

**BEANT COLLEGE OF ENGINEERING & TECHNOLOGY,
GURDASPUR**

(Established by Government of Punjab)

**AGREEMENT NO. _____
NATIONAL COMPETITIVE BIDDING**

- NAME OF WORK : **Bid document:-** Providing and installing Deep Tubewell 250 mm i/d straight upto 125 mtr. (approx.) depth with 20 mtr. stainless steel strainer, with Reverse Rotary Rig, Providing, Fixing Submersible Pump Set, Changeover old & New Machinery including wire new tubewell to Pump Chamber, Providing & Fixing M.S Pipe 150mm i/d and Providing & Fixing Sluice Valve, Construction of Sluice Valve Chamber, 2 Nos Column 15ft Height including Garder Complete in all respects in **Beant College of Engineering & Technology, Gurdaspur.**
- PERIOD OF SALE OF BIDDING DOCUMENT : FROM 26-06-2015 To 27-07-2015
- CLOSING DATE & TIME FOR SALE OF BIDDING DOCUMENT : 27-07-2015 11:00 A.M.
- LAST DATE AND TIME FOR RECEIPT OF BIDS : DATE 27-07-2015 TIME 15:00 Hrs.
- TIME AND DATE OF OPENING OF BIDS : DATE 27-07-2015 TIME 16:00 Hrs.
- PRE-BIDDING MEETING** : **08-07-2015 TIME : 14:00 HRS**
- COST OF BID DOCUMENT : RS. 500/- (non-refundable) (Downloaded Bid Documents must be accompanied with a Demand Draft of Rs. 500/- in favour of Principal, BCET, Gurdaspur payable at Gurdaspur)
- PLACE OF OPENING OF BIDS : **Conference Hall at Beant College of Engineering & Technology, Gurdaspur**
- OFFICER INVITING BIDS : **Principal, Beant College of Engineering & Technology, Gurdaspur.**
-

CONTRACTOR

WITNESS

PRINCIPAL (BCET), GSP

**CONTRACT FORMS
&
CONDITIONS OF CONTRACT**

Name of Contractor.....

Name of Work : Providing and installing Deep Tubewell 250 mm i/d straight upto 125 mtr. (approx.) depth with 20 mtr. stainless steel strainer, with Reverse Rotary Rig, Providing, Fixing Submersible Pump Set, Changeover old & New Machinery including wire new tubewell to Pump Chamber, Providing & Fixing M.S Pipe 150mm i/d and Providing & Fixing Sluice Valve, Construction of Sluice Valve Chamber, 2 Nos Column 15ft Height including Garder Complete in all respects in **Beant College of Engineering & Technology (BCET), Gurdaspur.**

(Form F-I)

**ITEM RATE TENDER
AND
CONTRACT FOR WORKS**

Div. Acctt.

This agreement made this.....day of.....between.....
(hereinafter called the "Contractor") of the one part, and the Principal, Beant College of Engineering & Technology, Gurdaspur of the other part :

Whereas, the contractor has offered to execute the work for Bid document for Providing and installing Deep Tubewell 250 mm i/d straight upto 125 mtr. (approx.) depth with 20 mtr. stainless steel strainer, with Reverse Rotary Rig, Providing, Fixing Submersible Pump Set, Changeover old & New Machinery including wire new tubewell to Pump Chamber, Providing & Fixing M.S Pipe 150mm i/d and Providing & Fixing Sluice Valve, Construction of Sluice Valve Chamber, 2 Nos. Column 15ft Height including Garder Complete in all respects in Beant College of Engineering & Technology (BCET), Gurdaspur.

NOW THIS AGREEMENT WITNESSES AS FOLLOWS :-

1. In this agreement, words and expressions shall have same meaning as are respectively assigned to them as per the general conditions of contract hereinafter referred to :
2. The following documents shall be deemed to form and be construed as part of this Agreement.
 - (i) The "Notice inviting Tender" & "instructions to tenderers" as at Annexure "A:" to this agreement.
 - (ii) Item rate tender for works at Annexure B to this agreement.
 - (iii) "Conditions of contract" as at annexure 'C' to this agreement.
3. The work will be executed strictly according to specifications and drawings relating to the work as Indicated in the "Notice Inviting Tender". The schedule of items of work to be carried out will be as per "Notice Inviting Tender"
4. All correspondence and modifications of tendered offer and acceptance letter will form part of this Agreement.
5. In considerations of the payment to be made by the College to the contractor in respect of completed work, or item of work, the contractor hereby covenants with the College to execute the work in conformity in all respects with the provisions of this Agreement.
6. The College hereby covenants to pay the contractor in consideration of execution of works, the price in the manner as specified in this Agreement.

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In witness thereof the parties set their respective hands and seals on the day and year first above written.

	In the presence of NAME & ADDRESS	Signature of Contractor Address.....
1.

2.
Signed sealed & delivered by.....in the capacity		
of.....		

	In the presence of NAME & ADDRESS	
1.	Principal (BCET)
	
2.	

ANNEXURE 'A'

Beant College of Engineering & Technology, Gurdaspur. Notice Inviting Tender and Instructions to Tenderers

1. Tenders in the prescribed form No..... are hereby invited on behalf of the Principal of BCET, Gurdaspur for **Bid document** for Providing and installing Deep Tubewell 250 mm i/d straight upto 125 mtr. (approx.) depth with 20 mtr. stainless steel strainer, with Reverse Rotary Rig, Providing, Fixing Submersible Pump Set, Changeover old & New Machinery including wire new tubewell to Pump Chamber, Providing & Fixing M.S Pipe 150mm i/d and Providing & Fixing Sluice Valve, Construction of Sluice Valve Chamber, 2 Nos Column 15ft Height including Garder Complete in all respects in **Beant College of Engineering & Technology (BCET), Gurdaspur.**
2. The tender forms "along with Conditions of contract" to be filled can be obtained from Store & Purchase Section of the college w.e.f. 26.06.2015 (09:00 A.M.) to 27.07.2015 (11:00 A.M.) at a cost of Rs. 500/- (non-refundable) or can also be downloaded from the college website www.bcetgsp.ac.in , which must be accompanied with a Demand Draft of Rs. 500/- in favour of Principal, BCET, Gurdaspur payable at Gurdaspur and **must be submitted before 27-07-2015 (15:00 Hrs) at BCET, Gurdaspur.**
3. Tender documents duly filled in all respects as given by the department , must be Submitted before the tender closing time i.e before **27-07-2015 (15:00 Hrs)**. At the schedule date and time of opening, tender will be opened.
4. The time allowed for/completion of the work will be 1 month after the date of issue of Acceptance Letter to the contractor.
5. **The tender should be quoted in rates and amounts both in words and figures for all items of the work exhibited in the common schedule of items of works appended with the tender form and the respective amount and words will be converted automatically.**
6. Earnest money amounting to **RS. 40000/-** must be furnished in the form of Demand draft in favour of the Principal, BCET, Gurdaspur payable at Gurdaspur. Any bid not accompanied with requisite earnest money in acceptable form shall be rejected. Bid shall not be opened without the receipt of Earnest money.
7. The contractor, whose tender is accepted shall be required to furnish security at the rate of five percent of the cost of the work, by deductions from the running bills, (three percent of the total cost to cover liability of defects and short coming and two percent of the total cost of the winding up the contract satisfactory) The earnest money if realized from the Bank, or Treasury will be treated as part of the security deposit.
8. The offer shall remain open for Acceptance for a period of ninety days from the date of opening of the Tender. The earnest money shall be forfeited if the tenderer withdraws or modifies his offer within the validity period or fails to sign the (Formal Contract) agreement after acceptance of his offer or fails to commence the work within ten days of issue of acceptance letter. The earnest money will be forfeited and further action will be taken as per clause No.2 & 3 as per meaning of contract on page 5 of DNIT.
9. On acceptance of the tender, the contractor shall either himself remain available at site of work or arrange the availability of an accredited representative, fully authorized in writing at the site of work to receive instructions of the Principal or his representative and to ensure prompt compliance thereof.

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10. The undersigned does not bind himself to accept the lowest rate or any tender and reserves to himself, the right of accepting the whole or part of the tender and tenderer shall be bound to perform the same at the quoted rates.
11. Sales tax or any other tax on the material or the turnover shall be payable by the contractor and the institute will not entertain any claim in this respect.
12. Before filling the tender, the contractor shall visit the site and satisfy himself as to the conditions prevalent there especially regarding accessibility to the site, nature and extent of the ground, working conditions, stacking of materials, installation of Tools and Plants etc. accommodation and movement of labour, supply of water and power for satisfactory completion of the works contract. No Claim, what so ever, on such account shall be entertained by the department in any circumstances.
13. The contractor shall comply with the provisions of the Apprentices Act 1961, minimum wages Act 1948, Workmen's compensation Act 1923, contract labour (Regulation and Abolition act 1970) Payment of wages Act 1936, Employer's liability Act 1938, Maternity Benefits Act 1961 and the Industrial disputes Act 1947 as applicable and the rules and regulations issued there under from time to time. Failure to do so shall amount to breach of the contract and the Principal may, at his discretion may terminate the contract. The contractor shall also be liable for any pecuniary liability arising on account of violation by him of the provisions of the said Acts.
14. The tenderer shall bear all costs associated with the preparation and submission of his tender and the college shall in no case be liable for these costs.
15. Each tenderer shall submit only one tender, either by himself or as partner in a joint venture. A tenderer who submits or participates in more than one tender, will be disqualified.
16. Unless otherwise stated the contract shall be for the whole work as described in the "Schedule of items of works" and the drawings. The contractor shall be bound to complete the whole work as described in the schedule of items of works and the drawings, including the additional items if any, as per drawings and instructions. The certificate of completion as issued by the Principal shall be the conclusive proof of completion of work.
17. The tender shall be typed or written in indelible ink and shall be signed by the tenderer or a person duly authorized to sign on behalf of the tenderer. All pages of the tender document containing the entries and all corrections or amendments made therein shall be initiated by the person or persons signing the tender. the following documents shall accompany the tenders.
- (i) Deposit at call, fixed deposit receipt, Demand Draft as proof for earnest money.
 - (ii) Income tax clearance certificate.
 - (iii) Partnership deed or Registration Certificate of the firm or company as the case may be
 - (iv) Copy of registration of contractor of Appropriate class registration
 - (v) Power of Attorney as required under the rules for joint venture.
 - (vi) List of works executed and/or in progress with agreement cost.
 - (vii) List of Machinery and list of staff (Technical & Non Technical)
18. Incomplete tender or tenderers not fulfilling any of the conditions specified above, are liable to be rejected without assigning any reason.
19. **To qualify for award of the contract, each bidder in its name should have achieved**

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- i) Experience of having successfully completed similar works during last 7 years ending last day of month previous to the one in which tenders are invited should be either of the following: -
 - a) Three similar completed works costing not less than the amount equal to 40% of the estimated cost.
 - or
 - b) Two similar completed works costing not less than the amount equal to 50% of the estimated cost.
 - or
 - c) One similar completed work costing not less than the amount equal to 80% of the estimated cost.
- ii) Definition of “similar work” should be clearly defined.

20. Tender document can be downloaded from the project website www.bcetgsp.ac.in.

21. Additional Conditions :

- i) Time period allowed for completion of works in one month.
- ii) If contractor fails to start the work within 7 days from the date of allotment letter.
reserve the right to impose penalty or withdraw the work and propose action for debarring in future tendering of both decision of Principal shall be binding.
- iii) The bidders who are not enlisted with the Principal, Beant College of Engineering & Technology, Gurdaspur but have executed similar works as defined in the eligibility criteria are eligible for bidding.

ITEM RATE TENDER FOR WORKS: ANNEXURE - B

I/ We hereby offer to execute for the BCET ,Gurdaspur , the work, specified in such memorandum as per the rate entered in the schedule referred to in para 5 of the notice inviting tender and annexed herewith and in accordance in all respects with the specifications, design, drawings and instructions in writing referred to in para 5 and in clause 13 of the "Conditions of Contract" in all other respect in accordance with such conditions so far as applicable.

Memorandum

(a) General Description **Bid document** for Providing and installing Deep Tubewell 250 mm i/d straight upto 125 mtr. depth with 20 mtr. stainless steel strainer, with Reverse Rotary Rig, Providing, Fixing Submersible Pump Set, Changeover old & New Machinery including wire new tubewell to Pump Chamber, Providing & Fixing M.S Pipe 150mm i/d and Providing & Fixing Sluice Valve, Construction of Sluice Valve Chamber, 2 Nos Column 15ft Height including Garder Complete in all respects in **Beant College of Engineering & Technology (BCET), Gurdaspur.**

- (b) Estimated cost **Rs.** _____
- (c) Earnest money Rs. 40000/-
- (d) Performance Guarantee Rs. 5% of the amount of contract
- (e) Percentage amount if Rs. (Income Tax)
any, to be deducted

(f) VAT Rs. (4%)

(g) Time allowed for Completion
from the date of issue of Acceptance
letter to the Contractor : **1 month** i.e (date)

Should this offer be accepted in whole or in part, I/we hereby agree to abide by and fulfill all the terms & provision of the said conditions of contract annexed hereto and all the terms & provisions contained in the detailed "Notice Inviting Tender" and/or in default thereto forfeit and pay to College, the sum of money mentioned in the said conditions. A sum of _____ is hereby forwarded in the shape of draft No.....dated..... drawn in favour of Principal, Beant College of Engineering & Technology, Gurdaspur as earnest money. I/We agree that the full value of Earnest money will be forfeited without prejudice to any other right or remedies to the College I/We (i) withdraw or modify my/our offer during the period of validity or (ii) fail to sign the contract agreement after acceptance of the offer or (iii) fail to commence the work within ten days of the issue of acceptance of my/our offer, otherwise the said Earnest money shall be retained by him towards security deposit against Clause (d) of the above memorandum.

Dated the day of	Signature of contractor
Witness	Address.....
Address.....	Telephone.....
Occupation.....	

The above offer is hereby accepted by me on behalf of the College.

Signature

Dated the..... day of..... (Designation)

**CONDITIONS OF CONTRACT
ANNEXURE - C**

Definitions:-

1. The "Contract" means the document forming the tendered offer and acceptance thereof constituting a binding contract, between the Principal BCET Gurdaspur and the contractor. The tender documents including the conditions, the drawings, design, the specifications supplemented with instructions issued from time to time by the Principal shall be binding on the parties in the stated order of precedence. All these documents taken together with the tendered offer and its acceptance shall be deemed to form the contract and shall be complementary to one another.
2. The "**Common Schedule of Rates**" shall mean printed documents containing rates of different items of works pertaining to different Branch.
3. "Completed Works" shall mean, the work completed in all respects as per laid down specification drawings, approved N.I.T. and to entire satisfaction of Principal.
4. The "Contractor" shall mean the individual or firm or company whether incorporated or not undertaking the work and shall include the legal personal representative or the persons comprising such firm or company whose tendered offer has been accepted.
5. The "Completion date" is the date when the Principal certifies that the work can be put to use, after receipt of an intimation from the contractor regarding its completion.
6. "Communication" between parties are the written hand signed letters, notice, reminders, memoranda and instruction record in the instructions book or books kept at site.
7. "Days & months" are calendar days and calendar months.
8. The "Site" shall mean the land or other place on, into or through which work is to be executed under the contract or any adjacent land, path or street which may be allowed to be used for purpose of carrying out the contract.
9. "Schedule of material" shall mean the list of materials which are to be issued from the Deptt. Store to the contractor for genuine use on the work as per Annexure- E.
10. The "Start date" is the date when contract came into existence upon the issue of "letter of acceptance" by the Principal.
11. "Schedule of items of work" shall mean the items of work to be executed at site of work pertaining to work allotted to the contractor.
12. The "Works or work" shall, unless the contract otherwise require, mean what the contractor is required to execute and hand over to the college.

Note :- In interpreting these "conditions of contract" singular means plural, male means female and vice versa.

CLAUSES OF CONTRACT

Clause - 1 Performance Guarantee and Security:

- (i) The contractor, society whose tender is to be accepted shall furnish:-
- a) A bank Guarantee of Schedule Bank in the prescribed format (specimen Form attached) in favor of the Principal, BCET, Gurdaspur for an amount of 5% of the amount of contract valid **upto one year beyond the date of completion of contract work** to cover the amount of liquidation damages and/or the compensation of the breach of contract. **The bank guarantee is to be furnished on or before signing the contract agreement (valid for a period for 13 months) between the contractor and the Principal, BCET, Gurdaspur in the presence of the Dean (P&D) acting as Adjudicator for the contract.**
- (ii) 100% of the performance guarantee will be refunded after one year of the completion of work as certified by the Dean (P & D) with respect to satisfactory removal of all defects, imperfections, shortcomings and taking remedial measures, that may be necessary and after recording of final measurements of work done, and after satisfactory winding up of the contract as provided in clause 6A to the entire satisfaction of Estate Office and for which the certificate of the Principal would be conclusive.

Clause - 2 COMPENSATION FOR DELAY

The time allowed for carrying out the work shall be the essence of the contract and shall be strictly observed. It shall be reckoned from the date on which the order to commence the work is given to the contractor who shall ensure all due diligence to achieve progress of work not less than indicate below :

- (1) On lapse of 25% contractual time : 10,000/-
- (2) On lapse of 50% contractual time : 50,000/-
- (3) On lapse of 75% contractual time : 100,000/-
- (4) On lapse of full contractual time: 200,000/-

In case of default, the contractor shall, notwithstanding issuance of prior notice in this regard, pay prospectively as liquidated damages, an amount up to 1% of the amount of contract or such lesser amount that the Principal may levy, for every week that the work remains un-commenced after 10 days of the issue of acceptance letter or the minimum progress of work stated above is not achieved or the work remains unfinished after the completion date. In case of continued default or shortfall in progress, the Principal may go on enhancing the levy of liquidated damages prospectively, each time limited to 1% of the total estimated amount of work per week of further default subject to maximum limit of five percent of the amount of the contract. The Principal BCET Gurdaspur on the representation of contractor and after hearing both parties i.e. Dean (P&D) acting as Adjudicator and contractor, may reduce the amount liquidated damages and his decision in writing shall be final.

Clause - 3 BREACH OF CONTRACT-LEVY OF DAMAGES

The Principal may, without prejudice to other right and remedies, under the provisions of the contract or otherwise after issuing a notice, in writing and getting the final bill prepared absolutely determine the contract after levying compensation for damages of five percent of amount of the contract. If the Contractor, commits breach of contract under any clause of the contractor or in any of the following cases :-
cases :-

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Clause - 5**EXTENSION OF TIME**

If the contractor shall desire an extension of the time for completion of the work on the ground of his having been unavoidably hindered in its execution or any other ground, he shall apply in writing to the Principal (with corresponding time extension in performance Bank Guarantee) within thirty days of the date of hindrance (but before the expiry of time limit) on account of which he desires, such extension as aforesaid and the **Principal** shall, if in his opinion (which shall be reasonable grounds to be shown) therefore authorize such extension of time, as may in opinion be necessary or proper. The Principal shall be considered valid-if the contractor fails to apply for extension as aforesaid and the work is not completed within the time limit, the contract shall be determined absolutely after action under clause 2 and 3 above.

Clause-6**COMPLETION CERTIFICATE**

Within ten days of the completion of work, the contractor shall give notice of such completion to the Principal & within 30 days of the receipt of such notice, the Principal shall inspect the work and if there is not work shall furnish the contractor with a certificate of completion, otherwise a provisional certificate of completion indicating the defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates shall the work be issued. However no certificate provisional or otherwise shall be issued. not shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed. all scaffolding surplus materials, rubbish and all huts and sanitary arrangements set up for his labour on the site and cleaned off the dirt from all wood-work doors and windows, walls, floor or other parts of the building, in upon of about which the work is to be comply with the requirement of this clause as to the removal of scaffolding, surplus material and rubbish, all huts and sanitary arrangements and cleaning off as aforesaid before the date fixed for the completion of work, the Principal may at the expense of the contractors get cleared off such first as aforesaid and contractor shall forthwith pay fine amount of expenses so incurred and shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale proceed thereof.

Clause - 6 A**WINDING UP OF CONTRACT**

On completion of work, the contractor shall hand over the same to the Principal or his representative free from all defects shortcomings or imperfections. He shall clear the site of all temporary works, pits, godowns, offices, sanitary, scaffoldings, debris, waste materials, and installation. He shall also furnish the following documents duly signed by him or his authorized representatives:

- (i) Completion of the work as finally constructed.
- (ii) Variation statement showing the altered items. if any, against those provided in the original Drawings.
- (iii) Original site instruction book.
- (iv) Original registers for various quality control tests as specified.

Clause - 7 PAYMENTS ON INTERMEDIATE CERTIFICATES REGARDED AS ADVANCES.

No payment shall be made for a work estimated to cost less than Rupees twenty thousand, till after the whole of the work shall have been completed and a certificate of completion given. But in the case of works estimated to cost more than Rupees twenty thousand the contractor shall on submitting a bill thereof be entitled to receive a monthly payment proportionate to the part there of the time limit than executed to the satisfaction of the Principal whose certificate of the sum payable shall be final and conclusive against the contractor, But all such intermediate payments shall be regarded as payments by

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way of advance against the final payment only and not as payments for work actually done and completed : and shall not preclude the requiring of bad, unsound, imperfect or unskilled work to be removed and taken away and reconstructed or re-erected or be considered as an admission of the performance of the contract or any part thereof in any respect of the occurring of any claim, not shall it conclude, determine or affect in anyway the powers of the Principal under these conditions or any of them as to the final settlement of the accounts or otherwise or in any other way vary or effect the contract, The final bills shall be submitted by the contractor within one month of the date fixed for completion, of the work, otherwise the certificate of the Principal as regards measurements and the total amount payable for the work shall be final and binding.

Clause - 8

BILL TO BE SUBMITTED MONTHLY

A bill shall be submitted by the contractor on or before the tenth day or any other date fixed by the Principal accompanied by the following documents :-

- (i) Measurements and quantities of items of work done since last bill.
- (ii) Up to date statement of materials received, from the stores showing the recoveries Made upto last bill in question both in terms of quantity and value.
- (iii) Copies of quality control tests in specified format covering the work done since last bill.
- (iv) Copies of instruction recorded in the site instruction book containing the instruction and compliance made thereof, covering the work done since last bill.

A bill which is not accompanied with the above documents shall not be entertained.

The Principal will get the bill verified, if possible, within 30 days from its presentation and the contractor shall be required to sign the corrections made if any in token of its acceptance, before releasing or adjusting the payable amount.

If the contractor does not submit the bill within time limit or delay its submission or acceptance of corrections after verifications the entire responsibility for non-payment or delay in payment shall rest with him.

Clause - 9

BILL TO BE ON PRINTED FORM/ EXTRA ITEMS

The contractor shall submit all bills on the printed forms to be had on application from the office of the Principal and the rates in the bills shall always be entered at the rates specified in the tender or in the case of any extra work ordered, in pursuance of these conditions and not mentioned or provided for in the tender, at the rates herein after providing for such work.

The contractor shall deliver in the office of Principal on or before the 10th day of every month during the continuance of the work covered by this contract, a return showing details of any work to be charged of extra with value, based upon the rates and prices mentioned in the contract or in the common schedule of rates, applicable to the location of work on the date of tender. The contractor shall include in such return, particulars of all demands of whatsoever kind and whosoever arising,

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which at the date hereof he has in respect of or in any manner arising out of execution of work. The contractor shall be deemed to have waived off all claims not included in such return and will have no right to enforce any such claim so included, whatsoever be the circumstances.

Clause-10 STORES SUPPLIED BY GOVERNMENT: DELETED

Clause - 10 A SECURED ADVANCE : DELETED

Clause - 10 B MOBILIZATION ADVANCE : DELETED

Clause-11 WORK TO BE EXECUTED IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, ORDER ETC.

The contractor shall execute the whole and every part of the work in the most substantial and workman like manner both as regard materials and labour and otherwise in every respect in strict accordance with the Punjab PWD specifications latest Edition. The contractor shall also conform exactly fully and faithfully to the designs, drawings and instructions in writing relating to the work signed by the Principal and lodged in his office and to which the contractor shall be entitled to have access during the office hours or on the site of work. The contract shall be furnished free of charge one copy of all such drawings and such specifications as are not included in the printed Punjab PWD specifications. He shall if he so requires, be entitled at his own expenses to make or cause to be made copies of the drawings, designs, specifications and instructions as aforesaid.

For ensuring the requisite quality of construction, the material used in work shall be subject to quality control tests for materials and workmanship tests as laid down in Punjab PWD Specifications as amended from time to time or the relevant standard laid down by the Bureau of Indian standards Hand Book of quality control for Construction of Roads and Runway IRC latest Edition of instructions issued under the orders of the Chief Engineer, Punjab PWD (B&R) by the Principal and or in conjunction with the quality control of Punjab PWD (B&R) W/S & Sanitation/Irrigation Deptt. The Contractors shall provide all help and assistance in proceeding with required tests.

Clause-11-A REMOVAL OF EMPLOYEES / WORKMEN

The Principal shall have full power at all times to object to the employment of any workmen foreman or otherwise on the work by contractor and if the contractor shall receive notice in writing from the Principal requiring the removal of any such person from the work the contractor shall comply with the order forthwith. No such Workmen/foremen or other employees, after his removal from the works by order of the Principal shall be re-employed or reinstated on the work by the contractor at any time except with the previous approval in writing of the Principal. The contractor shall not be entitled to demand the reason from the Principal for requiring the removal of any such workman/foreman or any other employee.

Clause-12 ALTERATION IN SPECIFICATIONS AND DESIGNS

The Principal shall have power to make any alterations omission from, additions to or substitutions for the original specifications, drawings, designs and instructions that may appear to be necessary or advisable during the progress of work and the contractor shall be bound to carry out the work in accordance with any instructions which may be given to him in writing, signed by the Principal. Such alterations/additions or substitutions shall not invalidate the contract and any altered additional or substituted work shall be carried out by the contractor on the same conditions in all respect on which he agreed to do the main work and at the same rates as are specified in tender for the main work. The time of completion of the work shall be extended in the proportion that the altered, additional or substituted works bears to the original contract work and the certificate to the Principal

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shall be conclusive as to such proportion. The rates for such additional, altered or substituted work shall be determined in accordance with the following provisions in respective order :-

(i) if the rates for the additional, altered or substituted work are specified in the contract for the work, the contractor is bound to carry out the additional altered or substituted work at the same rates as are specified in the contract of work.

(ii) If the rates for the additional, altered or substituted work are not specifically provided in the work, the rates will be derived from the rates for a similar class of work as are specified in the contract for the work.

(ii) If the rates cannot be determined as provided in (i) and (ii) above then such work shall be paid at the rates entered in common schedule of the rates minus plus the percentage rate at which the bid has been accepted.

(iv) If the rates for the altered add or substituted work cannot be determined in the manner specified in clauses (i) (ii) (iii) above, then the contractor shall within 7 days of the date of his receipt of the order to carry out the work inform the Principal of the rate or rates which he intends to charge for such class of work supported by analysis of the rates in support of rates/claimed. The Principal shall determine the rate or rates on the basis of prevalent market rates and the contractor shall accept these accordingly.

However the Principal by notice in writing, will be at liberty to cancel the order given to the contractor to carry out such work and to carry out in such manner as he may consider advisable, provided always that if the contractor shall have commenced work or incurred any expenditure in regard thereto before the rates shall have so determined then in such case he shall be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of the determination of the rate as aforesaid according to such rates as shall be fixed by the Principal. In the event of dispute, the decision of the Principal of the college shall be final.

Clause - 13 NO COMPENSATION FOR ALTERATION IN OR RESTRICTION IN WORKS

If at any time, after the commencement of the work the Government shall for any reason whatsoever not require the whole or part thereof as specified in the contract to be carried out, the Principal shall give notice in writing of the fact to the contractor, who shall have no claim to any payment of compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full, but which he did not derive in consequence of the full amount of the work not having been carried out. neither shall he have any claim for compensation by reason of any alteration having been made in the original specifications, drawings, designs and instructions, which shall involve any curtailment of the work originally contemplated.

Clause- 14 ACTION AND COMPENSATION PAYABLE IN CASE OF BAD WORK

If it shall appear to the Principal, or his subordinate in-charge of the work that any work has been executed with unsound imperfect, unskillful workmanship or with materials of any inferior description or that any articles or materials provided by the contractor for the execution of work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the contractor shall on demand in writing by the Principal specifying the work, materials or articles complained of, notwithstanding that the same have been inadvertently passed, certified and paid for forthwith rectify or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be remove the materials or articles so specified and provide other proper and suitable materials or articles at his own proper charge and cost. In the event of his failing to do so, with a period to be specified by the Principal in his demand aforesaid, the contractor shall liable to pay compensation at the rate to do so shall continue and in the case of such failure, the Principal may rectify or remove the re-execute the work or remove and replace with others, the materials or articles complained of as the case may be at the risk and expense in all respects of the contractor.

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Clause-15**WORKS TO BE OPEN TO INSPECTION**

All works under or in course of execution or executed in pursuance of the contractor shall at all times be open to the inspection and supervision of the Engineer/Dean P & D and the contractor shall at all time during the usual working hours and at all other times at which reasonable notice of the intention of the Principal or his senior/subordinate to visit the works shall have been given to the contractor, either himself be present to receive order and instructions or have a responsible agent, duly accredited in writing, present for that purpose. Orders given to a Contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.

Clause-16 NOTICE TO BE GIVEN BEFORE WORK IS COVERED UP

The contractor shall give not less than 10 days notice in writing to the Principal of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof may be taken before the same is so covered up or placed beyond the reach of measurement and shall not cover up or place beyond the reach of measurement any work with the consent in writing of the Principal or his subordinate in charge of the work and if any work shall be covered up or placed beyond the reach of measurement, without such notice having been given or consent obtained, the same shall be uncovered at contractor's expense or in default thereof no payment or allowance shall be made for such work or of the material with which the same was executed.

Clause - 17 LIABILITIES FOR DAMAGE AND IMPERFECTION FOR THREE MONTHS AFTER CERTIFICATE

If the contractor or his workmen shall break, deface, injure or destroy any part of a building in which he may be working or any building, road force enclosure or green grass land, water pipes, cables drains, electric or telephone posts or wires, trees or cultivated ground contiguous to the premises on which the work or any part of it is being executed or if any damage shall happen to the work, while in progress for any cause whatsoever or any defect, imperfection or other faults appear in the work within three months after a certificate final or other of its completion shall have been given by the Principal the contractor shall make the same good at his own expenses or in default, the Principal may cause, the same to be made good by other workmen and deduct the expenses incurred both labour and Material (for which the certificate of the Principal shall be final) from any sums that may due or at any. Thereafter may become due to the contractor from his security deposit.

Clause - 18 CONTRACTOR TO SUPPLY MATERIALS, PLANTS, SCAFFOLDINGS.

The contractor shall arrange and supply at his own cost all materials (except such specific materials as may be issued from the stores of the Principal) plant tools appliances implements, ladders cordage tackle, scaffoldings, water and power supply and temporary works requisite or proper for effective execution of the work. Whether original, altered or substituted and whether included in the specifications of other documents forming part of the contract or referred to on these conditions or not all which may be necessary for the purpose of satisfying or complying with the requirements of the Principal as to any matter which under these conditions he is entitled to be satisfied or which he is entitled to require together with the carriage thereof to and from means and materials necessary for the purpose of setting out works on counting, weighing and assistance in the measurements or examination at any time or from any amount due to the contractor under the contract or from his security deposit. The contractor shall also provide necessary fencing and light required to protect the public from accident and shall be bound to bear the expenses of defense of every suit, action or other proceeding at law that may be brought by any person for injury sustained owing to neglect of the above precautions to any such person or which may, with the consent of the contractor be paid to compromise any claim by any such person.

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The contractor shall comply with all the provisions of minimum wages act 1948, Workman's Compensation Act 1963, Contract labour (Regulations and abolition) Act 1970 and the rules framed there under the payment of wages Act 1936 Employees liability Act 1938, Maternity Benefits Act 1961, the apprentices Act 1961 and rules framed there under and the Industrial Disputes Act 1947. He shall also make satisfactory arrangement for labour huts, protection of health and sanitary arrangement for the workmen employed on the work.

In every case in which by virtue of provisions of the Contract Labour (Regulation and Abolition) Act 1970 and of the contract labour Rules, Government is obliged to pay and amount of wages to a workman employed by the contractor in execution of the works or to incur any expenditure in providing welfare and health amenities required to be provided under the above said act and the rules the P.W.D. contractor's labour Regulations or under the rules framed by the Government from, time to time for the protection of health and sanitary arrangement for workers employed by PWD contractor, the Government will recover from the contractor, the amount of wages so paid or the expenditure so incurred under without prejudice to the rights of the under section 20 Sub-Section (2) and section 21 sub-section (4) of the Contract Labour (Regulation and Abolition) Act 1970.

Government, shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or any sum due by Government to the contractor whether under this contract or otherwise. Government shall not be bound to contest any claim made against it under section 20 sub section (1) and section 21. Sub section (4) of the Act except on the written request of the contractor and upon his giving to the Government full security for all cost which the Government might become liable in contesting such claim.

Clause-20 CONTRACTOR LIABLE FOR PAYMENT OF COMPENSATION TO INJURED WORKMAN OR IN CASE OF DEATH

In every case in which by virtue of the provision of the section 12, Sub-section (1) of the workman's condition Act 1922, the Government is obliged to pay compensation to a workman employed by the contractor in execution of work, the college will recover from the contractor the amount of compensation so paid and without prejudice to the rights of Government under section 12, sub-section (ii) of the said Act, The college shall be at liberty to recover such amount of any part thereof by deducting it from the security deposit or form any sums due by the college to the contractor whether under this contract or otherwise. College shall not be bound to contest any claim made against it under section 12, Sub-section (1) of the Act except on the written request of the contractor and upon his giving to college. full security for all costs for which the college might become liable in consequence of contesting such claim.

Clause - 21 WORK NOT TO SUB - LET

The contractor shall not assign or sub-let without the written approval of the Principal employment of labour on piece rate basis shall not, however, be deemed sub-letting . If the contractor shall assign or sublet his contract or attempts to do so without the approval as aforesaid or become insolvent or commence any on solvency proceedings or make any composition with his creditors or attempt to do so if any bribe, gratuity, gift, loan, perquisite, reward of advantage, pecuniary or otherwise shall either directly or indirectly be given promised or offered advantage, pecuniary or otherwise shall either directly or indirectly (be given promised or offered advantage, pecuniary or otherwise, shall either directly or indirectly (be given promised or offered by the contractor or any of his servants or agents to any public officer or person in the employ of the Government in way relating to his office or employment or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Principal may absolutely thereupon terminate the contract as specified in clause 3 and in the event the said course being adopted, the consequences specified in the said clause 3 shall ensure.

on receipt of the decision of the Principal as aforesaid with all due diligence, whether any of the parties requires arbitration as hereinafter provided or not.

- iii) If the Principal has conveyed his decision to the contractor and no claim for arbitration has been filed by the contractor within a period of sixty days from the receipt of the letter communicating the decision, the said decision shall be final and binding upon the contractor and will not be a subject matter of arbitration at all.
- iv) If the Principal fails to convey his decision within a period of sixty days after being requested as aforesaid the contractor may within further ten days of the expiry of first ten days from the date on which the said request was made by the contractor refer the dispute for arbitration as hereinafter provided.
- iv) All disputes or differences in respect of which the decision is not final and conclusive shall at the request of either party made in a communication sent through registered A.D. post be referred to the sole arbitration of the Principal of the College concerned in the Principal, Beant College of Engineering & Technology, Gurdaspur acting as such at the time of reference unless debarred from acting as an Arbitrator by an order of the Punjab Government in which event, the Principal shall, appoint any other technical officer not below the rank of Principal to act as an arbitrator on receipt of a request from either party.
- vi) The Principal of work shall have the authority to change the arbitrator on an application by either the contractor or the Principal requesting change of arbitrator giving reason thereof either before the start of the arbitration proceedings or during the course of such proceedings. The arbitration proceeding would stand suspended as soon as an application for change of Arbitration is filed before the Principal and a notice therefore given by the applicant to the Arbitrator. The Principal after hearing both the parties may pass a speaking order rejecting the application or accepting to change the Arbitrator simultaneously, appointing a technical officer not below the rank of a Principal as Arbitrator. The new Arbitrator so appointed may enter upon the reference afresh or he may continue the hearing from the point these were suspended before the previous Arbitrator.
- vii) The reference to the Arbitrator shall be made by the claimant party within one hundred twenty days from the date of dispute of claim arises during the execution of work. If the claim pertains to rates or recoveries introduced in the final bill, the reference to Arbitrator shall be made within six calendar months from the date a registered notice is sent to the contractor to the effect that his final bill is ready by the Principal (whose decision in this respect shall be binding) whichever is earlier.
- viii) It shall be an essential term of this contract that in order to avoid frivolous claims the party invoking arbitration shall specify the disputes based on facts and calculation stating the amount claimed under each claim and shall furnish a "deposit-at-all" for ten percent of the amount claimed on schedule bank in the name of the Arbitrator, by his official designation who shall keep the amount in deposit till the announcement of the award. In the event of an award in favour of the claimant, the deposit shall be refunded to him in proportion to the amount awarded with respect to the amount claimed and the balance, if any shall be forfeited and paid to the other party.
- ix) The Provision of the Indian Arbitration Act 1940 or any other statutory enactment there under or modification thereof and for the time being in force shall apply to the arbitration proceedings under this clause.

- ix) The Arbitrator shall separately give his award against each claim raised by either party giving reason for award. Any lump sum award shall not be legally enforceable.
- xi) The independent claims of the party other than the one seeking arbitrator as also the counter claims of any party shall be entertained by the Arbitrator.
- xii) The venue of arbitration shall be such place or places as may be fixed by the Arbitrator in his sole discretion. The work under the contract shall continue during the arbitration proceedings.
- xiii) The stamp fee due on the award shall be payable by the party as desired by the Arbitrator and in the event of such party's default, the stamp fee shall be recoverable from any other sum due to such party under this or any other contract.
- (xiv) Neither party shall be entitled to bring a claim for arbitration, if it is not filed as per the time period already specified or within six months of the following :-
 - a) Of the date of completion of the work as certified by the Engineer
 - b) Of the date of abandonment of the work or breach of contract under any of its clauses, or
 - c) Of its non-commencement or non resumption of work within 10 days of written notice for commencement or resumption as applicable, or
 - d) Of the cancellation, termination or withdrawal of work from the contractor in whole or in part and/or revision or foreclosure of the contract, or
 - e) Of receiving an intimation from the Principal that the final payment due or recovery from the contractor had been determined, for the purpose of payment/adjustment whichever is the latest.
 - f) if the matter is not referred to arbitration within the period prescribed above, all the rights and claims of either party under the contract shall be deemed to have been forfeited and absolutely barred by time for arbitration and even for civil litigation.
- (xv) No question relating to this contract shall be brought before any civil court without first invoking and completing the arbitration proceedings, if the issue is covered by the scope of arbitration under this contract. The pending of arbitration proceedings shall not disentitle the Engineer to terminate the contract and to make alternate arrangement for completion of the works.
- (xvi) The arbitrator shall be deemed to have entered on the reference on the day, he issues notices to the parties fixing the first date of hearing. The arbitrator may, from time to time, with the consent of the parties enhance the initial time for making and publishing the award.
- (xvii) The expiry of the contractual time limit, whether originally fixed or extended, shall not invalidate the provisions of this clause.

- Clause -- 26 (a) STORAGE OF CEMENT AND RECORD OF CONSUMPTION: - DELETED**
- (b) VARIATION IN CONSUMPTION OF MATERIALS: - DELETED
- (c) DETERIORATION / PILFERAGE OF MATERIALS: - DELETED

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(c) DOOR AND WINDOW FITTINGS: - DELETED

Clause - 27 LUM SUM IN ESTIMATE

When the estimate on which a bid is made including lump sum in respect of parts of the work the contractor shall be entitled to payment in respect of parts of the work involved at the same rates as are payable under this contract such items. if the part of the work in question is not, in the opinion of the Principal capable of measurement, the Engineer may at his discretion pay the lump sum amount entered in the estimate and the certificate in writing of the Principal shall be final and conclusive against the contractor with regard to any sum or sums payable to him under provision of this clause.

Clause - 28 SPECIFICATION: Deleted

Clause-28A (a) CONCRETE WORK

All the concrete work shall have to be done with mechanical mixer unless permitted otherwise by the Principal. In all R.C.C. work shall be compacted with a mechanical vibrator driven by petrol/diesel or electricity. In all R.C.C. work and plain cement concrete of 1:3:6 (M-10) and richer mixes. only Ghaggar sand or Pathankot sand having a fineness modulus between 2.5 to 3.5 shall be used Test samples shall be taken during the execution of work as per stipulations of the Bureau of Indian Standards. The compressive strength of test samples shall meet the requirements of relevant standards laid down by the B.I.S. The contractor shall set up a field testing laboratory with necessary equipment and appoint suitable staff for carrying out the test at his cost.

(b) CURING OF CEMENT WORK

The contractor shall ensure proper curing of all work involving use of cement strictly as per stipulation of the Punjab P.W.D. specifications. Since proper curing during the critical period has a direct bearing on the strength and safety of cement work, the Principal shall, in the case of any default on the part of the contractor, take prompt action to arrange adequate curing at the cost of the contractor without issuing any prior notice in this respect, to avoid lapse of critical period of curing. The certificate of the Principal would be final and binding in this respect and the cost incurred shall be recovered from the contractor.

(c) PITS AT SITE PROHIBITED

No pits shall be dug by the contractor at or near the site of work for taking out earth for use in the work, In case of default, the pits so dug shall be got filled by the department at the cost of the contractor, charging additional amount of fourteen percent towards departmental charges.

(d) CO-ORDINATION WITH OTHER AGENCIES

The contractor shall maintain close-co-ordination and afford necessary facilities to other agencies executing other works like Electrification, Horticulture, Water Supply, Sewerage and external services etc. No claim for additional payment on this account shall be entertained.

Clause - 29 (a) STATUTORY LEVIES

The rates as offered and accepted in this contract are inclusive of all taxes and statutory levies such as income Tax, Octroi/terminal tax, Sales tax/turn-over tax, royalty contribution under

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Employee's State-Insurance and local taxes payable under there respective statutes (ESI contribution etc.)

(b) INCOME TAX

Income tax, shall be deducted at source as per provision of the Income tax Act and a certificate of such deduction made in each financial year shall be furnished to the contractor by the disbursing officer.

(c) SALES AND OTHER TAXES: DELETED

(d) LOCAL LAWS AND LEVIES

The contractor shall comply with the proper bye laws and legal orders of the local body or public authority under the jurisdiction of which the work is executed and pay all fees and charges for which he may be liable. Nothing extra shall be payable on this account.

(e) DAILY PAYMENT IN EMERGENCY

In case of emergency, the contractor shall be required to pay his labour every day and in case of default, the requisite payment shall be made by the Government and the amount shall be recovered from the contractor.

Clause -- 30

VARIATION IN PRICE

To compensate for the general rise or fall in prices of labour and material (excluding the materials supplied at fixed rates by the department in accordance with clause 10) the contractor's payment shall be adjusted for such increase or decrease as per provision detailed below subject to the condition that compensation for escalation in price shall be available only for work done during the stipulated period of the contract including such period for which the contract's validity extended under the provision of clause 5 of the contract without any action under clause 2 and also subject to the condition that no such compensation shall be payable for which the stipulated period of completion is six months or less.

The amount certified in each payment certificate shall be adjusted by applying the respective price adjustment factor to the net amount due for payment of material issued at fixed rates exhibited the "Notice inviting Tender" as under:

$$P = 0.35 + 0.6 \times I_m / I_o$$

Here P is the adjustment factor for the portion of the contract price.

I_m is the official whole-sale price index published by the Ministry of Economic affairs at the end of the calendar month prior to preparation of the bill:

I_o , is the official whole sale price index published by the Ministry of Economic affairs at the end of the calendar month previous to the one in which the bids comprising the contract were received.

If the value of the index is changed or amended after it has been used in calculation fro a particular payment, a correction shall be applied and an adjustment made in the next payment certificate. The index value is deemed to take into account of all variation in prices. The contractor

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shall furnish documentary evidence of the wholesale price index from time to time to facilitate calculation for variation in prices.

Clause-30-A

No escalation is to be paid for the work done in first 6 months irrespective of the time period specified. Escalation is to be paid after 6 months.

Clause - 30- B

Last date of tender for the purpose of escalation will be reckoned as the date on which final financial bid is submitted or effect of equalized conditions is submitted.

Clause -31 (a) TECHNICAL STAFF

The contractor shall employ the following construction staff on whole time basis during execution of work and shall submit names and attendance certificate on the 10th of each calendar month.

- (i) One graduate Engineer having relevant experience of not less than three years.
- (ii) One graduate Engineer or qualified diploma holder having relevant experience of not less than three years.

The technical staff shall be available at site at all times.

In case the contractor fails to employ the above minimum technical staff or fails to submit the names and attendances of such staff, recovery shall be made from his bills at the rate of twice the average pay of the corresponding staff working with the Public Works Deptt.

Clause - 31 (b) CONSULTANTS FOR QUALITY CONTROL : DELETED

(c) PERFORMANCE TEST

The contractor shall give a satisfactory performance test of the entire installations as per standard specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for this test.

Clause - 32 ACTS OF GOD

No claim whatsoever shall be entertained for any loss or damage caused by rain, floods or any other natural causes or other acts of God.

Clause - 33 JURISDICTION

The jurisdiction of Civil Court for matters under dispute shall be on the basis of location of the office of the Principal.

Clause - 34

The terms and conditions of the Agreement have been explained to me/us and I/we certify that I/We clearly understand the same

ANNEXURE – 1

List of essential equipment and machinery to be arranged by the Contractor, insufficient quantities, free of cost.....

(a) For construction

- | | | | |
|----|----------------------------------|-------|------|
| 1. | Steel shuttering | _____ | sqm. |
| 2. | Concrete mixer with hoppers | _____ | Nos. |
| 3. | Concrete Vibrators | _____ | Nos. |
| 4. | Pump sets | _____ | Nos. |
| 5. | G.I. pipe line with specials | _____ | Mtr. |
| 6. | Flexible pipe line | _____ | Mtr. |
| 7. | Theodolite | _____ | Nos. |
| 8. | Dumpy level with leveling staves | _____ | Nos. |
| 9. | Weigh batcher | _____ | sqm. |

(b) For field laboratory

- | | | | |
|----|--|-------|-------|
| 1. | Compression testing machine | _____ | Nos. |
| 2. | Concrete cube moulds
150 x 250 x 150 mm | _____ | Nos. |
| 3. | Slump cones | _____ | Nos.. |
| 4. | Graduated cylinder | _____ | Nos. |
| 5. | Set sieves for coarse aggregate
(40, 20, 10 & 4.75 mm) | _____ | Set. |
| 6. | Set of sieves for fine aggregate
(10, 4.75, 2.36, 1.8mm &) 600, 300,
150 micron. | _____ | Set. |
| 7. | Weighing scale (Pan Type) with weights | _____ | Nos. |
| 8. | Latest relevant B.I.S. codes | _____ | Nos. |

SPECIMEN FORM FOR PERFORMANCE BANK GUARANTEE

To,

Name of

Employer.....

address of

Employer.....

WHEREAS (Name and Address of

contractor)

(hereinafter called 'the contractor') has undertaken, in Pursuance of contract No.....

dated..... to execute (Name of contract and Brief description of works).....

.....called 'the contract.

AND WHEREAS it has been stipulated by you in the said contract that the contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the contract.

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee :

NOW THEREFORE we hereby affirm that we are Guarantor and responsible to you, on behalf of the Contractor, up to a total amount of Guarantee..... (in

words) we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of amount of Guarantee as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before presenting us with the demand.

We further agree that no change or addition to or other modifications of the terms of the contract or of the works to be performed there under or any of the contract documents which may be made between you and the contractor shall in and may release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee is valid unit the date.....months after the issuing of the maintenance certificate.

SIGNATURE AND SEAL OF THE GUARANTOR.....

Name of Bank.....

Address.....

Date.....

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**ANNEXURE -II
CEMENT STEEL REGISTER**

Particulars of Receipt of

Date	Qty. Recd	Source of receipt with main store permit/Gate pass No.	Progressive Total	Date	Qty. Recd	Item Work	Qty. return at the end of day	Actual issued	Daily Balance	ME's signature	Signature of Contractor/ representative	Checked Dean (P&D).
1	2	3	4	5	6	7	8	9	10	11	12	13

ME - Maintenance Engineer

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ANNEXURE - D
ITEM NO. 5

(Para 27.4 of P.W.D. Specification 1963)

On the completion of any work whether executed on through rates, labour rates or departmental labour. the consumption statement shall be prepared for such materials as have been issued by Public Works Department. In order to determine the excess or short consumption of materials, the actual quantities issued to the work shall be compared with the theoretical worked out quantities on the basis of consumption factor given in chapter 27. of Common Schedule of rates. The consumption of materials for different items will normally, confirm to the quantities given in that chapter. However, if there is any excess or short consumption of materials, the following procedure should be adopted unless otherwise specified.

(a) For Excess consumption of material.

No action shall be taken if the actual consumption does not exceed the theoretical consumption beyond the percentage detailed below:-

- | | | |
|-------|--|----------------------------------|
| (i) | For works costing up to Rs. 2 Lacs | 5% of total theoretical quantity |
| (ii) | For works costing up to Rs. 2 lacs to 5 lacs | 4% - do |
| (iii) | For works costing more than Rs. 5 lacs | 3% -do- |

This variation will not be taken as matter of routine and will have to be properly justified in each case by the Principal. If the actual consumption exceeds the theoretical consumption by more than the permissible limits given above, recovery shall be made for the excessive consumption of material beyond the permissible limits detailed above at penal rate provided in the contract from the contractors and disciplinary action may be taken against the departmental officials, as the case may be where the excess consumption in the opinion of Executive Engineer is substantially high, he shall bring such case to the notice of Superintending Engineer for the further action whose decision in all such cases will be final.

(b) For short consumption of materials:

where the actual consumption of materials is short by percentage detailed below or less, no action shall be taken when the work is executed on the rates or departmentally.

- | | | |
|------|---|----------------------------------|
| (i) | For works costing up to Rs. 2 lacs | 5% of total theoretical quantity |
| (ii) | For works costing from Rs. 2 lacs to 5 lacs | 4% - do - |

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(iii) For works costing more than Rs. 5 lacs 3% - do -

This variation will not be taken as matter of routine and will have to be properly justified in each case by the Engineer-in-charge, where the work is done on through rate basis, the recovery of costs of materials, thus saved shall be made from the contractor at the market rate.

When the consumption of material is short by more than the permissible percentage detailed above and the work is being done on through rate basis, the rates of the items shall be reduced or where it is not possible to determine the exact item on which short material has been used the cost of the material shall be recovered from the contractor at issue rate up to permissible limits at penal rates as provided in the contract.

When the work is done departmentally or on labour rate and the consumption is short by more than the permissible percentage details above the Engineer shall investigate of the cause of such short consumption and shall bring to the notice of the Principal all such cases, for such action against defaulting Government officials and contractors as he may deem fit.

The decision of the Principal in this matter shall be final. It shall also be determined whether the stability of structure is affected adversely by short consumption of material and in case where it felt that it is likely to be so the work shall be rejected. The decision of the Principal in this regard shall be final.

- (a) For major projects involving weigh switching actual variation will be ascertained and fixed by the project authorities.
- (b) The cost of work shall be considered as on C.S.R. (common scheduled of rates) with latest ceiling premium.

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ANNEXURE 'E'
Schedule of Materials

Schedule showing (approximately) materials as supplied and arranged by the contractor (as entered in the Central store & Purchase Section of BCET, Gurdaspur).

Particulars	materials as supplied and arranged by the contractor	Place of Delivery
		Beant College of Engineering & Technology, Gurdaspur.
Material will be arranged by the contractor.		

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SECTION 1: SPECIFICATIONS

INDEX

SN	DESCRIPTION	ANNEXURE
1)	Tubewell	ANNEXURE-A
2)	PUMPING SET (SUBERSIBLE)	ANNEXURE-B
3)	GENRAL SPECIFICATION FOR CIVIL WORKS, PIPES, VALVES, SPECIALS, MATERIAL ETC.	ANNEUXRE-C

(REFERENCE TO VARIOUS RELEVANT CODES OF PRACTICE AND PUNJAB PWD BOOK OF SPECIFICATIONS)

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ANNEXURE-A

TUBEWELL

WITH

Reverse Rotary RIG

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**SPECIFICATIONS FOR INSTALATION OF TUBEWELL WITH
REVERSE ROTARY RIG**

SPECIFICATIONS:

1. The installation of Tube-well shall confirm to IS 2800-1979 (Part I & II) with latest amendments.
2. Specifications of Housing Pipe, Stainless steel cage type wire wound screen specials and gravel etc.
 - a) M.S. Housing Pipes shall conform to IS Specification No. 4270-2001 or latest. The make shall be engraved on the pipe.
 - b) Unless otherwise specified Stainless steel cage type wire wound screen should confirm to IS 8110-2000.

M.S.PIPES

- a) **250 mm Pipe:**
250 mm nominal i/d bore mild steel Electric Resistant welded pipes ; wall thickness 8mm. Both ends of the pipes shall be threaded with 88.90 mm length of threaded portion on each end. The threads shall be 'V type and 8 threads per inch. The pipe shall be capable of withstanding Hydraulic test pressure of 7 Mpa.

GENERAL CONDITIONS APPLICABLE TO ALL SIZES.

1. The length of the pipe should be 4 to 7 meters.
- 2.1 The grade of steel to be used shall be of Fe 415. the pipe shall be manufactured from steel which when analyzed in accordance with methods specified in IS 228-1959 or latest, shall not show more than 0.06% phosphorus and 0.06% sulphur.
- 2.2 The pipes shall be painted with black bitumen paint.
- 2.3 The pipe shall be circular truly straight.

**STAINLESS STEEL CAGE TYPE WIRE WOUND SCREEN
(AS PER ISI SPECIFICATION NO. 8110-2000 WITH LATEST EDITION)**

It shall be ERW stainless steel cage type wire bound screen as per IS: 8110-2000 or latest and material specifications as per ISI type 304-Grade, S.S. 304. Screen will be of continuous trapezoidal wire spirally wound fabricated cage. The wrapping wire having a V shaped wedge type profile wire with flat surface on the outside a reducing expanding slots on the inside of various dimensions, resistance welded to a cylindrical body made of number of longitudinal high tensile support rods to provide smooth unrestricted bore which are in turn welded into cylindrical ring couplings body made of number of longitudinal high tensile support rods to provide smooth unrestricted bore which are in turn welded into cylindrical ring couplings at either end.

1. Ring will be 200 mm in length with 8 tpi (threads per inch).
2. Screen will have evenly distributed slot openings.
3. Open area of the screen will be designed so that the entrance velocity is less than 0.03 m/sec at design discharge/the rated discharge whichever is less.
4. Slot will be smooth with clean edges.
5. Wedge shaped inwardly widening slots will be of non-clogging type.
6. Thickness of screen with slot size 0.75 mm or 1.0 mm shall be as per table given below:

Sr. No.	N.B. of the S.S screen in mm	Depth of T/well in m.	Thickness in mm
1	150	Up to 200	5.00
2	150	201 to 350	6.30
3	200	Upto 200	6.30
4	200	201 to 400	8.00

The lowering assembly shall be approved by the Principal on recommendation of Engineer concerned which in turn shall be based upon the recommendation of qualified experienced and reputed Geologist/Hydrologist along with likely safe ultimate yield of the Tubewell. The reputed Geologist/Hydrologist shall be engaged by the contractor for all matters of installation from start of drilling to the end of development. The consultant shall base his recommendation on proper analysis and documents such as strata chart, Sieve analysis chart and electric logging. He shall give his recommendations for the slot size of the screen against each strata tapped, gravel size of the packing and thickness of the strainers at various locations and the thickness & depth of impervious clay seal below ground level and the length of housing pipe keeping in view the existing spring level, expected fall in spring level for the full life of Tubewell i.e. 15 years, expected draw down and the adequate submergence depth etc. The contractor will not lower the assembly until & unless the size of screen and the design of the Assembly is approved by the Principal. In case he lowers the assembly without the approval of Principal the same will not be payable. No Tubewell assembly shall be lowered at night. The lowering of the Tubewell must start at early morning i.e. not later than 10 AM in the presence of Engineer or his representative, to complete the same during day time.

Note: Where ever Screen or any other material is supplied by the Department, the contractor shall also be fully responsible for loading, unloading and its safe carriage to site. Any damage to the screen during transportation or its handling shall be borne by the contractor. The agency should quote his labour rates including its transportation, loading, unloading and lowering in the bore well complete in all respects. All the accessories and T & P required if any should be included in these rates. Nothing extra will be paid by the department what so ever.

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3.1 a) Reducer (N/A)

.....mm N.B.M.S. Housing Pipes are to be connected through properly designed reducer withmm N.B.M.S. Blind pipes. Both the joints are to be screwed type and to be provided with suitable threaded socket.

b) M.S. centering Guide

Suitable M.S. Centering Guides fabricated out of M.S. flat 32 mm x 6mm thick are to be provided in the Tubewell after every 10 to 12 m interval from bottom upwards till housing. The diameter of centering guides should be 50mm- 75 mm less than the bore hole diameter. Centering guides should also be provided at the starting & finishing point of screen for securing the position of the well as well as for proper gravel packing all around the screen area.

c) Gravel

The gravel shall consist of hard well rounded particles reasonably uniform in diameter and its size shall be determined by the contractor after carrying out the sieve analysis of the sand in water bearing strata. (Drawing of gravel pit attached).

4. DEVELOPMENT OF TUBEWELL

The Tubewell shall be developed for discharge with the help of the Air Compressor of the capacity corresponding to the depth of suitable size as per the table below. It should be continued until the stabilization of sand and gravel pack takes place.

Sr.No.	Depth of T/well in m	Capacity of Air Compressor to be used.
1	Upto 180	300 cfm at 250 PSI
2.	180 to 400	550 cfm at 600 PSI

Finally the development of the T/well by over pumping should be done with suitable capacity pump set as expected ultimate discharge from the Tubewell. In the end 4-5 surges (Sudden start and sudden off when the water just start coming out from the Tubewell. Finally the discharge shall be totally free from sand, after 20 minutes of starting the pump, otherwise the Tubewell shall be redeveloped. In case the Tubewell is still not sand free the pump may throttled till the discharge is total sand free after 20 minutes of starting the pump. The turbidity and hardness of the discharge shall be as specified in the IS 10500; 1983 / CPHEEO.

Note: Engineer will satisfy himself regarding the proper rating of CFM & PSI of the compressor before it is applied at site.

5. VERTICALITY ALIGNMENT

For verticality and alignment, the requirement as laid down in clause 4 of IS 2800. 1979 part –II will be ensured.

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6. FINAL TEST

- a) After the development is by over pumping and surging is complete the, the well shall be tested for its performance, i.e. yield characteristics and efficiency. This shall be achieved by conducting a step draw down test – determining draw down at the end of the hour by pumping at 5 to 8 different rates of discharge near the rated discharge. Preferably, the test should be conducted in a single day and the time of running of Tubewell for each discharge shall be same say 1 - 2 hour. The data from the test can be used to determine the relative proportion of laminar and turbulent flow occurring, true efficiency and rated discharge of the well and working out the suitable parameter for the pump.
- b) The performa attached at annexure-B is to be completed by the driller after the Tubewell has been completed.
- c) In case of any quantity of cement, steel, screen or any other controlled/ un-controlled, commodity issued to the contractor by the Engineer for use, directly in the aforesaid work or manufacture or material required in connection thereof, which is not utilized for the work for which it is issued and is otherwise disposed off by him or spoilt or lost or allowed to get deteriorated or used in excess of quantity actually required to be used as per specification herein stipulated or these fixed by the Engineer, the cost of such quantity of that material shall without prejudice to other rights and remedies available to the Govt. be recoverable from the contractor at double the stock issue rates at which it is able to be supplied to the contractor or at double the stock issue rates for quantity of material issued free of cost.

The DWSS reserve the right to abandon a particular Tubewell due to lack of sufficient water bearing strata and the contractor will be paid at the rate quoted by the firm for Test Bore. If the T/well is to be abandoned due to caving or negligence of the contractor, nothing will be paid to the contractor. The decision of the EIC will be final and binding on the contractor.

The Tubewell should be handed over to the DWSS in the complete shape. The housing pipe should be closed by a well cap for the period between the completion of the Tubewell and the installation of the pump set. The cap should be of such a design that it is easily removable causing no damage to the housing pipe.

The method of drilling i.e. REVERSE ROTARY. Method shall be taken by the concerned Principal based upon the technical data such as type of strata, depth of boring etc.

The following information should be furnished by the drilling agency to the GPWSC/DWSS on completion of the Tube well:-

- A Strata Chart of the borehole indicating the different type of soil met with at different depth.
- B Samples of strata collected & neatly packed; correctly marked in sample bags kept in wooden sample box.
- C Chart of the actual pipe assembly lowered, indicating the size of pipes depth ranges where SS screen has been used depth and diameter of housing pipe, from the top of the housing pipe and the diameter and depth of borehole.
- D Hours of developing by Air Compressor and Pumping set duly certified by authorized official of the GPWSC/ DWSS

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- E Results of development and its draw down test on the performance of the Tubewell to be recorded.
- F Results of mechanical (sieves) analysis of samples of aquifer material where ever applicable.
- G Recommendation on the safe pumping yield pump set and specification for suitable pump set.
- H Vertically test results to be recorded.

Sr. No.	<u>Brief Description</u>	Relevant Code reference (with latest amendment)		Remarks
		Indian Standards (IS)	Pb. PWD Book of specification Chapter No.	
1	2	3	4	5
1.	M.S. Pipe	4270-2001 OR LATEST		JINDAL / TATA or equivalent make
2.	Stainless steel wire cage strainer	8110-2000 OR LATEST		JOHNSON make
3.	Construction of Tubewell	2800-1979 (Part – I & II) OR LATEST		-
4.	Development of Tubewell	2800-1979 (Part – I) OR LATEST		-

TERMS AND CONDITIONS

1. All measurements will be taken from the ground level where the bore is drilled.
2. The rates quoted must include octroi, terminal tax, sales tax and all taxes applicable. The rates must include carriage of all the material, boring equipments. T & P and other consumables.
3. The rates must include cutting, threading, assembling of pipe etc.
4. Nothing extra will be payable for temporarily suspension of work on any ground.
5. The work shall be carried out by the contractor strictly in accordance with ISI specification subject to the note at the end of this chapter.
6. The digging of pits for storage of water and the water required for drilling the Tubewell will be arranged by the contractor/ firm at its own cost and nothing is payable on this account.
7. After installation & development of the t/well the water works site shall be restored to the original condition i.e. free of pits & heaps of earth.
8. All the material shall be ISI Marked unless otherwise the make some other better make has been approved in these specifications.

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**APPENDIX-A
(Clause 4.3)
VERTICALITY TEST REPORT**

Name of work
 Pump Serial No.....
 Conducted by
 In the presence at.....
 Date.....

I.D of wellmm
 O.D. of disc.....mm
 Disc correctionmm
 Point of suspension in above top of well
 static water Levelmm
 Depth of well housingmm

Depth in m. below top of tube-well	Reading from arbitrary datum		Deviation from vertical at top of tube-well				Calculated deviation from vertical at respective depth				Calculated deviation from vertical at respective depth adding Disc correction				Resultant deviation Remarks & its direction
	X	Y	N	S	E	W	N	S	E	W	N	S	E	W	
0			0	0	0	0	0	0	0	0	0	0	0	0	0

Signature of Customer

Signature of Tester.....

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APPENDIX-B

(Clause 7.2)

INFORMATION TO BE FURNISHED BY TESTING AGENCY TO OWNER ON COMPLETION OF THE TESTING OF TUBEWELL.

1. Agency conducting the tests
 2. Location of the Tubewell;/.....
 3. Date of starting.....
 4. Date of completion.....
 5. Total depth of Tubewell.....
 6. Depth of water level.....
Method adopted.....
 7. Result of verticality and alignment test.....
 8. Draw down test (for each step pumping, 5 – 8 steps): Time of pumping test
Speed rev/ minDiv.....Period of running (1-2 hrs but same for all steps).....
 9. Rated discharge in LPM (as per the analysis of reputed geologist/consultant (copy of report to be attached)
 10. Depression head of the production well.....
 11. Recommendation with regard to a suitable pump (as per the analysis of all data available by the reputed geologist/consultant (copy of report to be attached)
 12. Further details appended:
Chemical and biological analysis of Tubewell test
 13. Remarks
- Owners.....
Tester.....

NOTE: The PWD specification book, relevant IS/ISO codes/ any other reference in works relevant to the various material and workmanship etc. shall be read apart from this schedule provide. However, wherever the provisions in this schedule are in variance with any provisions of the above mentioned specification book/ relevant IS/ISO codes/ any other reference, the specification of this schedule shall be followed.

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APPENDIX-C

Bid document for Providing and installing Deep Tubewell 250 mm i/d straight upto 125 mtr. (approx.) depth with 20 mtr. stainless steel strainer, with Reverse Rotary Rig Beant College of Engineering & Technology, Gurdaspur

Sr. No	Description	Dia of bore	M.S Housing Pipe N.B.	M.S. Blind Pipe N.B.	Stainless steel cage type wire would screen	M.S. Reducing Socket.
1.	Providing and installing Deep Tubewell 250 mm i/d straight upto 125 mtr.(approx.) depth with 20 mtr. stainless steel strainer, with Reverse Rotary Rig.	650mm	250mm	250m + bail plug	250mm	
			0 m	101+4 =105 Mtr.	20.00Mtr.	

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ANNEXURE-B

PUMPING SET

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ANNEXURE -'B'

SPECIFICATIONS OF SUBMERSIBLE PUMPING SET.

Electric driven Submersible pumping set for pumping clear water conforming to IS 8034-2002 with latest amendment/ relevant ISO Standard, capable of delivering **1100 LPM** against a head of **60 m** at duty point. It should also be capable of operating at various other specific operating conditions as described in the following paragraphs:

The submersible pumping set should conform to performance tests as per IS 8034-1989 with latest amendment. The unit will consist of a submersible pump and a submersible motor with shafts connected by a sleeve and operates beneath the surface of water. Maintenance-free pump set should be suspended vertically from rising main. The pumps will be multistage with radial or mixed flow impellers. Between pump and motor there will be suction casing. A non return valve should be fitted to the pump discharge. Submersible motor should be water filled, water lubricated squirrel cage type. The axial thrust generated by the pump is absorbed by thrust bearing fitted at the bottom of the motor. The diaphragm below the thrust bearing should be provided to absorb the over pressure which will result by thermal expansion of water filled or when the temperature of the winding rises, this will save the burning/jamming of motor pump set thus increasing the life and saving money to the department. Radial seal shall be provided to avoid mixing well water with the fill water. The pump should be fitted dynamically balance enclosed type impeller. Each impeller shall be balanced dynamically to grade of G 6.3 (6.3mm/s). The pump shaft shall be guided by bearing provided in each stage bowl & in the suction gland discharge casing. The surface finish of shaft or of the protecting sleeves should be 0.75 micron Ra Max. The inlet passage of the suction casing shall be stream lined to avoid eddies. The suction case shall be fitted with a strainer of corrosion resistant material. Suitable sand guard shall be provided just above the suction case bearing to prevent the entry of foreign material into suction case. The pump should be provided with the non return valve above the pump discharge case with standard flanged connection. The individual casting part or pump as a whole in assembled condition should be able to withstand a hydrostatic pressure of 1.5 time maximum discharge pressure. The gaskets & seals used shall conform to I.S. 5120-1968 or latest. The cable clamp of adequate size be supplied for fixing submersible cables to the rising main pipes.

The pump shall be directly coupled to a submersible motor. The submersible motor shall be squirrel cage induction motor conforming to IS 9283-1979 or latest. It shall be capable of delivering rated output with.

- a) The terminal voltage differing from rated voltage of 415V by +6% and -15%**
- b) The frequency differing from its rated value of 50 Hz by not more than $\pm 3\%$**
- c) Any combination of (a) and (b)**

Both pump and motor shall run at 2900 RPM at rated frequency and Voltage. Insulation for winding wire should be 'F'. The water lubricated thrust bearing should be of adequate size to withstand the weight of all rotating parts as well as the imposed hydraulic thrust. The motor shall be protected by means of cable glands, rubber seals etc. from ingress of bore well water, sand and other foreign material. The motor shall be provided with breathing attachment like bellows, diaphragm etc. to compensate the volumetric variation due to change in the temperature. The motor shall be made of corrosion resisting material or suitable materials to resist corrosion under normal conditions. The rotor shall be provided with shaft protecting sleeves having a surface finish of 0.75 micron Ra Max. The starter shall be star delta. The class of insulation shall be F. The submersible

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cable shall conform to I.S. 694 (Part-III)-1964 or latest. The flanged column pipe shall conform Table 2 I.S. 1239 (Part-I)- 1979 or latest (Medium Class) Table-2.

The efficiency of submersible pump shall be guaranteed to specified point of rating only i.e. duty point & may not be guaranteed to cover the performance of the pump under condition varying there from nor for a sustained performance for any period of time. The pump discharge may be guaranteed for the range of head between – 25 & + 10% of the rated head when the rated head is 30 meters or above. If the rated head is below 30 meters the limits of operation shall be from – 25% to 25% or ± 3 meters whichever is less. **The H.P. of motor shall be minimum 15% in the excess of maximum HP required under all heads of working.** Performance guarantees shall be based on laboratory tests corrected for field performance, so as to ensure that rated current of the motor does not exceed 1.5 times the motor HP at Standard voltage i.e. 415 V.

The flanged column pipe shall conform table 2 of IS 1239 (Part-1)- 1979 or latest (medium class). *Another CI NRV shall be provided on the column pipe after pressure gauge and water flow meter and before it joins the delivery pipe.* The NRV shall be as per relevant IS standards.

The pump shall be at least 2m below the maximum expected drawdown at operating discharge level to compensate for drawdown and change in water table as the same will go down after continuous running of the same.

MATERIAL OF CONSTRUCTION FOR VARIOUS COMPONENTS OF PUMPSETS

Sr. No.	Component	Material	Specifications
1.	Bearing Sleeve (As per IS: 8034-1989)	Stainless Steel or Cr Steel or Bronze	12 % Chromium Steel Grade 04 Cr 13,12 Cr or X20 Cr 13 of ISI 1570 (Part-5) 1985 or latest or AISI 410 grade as per ASTM A 276 or Bronze Grade LTB3, 4 or 5 of IS 318-1981 or latest.
2	Suction Casing	C.I.	FG 200 of IS : 210
3.	Stage Casing	C.I.	FG 200 of IS : 210
4.	Sand Guard	Bronze	LTB2 of IS : 318
5.	Casing wear ring	Bronze	LTB2,3, 4or 5 of IS 5 318-1981 or latest.
6.	Bearing bush	Leaded Tin Bronze/resin molded carbon metal/Rubber/ rubber lined	LTB 3, 4 or 5 of IS 318-1981 or latest.
7.	Impeller	-do-	LTB2 of IS 318-1981 of latest Glass filled poly-phenylene oxide (Modified PPO) Upto 400 LPM as per IS: 8034-1989, if available at the duty point, thereafter bronze
8.	Discharge casing	Cast iron	Grade FG200 of IS 210 of IS 1978 or latest.
9.	Pump bowl/diffuser	-do-	-do-
	Keys	Cr. Steel	AISI-410A of ASTM A-276
11.	Suction casing	Cast Iron	Grade FG – 200 of IS- 210,
12.	Pump shaft	Stainless steel	Stainless steel grade X04 Cr 12, X12 Cr 12 or X20 Cr 13 of IS 6603
13.	Stator pipe	Steel	AISI- 304 as per ASTM A 240
14.	Rotor Shaft	Cr. Steel	AISI 410H of ASTM A 276

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Sr. No.	Component	Material	Specifications
15.	Diaphragm	Rubber	Non toxic, with stable polymers synthetic aging minimum 10 years without replacement of NB-60 grade
16.	Thrust bearing plate	C.I. +Carbon above 6” /Steel + Carbon up to 6”	FG 200 of IS 210/ AISI 410 of ASTM A 276
17.	Coupling Sleeve	Chromium Steel	As per relevant IS/AISI;
18.	Thrust bearing housing	Cast Iron	FG 200 of IS 210
19.	Thrust bearing segments	Cr. Steel	CA 40 A of ASTM A743
20.	Counter thrust bearing Plate	Bronze	As per relevant IS/AISI;
21.	Stage Sleeve	Cr. Steel/ Bronze	AISI 410 of A276/LTB2 of IS 318
22.	Wearing Ring (Mixed Flow)	Bronze	LTB 4 of IS 318
23.	Valve Body	C.I.	FG 200 of IS 210
24.	Valve Seat	C.I.	FG 200 of IS 210
25.	Valve Spring	Spring Steel	IS 4454
26.	Valve Dish	C.I.	FG 200 of IS 210
27.	Adaptor	C.I.	FG 200 of IS 210
28.	Sand Guard	Bronze	LTB 2 of IS 318
29.	Bearing Segment Carrier	C.I.	IS 210

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**INFORMATION TO BE FURNISHED BY THE CONTRACTOR WITH BID /
PRIOR TO INSPECTION OF MATERIAL (As per IS: 8034-1989)**

DETAIL OF PUMP

CODE DESIGNATION OF PUMP

1. METHOD OF LUBRICATION :
2. MINIMUM BORE WELL DIA METER IN MM:
3. MUMBER OF STAGES:
4. OUTSIDE DIAMETER OF BOWL
(The max. diameter of pump fitted with non return valve & max. overall diameter of the pump set including the cable guard)
5. DISCHARGE IN LPM
6. TOTAL HEAD IN M
7. SPEED IN RPM
8. PUMP INPUT AT DUTY POINT IN KW
9. OVERALL EFFICIENCY IN %
10. MINIMUM SUBMERGENCE REQUIRED
11. CONFORMITY TO THE MATERIAL PRESCRIBED ABOVE.

DETAILS OF MOTOR

1. RATING IN K.W.
2. TYPE
(in accordance with I.S. 9283-1979)
3. DETAILS OF POWER SUPPLY FOR DUTY POINT SELECTION AND TESTING
4. RATED SPEED
5. OPERATIONAL VOLTAGE RANGE

ADDITIONAL INFORMATION

INSTRUCTUONS FOR INSTALLATION & MAINTENANCE, WEIGHT OF PUMP, MOTOR & CABLE & RISING MAIN PIPE FOR A SPECIFIC SETTING.

TERMS AND CONDITIONS

1. The pipes shall be inspected by two Engineers of the department. Principal shall appoint these Sub Divisional Engineers. One of these Engineers shall be representative of Engineer in charge and the other shall be independent Sub Divisional Engineers from some other division.
2. The minimum size of the column pipe shall be taken as next size of delivery of pump.
3. Similarly the minimum size of the submersible cable shall be next higher size as depicted in the charts showing the current drawl and required cable size in addition voltage drop during summer season and length of cable from starter to pump set should also be kept in mind.
4. All the material shall be ISI Marked unless otherwise the make some other better make has been approved in these specifications.

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SPECIFICATIONS OF LT ELECTRICAL CONTROL PANEL FOR PROPER OPERATION AND PROTECTION OF SUBMERSIBLE PUMPING SET

Panel board having size 900mm x 250 mm x250mm made of not less than 2 mm prestressed cold rolled sheet & auto claved painted. The board should comprise of rigid welded structural frames made of structural steel sections of not less than 3 mm thickness. The board should be smoothly finished & free from flaws. The panel board should have the following flush mounted instruments. It should have space for providing power meter & light meter.

M.C. B:- Standard, MDS, Havell, GE. (upto 10 H.P.)

M.C.C.B:- L&T, Crompton, G.E. Havell (Above 10 H.P.)

E.L.C.B.:- L&T Havell, MDS, G.E.

Switch Fuse Unit:- L&T Simens, G.E.

Contractors, Relays & Timers : L&T Simens, G.E.

Single Phase Preventor : L&T Minillec.

Ammeter & Voltmeter : AE, Mecco, L&T

CT for ammeter; AE, EE, GE. or equivalent

Selector switch for ammeter & Voltmeter : L&T Kaycee

Capacitor : ISI marked or approved by P.S.E.B.

Indicating Lamps (22.5 mm dia):- Led Type.

H.R.C. Fuses: Havell, L&T Siemens, G.E. Havell

Fuse Bases:- -do-

Wires:- Plaza, Kent, Finolex

THIMBLES: DOWELL, JAINSONS, Urmiltron

TESTS: The following tests should be performed on the panel board during the inspection at the manufacturer place.

- 1 General Visual Test.
- 2 High voltage test upto 2 KV
- 3 No load operational test by energizing the panel.

NOTE:-

- 1 Upto 7.5 H.P. D.O.L. Starter will be installed. Above 7.5 H.P. Star Delta Starter will be installed.
- 2 THE FOLLWING FAMILY CURVE ALONGWITH THE CHARACTERISTICS CURVES SIGNED BY THE MANUFACTURER (not below the rank of REGIONAL MANAGER OF REGIONAL INCHARGE) be attached with the tender. Photo copy of the same will not be accepted.

D. HEAD V/S DISCHARGE CURVE.

E. DISCHARGE V/S POWER INPUT CURVE.

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F. DISCHARGE V/S OVERALL EFFICIENCY CURVE.

3. PERFORMA NO. 1 PRICE FOR THE SUBMERSIBLE PUMPING SET, CONTROL PANEL, COLUMN PIPE & CABLE SHOULD BE QUOTED SEPERATELY

4. PERFORMA NO. 2 ONLY THE PRICE OF SUBMERSIBLE PUMPING SET WITHOUT CONTROL PANEL IS TO BE QUOTED.

5. The inspection of the pump will be carried out at the manufacturers premises by the two representative of the Department.

6. The firm should supply the following information for all the pumping set.

DESCRIPTION	NET EFFECTIVE HEAD	GROSS EFFECTIVE HEAD INCLUDING LOSSES IN PUMPING SET	DISCHARGE	EFF. OF PUMP	COMBINED EFF. OF PUMP & MOTOR	MAX. BHP REQUIRED UNDER ALL HEADS OF OPERATION	BHP required = COL.(7) +15%
1	2	3	4	5	6	7	8
DUTY POINT.							
(-) 25% OF D.P							
+ 10% OF D.P							
+ 25% <u>+3%</u> OF D.P when the head is less than 30m							

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ANNEXURE-C

SPECIFICATTIONS
FOR
CIVIL WORKS & OTHERS

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ANNEXURE- 'C'**SPECIFICATIONS FOR CIVIL WORKS & OTHERS**
GENERAL SPECIFICATIONS

Sr. No.	Brief Description	Relevant Code reference (with latest amendment)		Remarks
		Indian Standards (IS)	Pb. PWD Book of specification Chapter No.	
1	2	3	4	5
A	Civil Works			
1	Brick ballast		3.7	
2	Coarse and fine aggregate from natural source for concrete	383-1999	3.29,3.30	
3	Portland Pozzolana Cement	1489-1991 (Part-1 & 2)		SHREE MAKE
4	TMT Fe 415 Grade Steel	1786-1985 (reaffirmed-2000)	3.22	KAMDHENU MAKE
5	Proportions of concrete:- Providing & supplying M-20 grade of concrete for RCC pillars.	456-2000, 3370-1965 (Part I,II,III & IV)	10.4-10.11	
B	Water Supply			
1.	All cast Iron fittings such as bends, collars etc.	1538 (Part I to Part 24)-1993		ISI MARKED
2.	Lead caulking	782-1978		
3.	Sluice valves for water works purposes (50mm – 300mm size).	780-1994		ISI MARKED/ IVC / KIRLOSKAR MAKE
4.	Cast iron plain ended fittings and plain ended bends	5531-1988 IInd revision (Reaffirmed-1997)		ISI MARKED
5.	Cast Iron detachable joints	8794-1988		ISI MARKED
6	Surface boxes for Sluice valves.	3950 -1979 (reaffirmed - 2003)		ISI MARKED
E	Pumping Machinery			
1.	Submersible pumping set	8034-1989 (Reaffirmed1999)		CROMPTON MAKE
2.	Submersible Motor	9283-1995		CROMPTON MAKE
3.	Switch Board, Control Panel Board.	8623-1993, 13947-1993, 11353-1985		L&T MAKE
4.	Flanged column pipe	1239 (Part – I) – 2004		JINDAL MAKE (Medium class)
5.	Submersible cable	694:1990 (Reaffirmed2000)		HAVELL MAKE
6.	Centrifugal Pump	6595-2002		KIRLOSKAR MAKE
7.	Reflux Valve , Cast Iron , Gun Metal	5312-1984 778-1984		LEADER / L&T MAKE
8	Air Valve	14845 - 2000		BIR MAKE

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		(reaffirmed - 2005)		
9	Cast Iron Foot Valve	4038-1986 (reaffirmed-2005)		ISI MARKED
10.	Erection of Pump Set, Electric Motor and Other accessories and main connections.	9694 (Part – II)-1980 (Reaffirmed1997)		SHALL BE CARRIED OUT AS PER PSEB GUIDELINES.
11.	Panel Board			L&T / HAVEL / GE MAKE
a.	Motor controlling switch			AE / MECO / L&T / EE/ GE MAKE
b.	Digital Volt meter range 0-500 Ammeter range 0-30 amps or 0-50 amps	1248-1993		AE / MECO / L&T / EE / GE MAKE
c.	Indicating lamp	1901-1978		22.5 MM DIA LED TYPE
d.	Starter			L&T / GE MAKE
12.	Diesel Engine Upto 20.00k.w. Above 20.00k.w.	10001-1981 10002-1981		KIRLOSKAR / GREAVES / CUMINS / COOPER MAKE
13	Generating Set-Alternator	4722-1968		KIRLOSKAR / CROMPTON / NGEF / JYOTI / GEC MAKE
14	Single phase preventer with CO contact			MINULEC MAKE
15	Electronic over current relay			BCH / C&S / MINILEC MAKE
16	MCCB	13947 Part II-1993 (reaffirmed 2004)		BWH / L&T MAKE

Note:

1. The work shall be carried out strictly in accordance with BIS / Punjab PWD specification book of latest edition to be read along with the manual of specification (Part –B). Wherever there is any contradiction BIS specification will prevail.
2. Any item not included in the above schedule of specifications should conform to relevant IS-Specification and principles laid down in Punjab PWD Book of Specifications with up-to-date amendments.
3. Items not covered under IS-Specifications or Punjab PWD Specifications / or make mentioned not available in the market; should be got approved from the competent authority before its execution at site.
4. All the material shall be ISI Marked unless otherwise the make some other better make has been approved in these specifications.
5. First of all, the work for construction of Tubewell will be taken in hand. The other activities relating to pumping machinery, connection of the rising main with the delivery pipelines and the successful commissioning of the Tubewell as well as availability of potable water.

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SECTION 2: BILL OF QUANTITIES

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BILL OF QUANTITY

Name of work :- Providing and installing Deep Tubewell 250 mm i/d straight upto 125 mtr. depth with 20 mtr. stainless steel strainer, with Reverse Rotary Rig, Providing, Fixing Submersible Pump Set, Changeover old & New Machinery including wire new tubewell to Pump Chamber, Providing & Fixing M.S Pipe 150mm i/d and Providing & Fixing Sluice Valve, Construction of Sluice Valve Chamber, 2 Nos Column 15ft Height including Garder Complete in all respects in **Beant College of Engineering & Technology (BCET), Gurdaspur.**

Bid document cost: Rs.

Earnest money : Rs.

Time Limit :- 1 Months

Sr. No.	Description of Item	Qty.	Unit	Rate		Amount
				In figure	In words	
1	Drilling of (26") 650 mm dia bore with Reverse Rotary Rig in all kinds of soil including the cost of consumable stores, fuel oil and transportation of rig to the site of the proposed bore (0 to 125 m (approx.) BGL)	125	m			
Note :-	1. Erection and dismantling of boring plant including all arrangement for the transportation of the boring equipment to site of work from the store of contractor at site and back are to be made by the contractor at his own cost. All rates should be quoted for supplying the material at site of work. Pits for collection of Water and Water for drilling tube-well be arranged by the firm/ contractor at site at his own cost.					
	2. In case the bore is converted into a tube-well payment of bore shall be made up to the bail plug plus margin (7% of main bore drilling or as actual as per field requirement whichever is less) required for sustaining the main bore. The test bore beyond margin shall be paid at the rate of test bore drilling.					
	Drilling of 9" test bore hole including the rate for logging. (Electric logging shall be carried out by contractor up to full depth). To be paid only for drilling depth beyond the bail plug margin or the tube-well is abandoned.	125	m		-	-
1.1	Making electric logging of Bore Hole with electronic well logger including cost of equipment at site etc, complete in all respects	1	Each			

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1.2	Supplying, lowering of mild steel pipes as per IS: 4270-2001 including MS Sockets having dimension as per IS code dully welded with MS electrode to have extra straight lower the pipe into Tubewell Bore complete in all respects.				
	250mm internal diameter of Jindal Make (weight 52.3kg per meter) 8.00mm thick.	101	m		
1.3	Supplying, lowering of stainless steel cage type wire wound screen as per IS: 8110-2000 or latest with SS sockets to connect strainer to strainer of Johnson Make dully welded with suitable grade S.S welded electrode to lower the strainer into Tube well Bore.				
	10" (250mm) i/d (slot size 0.75/1.0mm) 7.30 mm thickness (conforming to sieve analysis)	20	m		
1.4	Supplying and fixing of bail plug of MS pipe complete with inverted u-hock attached to the bottom plug complete in all respects				
	(250mm) i/d 8.00 mm Thick weight 52.3 kg per metre)	4	m		
1.5	Supplying and fixing mild steel centering guides made out of 32mm x 6mm thick M.S. bar complete in all respects.	5	each		
1.6	Supplying and fixing of well cap having threads to fix on housing pipe. Complete in all respects (250mm i/d)	1	each		
1.7	Supplying and fixing of mild steel clamps of size 150 mm x 12mm made out of MS Flat 1.52m) long, suitable to fit the housing pipe including the cost of Nut of Bolt of Suitable size complete in all respects	1	each		
1.8	Supplying, lowering and fixing of MS specials sockets to connect to SS Strainer to MS pipe dully welded with suitable grade welding electrode complete in all respects (250mm id)	4	each		
1.9	Supplying at site wooden box of suitable size with lid and locking arrangement for preserving strata sample received from the bore.	1	each		
1.10	Supplying of gravel of 1/16" to 1/8" sizes including pouring and packing in the annular space between the pipes assembly and the bore. The gravel should be free from, dust, dirt or the vegetable manner as per IS 4097/1967 with latest amendments (to be paid as per actual length of pipe).	34	cum		
1.11	Development and stabilizing of the tube-well with Air Compressor of required capacity as directed by the Principal including the cost of tools and appliances and consumable to the satisfaction of Principal.				
a	Capacity of Air Compressor 500 cfm at 150 PSI	10	hours		
1.12	Development and stabilizing of the tube-well with Submersible Pump of required capacity including	8	hours		

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	the cost of tools and appliances and consumable to the satisfaction of Dean (P&D).					
2	Providing & Installing Testing & Commissioning of one No. Electrically driven Submersible Pumping set 25.00 BHP 2 Nos of CROMPTON MAKE (1 No Submersible Motor Use as a standby) capable of delivering 1100 LPM against a head of 60 mtr. along-with electric panel board consisting of electric appliances such as automatic Starter, Main Switch. Volt Meter, Ampere Meter, ELCB, Shunt Capacitor, Single Phase Preventer, Indicating Lamps, MVB/MCCBs etc. including M.S. Column Pipe of suitable size 36 m (in 3 m Lengths each with flanges, screwed and welded on both sides) rubber gaskets, nuts and bolts submersible cable (of reputed make) complete in all respects.	1	Job			
3	Change Over Old Machinery & New Machinery including wire new tubewell to old pump chamber (LS)	1	LS			
4	Rising Main Providing fixing, laying, jointing, cutting & testing of MS Pipes & Specials including cost of excavation complete in all respects as per analysis A-4. Make (Jindal Make) 150 i/d	50	Mtr.			
5	Providing & fixing C.I. D/F S.V. (IS 780-1994 or latest KIRLOSKAR Make including cost of tail piece, Rubber jain, dori nut bolts & accessories complete in all respects. 150 mm i/d	1	Each			
6	Construction of masonry Sluice valve chamber (IS 2212-1991 or latest) complete in all respect as per standard drawing size 0.90x0.90 mtr.	1	Each			-
7	RCC Column (Size 12"x12")15ft Height including Garder	2	(LS) Nos			
	Total					
	Say					

Note:-

1. Item for which no rate or price has been entered it will not be paid for by the Employer when executed and shall be deemed covered by the rates and prices in the Bill of Quantities.
2. Unit rates and prices shall be quoted by the bidder in Indian rupee.
3. Where there is a discrepancy between the rate in figures and words, the rates in words will govern.
4. Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by quantity, the unit rate quoted shall govern.

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5. Any item of work not included in the above contract schedule of rates and got done at the site of work; the same will be paid according to CSR-2010 subject to the premium or discount tendered by the contractor. In the case of non-schedule items, the decision of the Principal will be final and binding upon the contractor. In case any item which is a part of lump-sum rate is not executed at site, the amount of the same shall be deducted @CSR rates + Ceiling premium prevailing on the date of tender.
6. The work will be carried out in accordance with PWD Book of specifications – 1963 edition with upto date amendments.
7. Approximate quantities are given in the contract schedule of rates and these can vary at the time of execution of the work. The payment will be made according to the actual work done by the contractor.
8. All amendments issued on the common schedule of rates with latest ceiling premium. up to the date of opening of tenders will be applicable on the contract schedule of rates.
9. Contractor should clearly quote his rates in figures & words. Conditional tender will be rejected.
10. All items and rates provided in the DNIT are subject to the footnotes given in CSR-with latest ceiling premium.
11. The Principal will have full powers to change the layout of the work covered in this contract if considered necessary. No claim will be entertained from the contractor in case, any mistake in description rates or unit occurs in any item taken in this schedule while preparing this DNIT or on account of typing or comparison or over writing. The same will be rectified at any time as per common schedule of rates along with up to date amendments. The arrangement of bricks at site of work would be done by the contractor at his own level from his own source.
13. For any other non-schedule items, the contractor will submit through Principal, the analysis of rates in triplicate based on purchased vouchers. A margin of 10% shall be allowed for the material components and 21.5% on labour components and contractor shall produce photostat copies of the purchase vouchers in support of his claim. The decision of the Principal/competent authority in the matter shall be final and binding on the contractor.
- 14.
15. All the extra items will be got approved from the competent authority and no premium will be allowed on non schedule items.
16. Pavement for the carriage of material shall be paid as per the rates quoted by the tenderer.
- 17.i) Time period allowed for completion of work in 1 months.
ii) If contractor allowed for start of work within 7 days from the date of allotment,

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SECTION 3: FORMS OF SECURITIES

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Forms of Securities

Acceptable forms of securities are annexed. Bidders should not complete the Performance and Advance Payment Security forms at this time. Only the successful Bidder will be required to provide Performance and Advance Payment Securities in accordance with one of the forms, or in a similar form acceptable to the Employer.

Annex A: Bid Security (Bank Guarantee)

Annex B: Performance Bank Guarantee

Annex C: Performance Bank Guarantee for Unbalanced Items

Annex D: Deleted

Annexure A
BID SECURITY (BANK GUARANTEE)

WHEREAS, _____ [name of Bidder] (hereinafter called "the Bidder") has submitted his Bid dated _____ [date] for the work of **Bid document** for Providing and installing Deep Tubewell 250 mm i/d straight upto 125 mtr. depth with 20 mtr. stainless steel strainer, with Reverse Rotary Rig, Providing, Fixing Submersible Pump Set, Changeover old & New Machinery including wire new tubewell to Pump Chamber, Providing & Fixing M.S Pipe 150mm i/d and Providing & Fixing Sluice Valve, Construction of Sluice Valve Chamber, 2 Nos Column 15ft Height including Garder Complete in all respects in Beant College of Engineering & Technology (BCET), Gurdaspur.

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KNOW ALL PEOPLE by these presents that We _____ [name of bank] of _____ [name of country] having our registered office at _____ (hereinafter called "the Bank") are bound unto **Principal, Beant College of Engineering & Technology, Gurdaspur** [name of Employer] (hereinafter called "the Employer") in the sum of Rs. _____¹ for which payment well and truly to be made to the said Employer the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 2012.

THE CONDITIONS of this obligation are:

(1) If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified in the Form of Bid;

or

(2) If the Bidder having been notified of the acceptance of his bid by the Employer during the period of Bid validity,

(a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or

(b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders; or

(c) does not accept the correction of the Bid Price pursuant to Clause 27,

we undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date _____² days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE _____
WITNESS _____

SIGNATURE OF THE BANK _____
SEAL _____

[signature, name, and address]

1 The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 16.1 of the Instructions to Bidders.

2 45 days after the end of the validity period of the Bid.

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PERFORMANCE BANK GUARANTEE

To: **Principal, Beant College of Engineering & Technology, Gurdaspur** , *[name of Employer & address of Employer]*

WHEREAS _____ *[name and address of Contractor]* (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. _____ dated _____ to execute the work of **Bid document** for Providing and installing Deep Tubewell 250 mm i/d straight upto 125 mtr. depth with 20 mtr. stainless steel strainer, with Reverse Rotary Rig, Providing, Fixing Submersible Pump Set, Changeover old & New Machinery including wire new tubewell to Pump Chamber, Providing & Fixing M.S Pipe 150mm i/d and Providing & Fixing Sluice Valve, Construction of Sluice Valve Chamber, 2 Nos Column 15ft Height including Garder Complete in all respects in Beant College of Engineering & Technology (BCET), Gurdaspur.

[name of Contract and brief description of Works] (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of _____ *[amount of guarantee]*¹ _____ *[in words]*, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ *[amount of guarantee]*¹ as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there-under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until 28 days from the date of expiry of the Defects Liability Period.

Signature and seal of the guarantor _____

Name of Bank _____

Address _____

Date _____

1 An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract including additional security for unbalanced Bids, if any and denominated in Indian Rupees.

PERFORMANCE BANK GUARANTEE (for unbalanced items)

To: **Principal, Beant College of Engineering & Technology, Gurdaspur** , [name of Employer]&[address of Employer]

WHEREAS _____ [name and address of Contractor] (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. _____ dated _____ to execute the work of **Bid document** for Providing and installing Deep Tubewell 250 mm i/d straight upto 125 mtr. depth with 20 mtr. stainless steel strainer, with Reverse Rotary Rig, Providing, Fixing Submersible Pump Set, Changeover old & New Machinery including wire new tubewell to Pump Chamber, Providing & Fixing M.S Pipe 150mm i/d and Providing & Fixing Sluice Valve, Construction of Sluice Valve Chamber, 2 Nos Column 15ft Height including Garder Complete in all respects in Beant College of Engineering & Technology (BCET), Gurdaspur.

[name of Contract and brief description of Works] (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of _____ [amount of guarantee] ¹ _____ [in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of guarantee]¹ as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there-under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until (i.e.) 28 days from the date of issue of the certificate of completion of works.

Signature and seal of the guarantor _____
 Name of Bank _____
 Address _____
 Date _____

- 1 An amount shall be inserted by the Guarantor, representing additional security for unbalanced Bids, if any and denominated in Indian Rupees.