اگراس کے اوپر سامان سے لداٹر ک گزرے تو

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خراش بھی نہ آئے، لیکن ایک مضبوط آرسی سی کاڈ ھکنا بھی بنایا جائے گاتا کہ اس میں بعد کوئی کام کرناہو تواسی راستے کے زریعے کنویں میں بندہ اتر سکے،

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- 11. تصيكه دار كوتب ہى ادائيگى ہو گى جب؛
- i. مطلوبه مقدار میں پانی ملنے، جو کہ 25 ہارس پاور موٹر کو کم از کم بارہ گھنٹے مسلسل چلائے،
 - ii. کنویں کے اندر پانی میں کم از کم تین گز کھدائی کی گئی ہو،
 - iii. تمام کام مکمل ہو، جبیباکه کنگریٹ وغیرہ،
- iv. کام کی پیمیل اور پانی کی مکمل فراہمی کے بعد ہی رقم کی ادائیگی کی جائے گی اور جو بھی کام ہوا ہو موقع پر اس کی ادائیگی صوبائی ایم آرایس 2022ء رائج الوقت کے نرخوں کے مطابق ہی ادائیگی کی جائے گی۔
- 12. ٹسٹنگ پہلے تو ٹھیکہ داراپنے موٹروں سے کرے گااور جباس کو یقین ہو کہ کہ مطلوبہ پانی مل گیا، تب یونیورسٹی کے موٹروں سے رہوں اس کو یقین ہو کہ کہ مطلوبہ مقدار کا پانی مل گیا ہے، ٹسٹنگ کی جائے گی، تاکہ یونیورسٹی کو یقین ہو جائے کہ واقعی مطلوبہ مقدار کا پانی مل گیا ہے،

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N//C	

Electrical Resistivity Survey Report For Ground Water Investigations

Shaheed BenazirBhutto University Sheringal Distt. Dir Upper

Syed Ansar Hussain Gillani M Sc.(Geophysics)/M Phill.(Hydrogeology)

<u>Hydro-Exploration &</u> <u>Geo-Engineering Consultants (HGC)</u> Peshawar

Ph:-	Mobile	03009598526

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ELECTRICAL RESISTIVITY SURVEY REPORT OF SHAHEED BENAZIR BHUTTO UNIVERSITY SHERINGAL DISTT. DIR UPPER

1. Purpose and Scope: -

ELECTRICAL RESISTIVITY SURVEY IN SHAHEED BENAZIR BHUTTO UNIVERSITY SHERINGAL, DISTT. DIR UPPER HAVE BEEN CARRIED OUT. THE MAIN PURPOSE OF THE ELECTRICAL SURVEY WAS TO DETERMINE THE GROUNDWATER POTENTIAL IN THE PROJECT AREA AND TO SELECT A FEASIBLE SITE FOR THE INSTALLATION OF TUBEWELL. FOR THE DETERMINATION OF GROUND WATER POTENTIAL AND SUBSURFACE DISTRIBUTION OF DIFFERENT STRATA THREE VERTICAL ELECTRICAL SOUNDING HAVE BEEN CONDUCTED.

1. LOCATION AND ACCESSIBILITY:

THE PROJECT AREA IS LOCATED IN SHERINGAL AREA. THE DETAIL OF PROJECT IS GIVEN BELOW:-

I. PROJECT NAME ... DRINKING WATER SUPPLY SCHEME

SHAHEED BENAZIR BHUTTO UNIVERSITY

SHERINGAL

DISTT. DIR UPPER

II. DONOR GOVT. OF KHYBER PAKHTUN KHAWA

III. EXECUTING AGENCY PROJECT DIRECTOR, SBBU SHERINGAL

DISTT. DIR UPPER

2. ELECTRICAL RESISTIVITY SURVEY:

The Electrical Resistivity Survey was conducted in the project area comprised of three vertical electrical soundings having Schlumberger Configuration.

On the basis of Electrical Resistivity survey the following are the suggestion/recommendations:-

M/S _____

<u>I.</u>	Vertical Electrical Soundings	No.	=	DIR – 101	
1.	Location			Near New Girls Hostel	
2.	Co-Ordinates			N 35° 16′ 09″	
				E 71° 00′ 17″	
3.	Land Owner			Govt. Property	
4.	Interpreted Drilling Depth			120±5M	
					SignSeal

5.	Interpreted Water Surface Level	12±5M
6.	Interpreted Water Bearing formation	7M
7.	Expected Discharge	1200-1500GPH
8.	Ground Water Potential	"S.Fair"

II.	Vertical Electrical Soundings No.	=	DIR – 102
1.	Location		Inside Ground(Near Hostels)
2.	Co-Ordinates		N 35° 16′ 10″
			E 71° 00′ 14″
3.	Land Owner		Govt. Property
4.	Interpreted Drilling Depth		120±5M
5.	Interpreted Water Surface Level		15±5M
6.	Interpreted Water Bearing formation		5M
7.	Expected Discharge		700-900GPH
8.	Ground Water Potential		"Poor"

I <u>II.</u>	Vertical Electrical Soundings No.	=	DIR – 103
1.	Location		Near Guest House
2.	Co-Ordinates		N 35° 16′ 23″
			E 71° 00′ 19″
3.	Land Owner		Govt. Property
4.	Interpreted Drilling Depth		120±5M
5.	Interpreted Water Surface Level		12±5M
6.	Interpreted Water Bearing formation		10M
7.	Expected Discharge		1500-2000GPH
8.	Ground Water Potential		"S.Fair"

4. Conclusions: -

According to Electrical Resistivity Survey results the subsurface lithology of the project area is mostly composed of S.Clay having Gravel/Boulders/Conglomerate/ overlying on Bedrock. The detail of each resistivity survey site is given below:-

i. **VES DIR-101:**

This resistivity survey site is located near New Girls Hostel and the result shows that from top surface to 5M depth the subsurface lithology is mostly composed of dominant layers of S.Clay having huge boulders below 5M depth to 12M depth S.Clay having Compact Gravel/Conglomerates below 12M depth to 35M depth fractured bedrock and below 35M depth compact bedrock is expected. Water surface level is expected at 12M depth . Perch water surface level is expected at 10M depth. Below water surface level about 7M water bearing formation is

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available giving A discharge of about 1200-1500GPH. The recharge to groundwater is medium, therefore, the drawdown to groundwater will be moderate. Keeping in view the electrical survey results the site is recommended for the installation of pressure pump.

ii. VES DIR-102:

This resistivity survey site is located Inside Ground (Near Hostel) and the result shows that from top surface to 5M depth the subsurface lithology is mostly composed of dominant layers of S.Clay having huge boulders below 5M depth to 10M depth S.Clay having Compact Gravel/Conglomerates below 10M depth to 30M depth fractured bedrock and below 30M depth compact bedrock is expected. Water surface level is expected at 15M depth . Perch water surface level is expected at 12M depth. Below water surface level about 5M water bearing formation is available giving A discharge of about 700-900GPH. The recharge to groundwater is medium, therefore, the drawdown to groundwater will be moderate. Keeping in view the electrical survey results the site is recommended for the installation of pressure pump .

iii. VES DIR-103:

This resistivity survey site is located near Guest House and the result shows that from top surface to 5M depth the subsurface lithology is mostly composed of dominant layers of S.Clay having huge boulders below 5M depth to 15M depth S.Clay having Compact Gravel/Conglomerates below 15M depth to 40M depth fractured bedrock and below 40M depth compact bedrock is expected. Water surface level is expected at 10M depth . Perch water surface level is expected at 8M depth. Below water surface level about 7M water bearing formation is available giving A discharge of about 1500-2000GPH. The recharge to groundwater is medium, therefore, the drawdown to groundwater will be moderate. Keeping in view the electrical survey results the site is recommended for the installation of pressure pump .

5. Recommendations:-

- Electrical resistivity survey result shows that the project area have a moderate prospects of fresh groundwater.
- Recharge to groundwater is medium.
- Drawdown to groundwater is moderate.
- Sites No. DIR-101, DIR-102 and DIR-103 are not recommended for the installation of Tubewell.
- Sites No. DIR-101, DIR-102 and DIR-103 are recommended for the installation of Pressure pump.
- Due to presence of huge boulders at the top layers upto 5-7 M the open well would be excavated upto 5-7M depth. Otherwise drilling would not be possible in this layer.,
- The site No. DIR-101 and DIR-103 are recommended for the installation of Dugwell.
- The diameter of the Open Well would be 12ft. and depth would be about 40ft.
- The Dugwell at site No. DIR-103 would provide discharge of about 6000GPD-9000GPD.

Syed Ansar Hussain Gillani (Geophysicist/Hydrogeologist) M Sc.(Geophysics) M Phill.(Hydrogeology)

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Construction of Dug Well at SBBU S. MRS It **Description** Unit Length Depth T/D Formula Qty Rate Amount No SCHEDULED ITEMS MRS-2022 or Diameter Excavate well in dry & dispose of soil within 50m in ordinary soil 4.92 4.92 $\lambda/4 \text{ xD}^2$ 21-01-a-01 100Cft 8.00 Rft 247.34 Cft 706.23 or sand: 0' (0 m) Upto 5' (1.5 m) depth 1,746.78 21-01-c-01 Excavate well in dry & dispose of soil within 50m in hard strata like 100Cft 8.00 Rft 4.92 λ/4 xD2 247.34 Cft 1,809.92 shingle and gravel: From 0' to 5' (0 to 1.500 m) depth 4,476.62 Excavate well in dry & dispose of soil within 50m in hard strata like 8.00 Rft 4.92 9.84 $\lambda/4 \text{ xD}^2$ 247.34 Cft 1,900.49 21-01-c-02 100Cft shingle and gravel: From 5.1' to 10' (1.530 m to 3.000 m) depth 4,700.64 Dry sinking of well & disposal of soil within 50m in hard Strata like 21-02-c-01 100Cft 8.00 Rft 4.92 14.76 $\lambda/4 \text{ xD}^2$ 247.34 Cft 7,202.33 shingle and gravel: From 10.1' to 15' (3.030 m to 4.500 m) depth 17,814.12 Dry sinking of well & disposal of soil within 50m in hard Strata like 4.92 $\lambda/4 \text{ xD}^2$ 21-02-c-02 100Cft 8.00 Rft 19.68 247.34 Cft 8.136.08 shingle and gravel: From 15.1'to 20' (4.530 m to 6.000 m) depth 20.123.64 Dry sinking of well & disposal of soil within 50m in hard Strata like 4.92 $\lambda/4 \text{ xD}^2$ 9.069.83 21-02-c-03 100Cft 8.00 Rft 24.60 247.34 Cft shingle and gravel: From 20.1' to 25' 6.030 m to 7.500 m) depth 22,433.16 Dry sinking of well & disposal of soil within 50m in hard Strata like 8.00 4.92 29.52 $\lambda/4 \text{ xD2}$ 247.34 Cft 21-02-c-04 100Cft 10,003.58 shingle and gravel: From 25.1' to 30' (7.530 m to 9.000 m) depth 24,742.68 Dry sinking of well & disposal of soil within 50m in hard Strata like 21-02-c-05 100Cft 8.00 4.92 34.44 $\lambda/4 \text{ xD2}$ 247.34 Cft 10,937.33 shingle and gravel: From 30.1' to 35' (9.030 m to 10.500 m) depth 27,052.20 21-02-c-06 Dry sinking of well & disposal of soil within 50m in hard Strata like 100Cft 8.00 4.92 39.36 $\lambda/4 \text{ xD2}$ 247.34 Cft 11.871.08 shingle and gravel: From 35.1' to 40' (10.530 m to 12.000 m) depth 29,361.71 Dry sinking of well & disposal of soil within 50m in hard Strata like 100Cft 8.00 4.92 44.28 $\lambda/4 \text{ xD2}$ 247.34 Cft 12,804.83 21-02-c-07 10 shingle: From 40.1' to 45' (12.030 m to 13.500 m) depth 31,671.24

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11	21-03-c-06	Wet sinking of well, in shingle, or gravel etc. for depths below spring level as per specification including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain: Above 7.5 to 9 m depth	100Cft	8.00 Rft	4.92	49.20	λ/4 xD ²	247.34 Cft	82,357.19	203,700.82
12	21-03-c-07	Wet sinking of well, in shingle, or gravel etc. for depths below spring level as per specification including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain: Above 9 m to 10.5 depth	100Cft	8.00 Rft	4.92	54.12	λ̄/4 xD²	247.34 Cft	103,424.95	255,809.45
13	21-03-c-08	Wet sinking of well, in shingle, or gravel etc. for depths below spring level as per specification including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain: Above 10.5 to 12 depth	100Cft	8.00 Rft	4.92	59.04	λ/4 xD²	247.34 Cft	133,533.47	330,279.33
14	21-03-c-09	Wet sinking of well, in shingle, or gravel etc. for depths below spring level as per specification including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain: Above 112 to 13.5depth	100Cft	8.00 Rft	1.00	60.04	λ/4 xD²	50.27 Cft	168,132.95	84,523.80
15	21-03-c-10	Wet sinking of well, in shingle, or gravel etc. for depths below spring level as per specification including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain: Above 13.5depth	100Cft	8.00 Rft	1.00	61.04	λ/4 xD²	50.27 Cft	213,250.64	107,205.36
11	03-15-a	Excavation in hard rock requiring blasting but blasting prohibited, dispose & dress within 25 m: Grade I	1000Cft					1,000.00 Cft	19,191.38	19,191.38
12	03-16-b	Rehandling of earthwork upto a lead of 25 m	1000Cft	8.00 Rft	61.04		$\lambda/4 \text{ xD}^2$	3,068.60 Cft	3,268.13	10,028.59
13	03-17	Rehandling of gravel work or excavated rock, leadupto 25m	1000Cft	3068.60			$\lambda/4 \text{ xD}^2$	3,068.60 Cft	9,337.50	28,653.08
14	03-19-a	Extra for every 15 m extra lead or part thereof for earthwork soft, ordinary, hard & very hard	1000Cft	3068.60			$\lambda/4 \text{ xD}^2$	3,068.60 Cft	158.74	487.11
15	03-19-b	Extra for every 15 m extra lead or part thereof for gravel, shingle or rock	1000Cft	3068.60			$\lambda/4 \text{ xD}^2$	3,068.60 Cft	184.88	567.32
16	03-20-a	Transportation of earth all types beyond 250 m and upto 500 m	1000Cft	3068.60			λ/4 xD ²	3,068.60 Cft	6,629.63	20,343.70

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12	06.02.5	Cement Concrete (brick/stone ballast, 1.5" to 2"/nullah shingle well	100Cft	8.00 Rft	0.75	61.04	λ/D x depth	1,150.73 Cft	21,006.22	
12	06-03-a	graded and cleaned) in foundation & plinth (Ratio 1:3:6)	TOUGIC	6.00 KIL	0.73	01.04	λ/D x deptil	1,130./3 Git	21,000.22	241,724.05
13	06-46-b	Erection and removal of Form work with Wood Surface Finshing for RCC or Plain cement Concrete in any shape - Position / Vertical	100Sft	8.00 Rft		61.04	λ/D x depth	1,534.30 Sft	5,950.13	91,292.93
14	25-09	Small iron work, such as gusset plates, knees, bends, stirrups, straps, rings etc excluding erection	Tonne	66.67	Nos	1.50		100.01 Kgs	301,368.00	301,383.07
15	06-07-a-03	RCC in roof slab, beam, column & other structural members, insitu or precast. (1:2:4)	100Cft	1	9.00	10.167	0.750	68.63 Cft	31,325.35	21,497.73
16	06-08-с	Supply & fabricate M.S. reinforcement for cement concrete (Hot rolled deformed bars Grade 40)	100kgs	68.63 Cft	х	2.000	Kgs/Cft	137.25 Kgs	23,539.41	32,308.90
	SUB TOTAL	FOR WELL (SCHEDULE ITEMS) =		<u> </u>	1				1	1,933,119.41
					Lo	cation Fa	ctor For Dir U _l	pper @ 10% =		193,311.94
	Seven (7%) reduction in cost as per notification No. SO(Dev-II)/FD/12-6/2014-15 dated April 21, 2015. =							(135,318.36)		
SUB TOTAL =									1,991,112.99	
	Add/Deduct	con Engineers Estimate								
Net Total = Rs.										

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