

APPENDIX 2.18

(See Paragraph 2.091)

PART - III**FORM "F" - TENDER FOR A LUMP SUM CONTRACT FOR W.R.D. ONLY**

I/We do hereby tender to execute the whole of the work described in the drawing Nos..... and according to the annexed specification as signed by and dated..... for the sum of *Rs.....and should this tender be accepted I/We do hereby agree and bind myself/ourselves to abide by and fulfill all the conditions annexed to the said specification or in default thereof to forfeit and pay to the Governor of C.G. the penalties of sums of money mentioned in the said conditions, viz.

Dated.....

Tenderer's Signature.....

Address.....

Witness.....

Address

The above tender is hereby accepted by me on behalf of the Governor of the Chhattishgarh.

The.....20.....

*To be expressed in words and figure.

SECURITIES

Name	Address	Occupation or profession	Remarks
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CONDITIONS OF CONTRACT

- 3.1 The person(s) whose tender may be accepted (hereinafter called the contractor(s) shall within ten days of the receipt by him/them of the notification of the acceptance of his/their tender, deposit with the Executive Engineer a sum equal to percent of the tendered amount either in cash or interest bearing securities endorsed to the Executive Engineer from any Nationalised or Scheduled Bank's Branch. All damages to be borne, or other sums of money payable by the Contractor(s) to the Governor of Chhattishgarh under the term of this contract may

be deducted from or paid by the sale of sufficient part of his/their security deposit or from the interest arising there from or from any sums which may be due or may become due to the contractor(s) by the Governor of the Chhattisgarh on any account whatsoever. In the event of his/their security deposit being reduced by reason of any deductions or sale as aforesaid or by reason of forfeiture under clause 3.13 the contractor(s) shall within ten days thereafter make good in cash or Government securities endorsed as aforesaid any sum or sums which may be necessary to make the amount of deposit equal to percent of the tendered value.

The contractor(s) is/are to provide everything of every sort and kind which may be necessary and requisite for the due and proper execution of the several works included in the contract according to the true intent and meaning of drawings and specification taken together which are to be signed by the **Executive Engineer**,(hereinafter called the Executive Engineer) and the contractor (s) whether the same may or may not be particularly described in the specification or shown on the drawings, provided that the same are reasonably and obviously to be inferred there from and in case of any discrepancy between the drawings and the specification the Executive Engineer is to decide which shall be followed.

- 3.2 The contractor(s) is/are to set out the whole of the works in conjunction with an officer to be deputed by the Executive Engineer and during the progress of the works to amend on the requisition of the Executive Engineer any errors which may arise therein and provide all the necessary labour and materials for so doing. The Contractor(s) is/are and requisite for the works. All materials and workmanship are to be the best of their respective kinds. The contractor (s) is/are to leave to works in all respects clean and perfect at the completion thereof.
- 3.2 A. In respect of all bearings, hinges or similar parts intended for use in the superstructure on any bridge, the contractor shall, whenever required, in the course of manufacture, arrange and afford all facilities for the purpose of inspection and test of all or any of these parts and the material used therein to any officer of the Directorate of Inspection of the Ministry of Works, Production and supply of the Government of India and such bearings, hinges or similar parts shall not be used in the superstructure of any bridge except on production of a certificate of acceptance thereof from the Directorate of Inspection. All inspection charges will be payable by the contractor.

- 3.3 Complete copies of the drawings and specification signed by the Executive Engineer are to be furnished by him to the contractor (s) for his/ their own use and the same or copies there of are to be kept on buildings in-charge of the contractor(s) agent who is to be constantly kept on the ground by the contractor(s) and to whom the instructions can be given by the Executive Engineer The contractor(s) is/are not to sublet the works or any part there of without the consent in writing of the Executive Engineer.
- 3.4 The Executive Engineer is to have at all times access to the works, which are to be entirely under his control. He may require the contractor(s) to dismiss any person in the contractor's (s) employ upon the works who may be incompetent or misconduct himself and the contractor(s) is/are forthwith to comply with such requirements.
- 3.5 Deleted.
- 3.6 Deleted.
- 3.7 All work and materials brought and left up on the ground by the contractor (s) or his/their orders for the purpose of forming part of the works are to be considered to be the property of the Governor of Chhattisgarh and the same are not to be removed or taken away by the contractor (s) or any other person without the special license and consent in writing of the Executive Engineer but the Governor of the Chhattisgarh is not to be in any way answerable for any loss or damage which may happen to or in respect of any such work or materials either by the same being lost or stolen or injured by weather or otherwise.
- 3.8 The Executive Engineer has full power, to require the removal from the premises of all materials which in his opinion, are not in accordance with the specification and in case of default the Executive Engineer is to be at liberty to employ other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Executive Engineer is also to have full power, to require other proper materials to be substituted and in case of default the Executive Engineer may cause the same to be supplied and all costs which may attributed to such removal and substitution are to be borne by the contractor(s).
- 3.9 If in the opinion of the Executive Engineer any of the works, are executed with improper materials or defective workmanship, the contractor(s) is/are when required by the Executive Engineer forth with to re-execute the same and to substitute proper, materials and workmanship and in case of default of the

contractor(s) is so doing within a week the Executive Engineer is to have full power to employ other persons to re-execute the work and the cost thereof shall be borne by the contractor(s).

- 3.10 Any defects, shrinkage or other faults which may appear within twenty four months from the completion of the building* arising out of defective or improper materials or workmanship are upon the direction of the Executive Engineer to be amended and made good by the contractor (s) at his/their own cost unless the Executive Engineer shall decide that he/they ought to be paid for the same and in case of default the Governor of Chhattisgarh may recover from the contractor (s) the cost of making good the works.

* Building, means all works / activities proposed under the contract.

- 3.11 From the commencement of the works to the completion of the same, they are to be under the contractor(s) charge. The contractor (s) is/ are to be held responsible for and to make good all injuries, damages and repair occasioned or rendered necessary to the same by fire or others causes and they are to hold the Governor of Chhattisgarh harmless from any claims for injuries to persons or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the contractor(s) or of anyone in his/their employ during the execution of the works.

- 3.12 Deleted.

- 3.13 The works comprised in this tender are to be commenced immediately upon receipt of the order of commencement given in writing by the Executive Engineer when possession of the site can be had. The whole work, including all such additions and variations as aforesaid (but excluding such, if any, as may have been postponed by an order from the Executive Engineer) shall be completed in every respect within.....(.....) months including rainy season from the date of issue of the aforesaid order and if from any cause, whatever, other than will-full obstruction or default on the part of the Executive Engineer or his staff, and except as hereinafter provided, the whole of such work shall not be finished to the satisfaction of the Executive Engineer within the said period, the contractor (s) shall forfeit to the Governor of Chhattisgarh, from his/their security deposit and/or any dues payable to him, by way of ascertained and liquidated damages, for each default not by way of penalty, the sum of Rs. (Rs.) per day for every complete day of such default provided that the entire amount of damages to be forfeited under the provisions of

this clause shall not exceed ten percent on the estimated value of the whole contract value.

Provided nevertheless that if the contractor (s) shall be of the opinion that he is/they are entitled to any extension of time on account of the works being altered, varied or added to or on account of any delay by reason of any inclement weather or causes not under the control of the contractor (s) in consequence of orders to that effect from the Executive Engineer himself which orders the Executive Engineer, who is empowered to give them in any or either of such cases. The Executive Engineer shall recommend in writing to competent authority to extend the aforesaid period for final completion by such period or periods as he shall deem reasonable and the contractor (s) is/are to complete the works within such extended period or periods as aforesaid. Provided that the contractor (s) shall not be entitled to any extension of time unless he/they shall within three days after the happening of the event in respect of which he/they shall consider himself/themselves entitled to any extension give to the Executive Engineer written notice of such claim to any extension of time and of the grounds or grounds and of the amount thereof unless in any case the Executive Engineer shall in his discretion dispense with such notice and certify for an extension of time. Nevertheless and in case of extension of time the aforesaid provisions with amount for damages in default of due completion shall apply in case of non-completion of the works within the extended time.

- 3.14 If the contractor(s) shall become bankrupt or compound with or make any assignment for the benefit of his/their creditors or shall suspend or delay the performance of his/their part of the contract (except on account of causes mentioned in clause **3.13** or in consequence of not having proper instructions for which the contractor(s) shall have duly applied), Executive Engineer may give to the contractor(s) or his/their assignee or trustee, as the case may be notice requiring the work to be proceeded with and in case of default on the part of the contractor(s) or his/their assignee are trustee, for a period for seven days, it shall be lawful for the Executive Engineer to enter upon and take possession of the works and employ any other person or persons to carry on and complete the same and to authorise him or them to use the plant, materials and property of the contractor(s) upon the works and the costs and the charges incurred in any way in carrying on and completing the said works are to be paid to the Executive Engineer by the contractor(s). The Executive Engineer shall be final authority to determine the amount spent to complete the unfinished work. The certificate of Executive Engineer as to the value of the balance work done shall be final and conclusive against the contractor.

3.15 Deleted.

3.16 A certificate of the Executive Engineer or an award of the referee herein after referred to, as the case may be, showing the final balance due or payable to the contractor(s) is to be conclusive evidence of the works having been duly completed and that the contractor(s) is/are entitled to receive payment of the final balance, but without prejudice to the liability of the contractor(s) under provision of clause **3.10**.

3.17 Deleted.

3.18 If at any time before or after the commencement of the work, Governor of the Chhattisgarh shall, for any reason whatsoever :-

- (a) Cause alterations, omissions or variation in the drawings and specification involving any curtailment of the works as originally contemplated; or
- (b) Not required the whole of work as specified in the tender to be carried out, the contractor(s) shall have no claim to any payment or compensation whatsoever on account of any profit or advantage which he/they might have derived from the execution of the work in full as specified in the tender but which he/they did not derive in consequence of the curtailment of the works by reason of alterations, omissions or variations or in consequence of the full amount of the work not having been carried out.

But the contractor(s) shall be entitled to compensation for any loss sustained by him/they by reason of his/their having purchased or procured any materials or entered into any engagements or made any. advance to labour or taken any other preliminary or incidental measures on account of or with a view to the execution of the works or the performance of the contract.

Dated20

Signature of Contractor

Dated20

E.E. Division

PART IV

SPECIAL CONDITIONS

4.1 General :- The special conditions are supplementary instructions to the tenderers and would form part of the contract.

4.1.1 It is mandatory to release water through any Canal (where the work is to be executed) for irrigation and other purposes during construction period and if other contract agencies will also be deployed for execution of work in canal and for these working area/site should also be provided then :-

- (i) No compensation will be given for any type of loss/time/work/labour / machinery etc., due to running of water in the canal for any purpose at any time or works entrusted to agencies other than this contract.
- (ii) Existing irrigation facilities to the users should not be effected at any cost due to any reason during construction period.
- (iii) Lining work should only be taken up after completion of earth work in the reaches awarded to other contractor and for this purpose no compensation will be given for any loss whatsoever.
- (iv) Inspection of work and patrolling during irrigation or through service bank of the canal should not be effected during construction.

4.2 Construction Programme :- The contractor will submit "Construction Programme" showing quantity wise sequence of operations within one week and should get the programme approved from the competent authorities. Along with the above he will also submit programme of bringing requisite tools and plant, machinery to be engaged by him to the site of work.

Contractor shall also prepare their own month wise (detailed week wise), item wise physical construction programme, prepared with computer aided project management software to generate barchart based on network technique as per approved quantities of different items without modifying date of work order (start date) and stipulated date of completion (end date) within one week after approval of estimated and get it approved from Engineer-in-Charge, the programme shall be as per work completion schedule. The Contractor shall submit weekly progress report to Engineer-in-Charge in approved format of report regularly.

4.3 Action when the progress of any crucial item of work is unsatisfactory :- If the progress of a crucial item of work, which is important for timely completion of work is unsatisfactory, the Engineer-in-Charge, shall not withstanding, that the general progress of work is satisfactory, in accordance with clause **4.28** be entitled to take action under clause **4.29** after giving the contractor 10 days notice in writing and the contractor will have no claim for compensation for any loss sustained by owing to such action.

4.4 Inspection and Tests :- Except as otherwise provided in here of all materials and workmanship. If not otherwise designated by the specifications, shall be subject to inspection, examination and test by the Engineer-in-charge at any and all times

during manufacture and/or construction are carried on. The Engineer-in-charge shall have the right to reject defective material and workmanship or require its corrections. Rejected workmanship shall be satisfactorily replaced with proper material without charge thereof and the contractor shall properly segregate and remove the rejected material from the premises. If the contractor fails to proceed at once with the replacement of the rejected material and/or the construction of defective workmanship, the Engineer-in-charge may replace such material and/or correct such workmanship and charge the cost thereof to the contract.

The contractor shall be liable for replacement of defective work upto the time in accordance with clause 4.39 of the conditions of contract of all work to be done under the contract.

The contractor shall furnish promptly without additional charge all facilities, labour and material necessary for the safe and convenient inspection and tests that may be required by the Engineer-in-Charge.

All inspections and test by the department shall be performed in such a manner as not to unnecessarily delay the work. Special full size and performance test shall be charged with any additional cost of inspection when the contractor does not make, materials and workmanship ready at the time of inspection.

- 4.5 Removal of temporary work, plant and surplus materials :-** Prior to final acceptance of the completed work, but excepting as otherwise expressly directed or permitted in writing. The contractor shall, at his own expenses remove from the site and dispose off all the temporary structures including buildings, piece work, crib work, all plant and surplus materials and all rubbish and debris for which he is responsible to the satisfaction of Engineer-in-Charge.
- 4.6 Possession prior to Completion :-** The Engineer-in-Charge shall have the right to take possession of, or use any completed part of the work, such possession or use shall not be deemed to take the right, as an acceptance of any work not completed in accordance with the contract'
- 4.7 Damage to Works:-** The works whether fully completed or incomplete, all the materials, machinery, plants, tools, temporary buildings and other things connected there with shall remain at the risk and in the sole charge of the contractor until the completed work has been delivered to the Engineer-in-Charge and till completion certificate has been obtained from the Engineer-in-Charge. Until such delivery of the completed work the contractor shall at his own cost take all precautions reasonably to keep all the aforesaid works, materials, machinery, plants, temporary buildings and other things connected there with free from any loss or damage and in the event of the same or any part thereof being lost or damaged, he shall forth with reinstate and make good such lost or damage at his own cost.
- 4.8 Examination and tests on Completion :-** On the completion of the work and not later than three months there after, the Engineer-in-Charge shall make such examination and tests of the work as may then seem to him possible, necessary or desirable, and the contractor shall furnish free of cost any materials and labour

which may be necessary therefore, and shall facilitate in every way all operations required by the Engineer-in-Charge, in making examination and tests.

- 4.9 Climatic Conditions :-** The Executive Engineer, may order the contractor to suspend any work that may be subjected to the damage by climatic condition and no claim of the contractor will be entertained by the department on this account.

- 4.10 Safety Regulations :-** While carrying out this work, the contractor shall ensure compliance of all safety regulations as provided in Safety Code (**Annexure -E**)

The contractor shall arrange for the safety in his operations as required including the provisions in the safety manual published by the Central Water and Power Commission, New Delhi (Jan 1962 Edi.) in case the contractor fails to make such arrangements the Engineer-in-Charge shall be entitled to cause them to be provided and to recover the cost thereof from the contractor.

4.11.1 Haul Roads :-

The contractor will have to make the work sites accessible to the departmental officer for inspection by way of constructing / maintaining all weather roads / approaches.

4.11.2 Layout of construction of roads:-

The Contractor shall have to submit detailed plan to the Engineer-in-Charge showing the layout of the work site, roads and approach roads proposed by him, before he starts the actual work. Such a road layout road plan will be scrutinised by the Engineer-in-Charge and any modification suggested by him will be binding on the Contractor. If it is decided by the Engineer-in-Charge to have some of the roads proposed by the Contractor as common road for common use of department and other or convenient and for compact and planned layout of work site, the Contractor will be bound to construct them and allow them to be used simultaneously by other Contractors and department. In case of disputes, the decision of the Engineer-in-Charge shall be final and the binding on the Contractor.

4.12 Own arrangement for water, power, light and explosives

The Contractor will make his own arrangements for supply of water, light and power to his works and labour camps. The Contractor will also make his own arrangement for procurement of explosives (if required) and its license from competent authority. The department shall not be responsible for any delay in arranging power supply from Chhattisgarh State Electricity Board and explosive license etc. by the Contractor. No claim and time extension shall be entertained on these account.

4.13 Regulations and Bye-Laws:-

The Contractor shall conform to the regulation, bye laws, any other statutory rules made by any local Authorities or by the Government and shall protect and indemnify Government against any claim or liability arising from or based on the violation of any such laws, ordinance, regulations, orders, decrees, etc.

4.14 Period and hours of work :-

The work shall be done usually during the day time. In the interest of the progress if it is felt necessary to work during night, the Contractor shall, obtain specific permission of the Engineer-in-Charge. If the work is to be done at night, prior permission of Engineer-in-Charge should be obtained and adequate lighting arrangement shall be made as directed by the Engineer-in-Charge.

4.15 Passing of Foundation etc.

After the completion of the work of excavation, the same will be checked and passed by the competent authority. No masonry or concrete or back filling shall be laid unless the foundation is so passed. No concreting shall commence unless the centering and the reinforcement is checked by the Engineer-in-Charge.

4.16 Order Book :- An order book shall be kept in the departmental office on the site of the work. As far as possible all orders regarding the works are to be entered in this book.

All entries herein shall be signed by the departmental officers in direct charge of the work and Contractor or his representative. In the important cases the Executive Engineer or the Superintending Engineer will countersign the entries which have been made. The order book shall not be removed from the work site except with the written permission of the Superintending Engineer and the Contractor or his representative shall be bound to take note of all instructions meant for the Contractor as entered in the order book without having to be called for separately to note them. The Engineer-in-Charge shall submit periodically copies of the remarks of the Order Book to the Superintending Engineer and Chief Engineer for record and to the Contractor for compliance and report.

4.17 Contractor Not to Dispose off Soil etc. :- The Contractor shall not sell or otherwise dispose off or remove except for the purpose of this Contract, sand, stone, clay, ballast, earth, rock or other substance or material any treasure fossil mineral or any other article of value or interest which may be obtained from the excavation made for the purpose of this contract or any produce from the site. All such substance, materials and produces shall be the property of Government.**4.18 Gold, Silver, Minerals, Oils, Relic Etc. Found on the site:-**

All gold, silver, oil or other minerals of any description and all precious stones, coins, treasure relics antiquities and other similar thing which shall be found in or upon the site shall be property of the Government and the Contractor shall duly preserve the same to the satisfaction of the Engineer-in-Charge and shall from time to time deliver the same to such person or persons as the Engineer-in-Charge may appoint.

4.19 Signing Field Books, Longitudinal sections, cross-sections and Measurements

Books :- Before starting the work, and at the end before the work is covered, levels for plotting the longitudinal sections (along the axis as decided by Engineer-in-Charge or his authorised representative) and cross section of the portion of the work shall be taken by authorized Engineer of the Contractor in the presence of the Engineer-in-Charge or his duly authorised representative and the same shall have to get attested from the Engineer-in-Charge or his authorised

representative in the token of acceptance. If the Contractor fails to take measurements and sign them the measurements recorded by the Engineer-in-Charge or his representative in the authorised books shall be final and binding on the Contractor. For this purpose, suitable date or dates shall be fixed by the Engineer-in-Charge and intimated to the Contractor at least three days in advance. If the Contractor or his duly authorised agent fails to attend on the appointed date or dates, the levels and measurements shall be taken in his absence and such levels and measurements and longitudinal sections and cross sections based there on shall be final and binding on the Contractor. The levels will be taken on such alignment and cross sections as will be useful for reference permanently and described under specification for 'Excavation'. The point of the locations for the levels will depend upon the roughness of the area and will also be at least in conformity with the requirement of specification for 'Excavation' as far as possible.

The similar procedure for record measurement shall hold good for all other items and activities involved in execution of the work. All the levels measurements shall be recorded by Engineer-in-Charge or his authorised representative in the authorised levels/measurement book.

4.20 Bills and payments:-

Minimum one running payment in a month in each concerned work division is permitted. The bill shall be submitted by the Contractor by 10th day of the month, payment of this bill shall be effected as per provision of payment schedule **vide annexure –‘F’**. Non submission of the bills on the schedule dates will absolve the Department of the liability to make payment.

However, no claim on account of delay in payments, which might occur due to reasons beyond the control of the department, shall be entertained.

Contractor's price bid as approved shall be divided among components of work as **Annexure-‘F’** of schedule of payment to their respective percentage as stipulated in schedule of payment **Annexure-'F'** and same shall be considered for payment.

The schedule of payment **Annexure-‘F’** shall supercede all mode of payment(s) / payment schedule (if) stipulated anywhere in tender document.

The proportion of different component of work as compared to over all cost of project is as per stipulation in **Annexure-'F'** of schedule of payment.

Contractor whose price bid has been accepted shall be required to submit component wise detail schedule of payment, based on technical Sanction and in accordance with the provisions shown in schedule of payment **Annexure- ‘F’** . This detailed schedule of payment shall be got approved from Chief Engineer,
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The component shown in schedule of payment **Annexure-'F'** shall be further divided into appropriate sub-components and their stages for the purpose

of payment. The stages should have relation to the programme of construction taking due cognizance of interdependency of various activities. Each stage shall be expressed as percentage of total cost of approved bid. Sum of all such stages of particular component shall be equal to the percentage of that component shown in the schedule of payment **Annexure -'F'**.

This detailed schedule of payment approved by the Chief Engineer, shall form part of the agreement. The payment shall be released only as per work done and respective component of work has been completed and / or levels are achieved.

Contractor shall record the joint measurement for work carried out as per procedure laid down by department for purpose of keeping record and same shall be got checked from competent authority before payment. All hidden measurements shall be got 100% checked from the competent authority before payment, the contractor shall produce result of quality control tests carried out by Quality Control Organisation of department. If the test result do not fulfil the stipulated criteria laid down in specification the payment will be limited as per the provisions in the specification(s) and if number of result fail beyond the limit of acceptance, than the contractor shall not be paid unless he rectifies all such imperfect work(s). The decision of the Chief Engineer in respect of the matters pertaining to the quality control shall be final and binding on the contractor.

4.21 Bill to be submitted monthly :- A bill shall be submitted by the contractor each month on or before the date fixed by the Engineer-in-Charge for all work executed in the previous month and the Engineer-in-Charge shall take or causes to be taken the requisite measurement, for the purpose of having the same verified and the claim as far as admissible adjusted if possible before the expiry of 10 days from the presentation of the bill.

4.22 Bill to be on Printed forms :- The contractor shall submit all bills on the prescribed printed forms of the department.

4.23 Cleaning up

- (a) The Contractor shall at all time keep the construction areas and his colony and storage free from accumulation of waste or rejected materials.
- (b) Prior to the completion of the work, the contractor shall remove all rubbish from and around the premises and all tools, scaffolding equipment and material which are not part of permanent structures execute otherwise asked for or as provided under any other clauses of this contract the premises will be left in a manner fully satisfactory to the Engineer-in-Charge.

4.24 Communications and Notices by Contractors :-

All communications and/or notices pertaining to works and concerning matters, such as passing and approving of foundation, reinforcement and form work, measurements, mark outs etc shall not be addressed by the contractor to an officer

below the rank of Executive Engineer. All such notices communications etc shall be addressed in good time so as not to hold up the work.

4.25 No claim of compensation from Department :-

The Contractor shall not be entitled to claim any compensation from department for the loss suffered by him on account of delay by department in approval of design, drawing, approval to foundation etc.

4.26 Non Drawal of Agreement :-

In the event of tenderer withdrawing his/her offer before the expiry of the period of validity of offer or failing to execute the contract agreement, as required by conditions of Tender Document, he/she will not be entitled to tender for this work in case of recall, in addition to forfeiture of his/her earnest money, as per provision of the condition of Tender Document, If the tenderer has committed a similar defaults on an earlier occasion as well, his/her registration in the department may be suspended temporarily for a period of 6 months from such date as may be ordered by the competent authority which had registered him/her.

4.27 Default by the contractor :-

If the contractor shall neglect or fails to proceed with works with due diligence or he violates any of the provision of contract, the Executive Engineer may give the contractor a notice identifying deficiencies in performance and demanding corrective action. Such notice shall clearly state that it is given, under provisions of this clause. After such notice is given, the contractor shall not remove from the site, any plant, equipment and material. The Government shall have lien on all such plant, equipment and materials from the date of such notice, till the deficiencies have been corrected. If the contractor fails to take satisfactory corrective action within fourteen days after receipt of the notice the Executive Engineer will terminate the contract in whole or in part. In case the entire contract is terminated, the amount of security deposit together with the value of the work done but not paid for shall stand forfeited to Government.

The plant, equipment and materials held under lien shall then be at the disposal of the Govt.

The Executive Engineer may also take possession of the whole or part of the works ,site plant, equipment and materials brought or placed thereon and cause the whole or part of the works completed by utilising them through such agencies, at the cost of the contractor. In such cases the value of work done through such agencies shall be credited to the contractor at his contract prices. On completion of such work, if the expenses incurred for carrying out such works as certified by the Executive Engineer are in excess of the value of the work credited to the contractor, the contractor shall pay the difference to Government. He shall also be liable for the liquidated damages under the contract.

The Executive Engineer may direct that a part or the whole of such plant, equipment and materials are to be removed from the site within a stipulated

period. If the contractor fails to do so, the Executive Engineer may cause them to be sold, holding the net proceeds of such sale to the credit of the contractor. After completion of the works and settlement of amount, the lien by the Government on the contractor's plant, equipment and balance of materials shall be released. Termination of the contract either in whole or in part shall be adequate authority for the Executive Engineer to demand discharge of the obligations from the guarantors of the security performance.

4.28 Action when the contractor becomes liable for levy of penalty :-

In any case in which under any clause or clauses of this contract, the contractor shall have rendered himself liable to pay compensation amounting to the whole of his security deposit (whether paid in one, sum or deducted by installments) or committed a breach of any of the terms contained in clause 4.27 or in the case of abandonment of the work owing to the serious illness or death of the contractor or any other cause, Engineer-in-Charge on behalf of the Governor of Chhattisgarh shall have power to adopt anyone of the following course, as he may deem best suited to the interest of Government.

4.28.1 To rescind the contract (of which rescission notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence) and in which case the security deposit of the contractor shall stand forfeited and be absolutely at the disposal of Government.

4.28.2 To measure up the work of the contractor and to take such part thereof as shall be unexecuted out of his hands and to give it to another contractor to complete. In which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor, if the whole work had been executed by him (for the amount of which excess, the certificate in writing of the Engineer-in-Charge shall be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any money due to him by Government under the contract or otherwise, or from his security deposit or the proceeds of sale thereof, or a sufficient part thereof. If the work is carried out at lower rates, the contractor shall not be entitled for any refund on this account. Saving, if any, shall go to the Government. In the event of any of the above courses being adopted by Engineer-in-Charge, the contractor shall have no claim to compensation, for any loss sustained by him by reason of his having purchased or procured any material or entered in to any engagement or made any advances on account of, or with a view to the execution of the work or the performance of the contract. And in case the contract shall be rescinded under the provisions aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereof actually performed under this contract, unless and until the Sub-Divisional Officer / Engineer-in-Charge will have certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

4.29 Contractor remain liable to pay Compensation if action not taken under clause 4.28 :-

In any case in which any of the powers, conferred upon the Divisional Officer by **clause 4.27** hereof, shall have become exercisable and the same shall not be exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such power shall notwithstanding be exercisable in the event of any further case of default by the contractor for which by any clause or clauses hereof, he is declared liable to pay compensation amounting to the whole of his security deposit, and the liability of the contractor for past and future compensation shall remain unaffected.

4.30 Extension of Time :-

Time shall be considered as the essence of the contract. If, however, the failure of the contractor to complete the work as per the stipulated date referred to above arises for "**Force Majeure**" (as per clause 2.36) an appropriate extension of time will be given. The contractor shall request such extension within one month of the cause of such delay and in any case before expiry of the contract period.

4.31 The authorities competent to sanction extension of time shall be as follows :-

- (i) **Chief Engineer** -Up to 25 percent of the stipulated period of the contract or six months, whichever is less.
- (ii) **Engineer-in-Chief** -For the period more than that indicated in above.

4.32 Final Certificate :-

On completion of the work the contractor shall be furnished with a certificate by the Engineer- In-Charge of such completion, but no such certificate shall be given nor shall the work be considered to be complete until the contractor shall have remove from the premises on which the work shall be executed all scaffolding, surplus materials and rubbish and cleaned off the dirt from all wood work, doors, windows, walls, floors other parts of any building or structure in, upon or about which the work is to be executed or of which he may have had possession for the purpose of the execution thereof nor until the work shall have been measured by the Sub Divisional Officer, Executive Engineer (herein after called Engineer-in-Charge) whose measurement shall be binding and conclusive against the contractor. If the contractor shall fail to comply with the requirement of this clause such as removal of scaffolding, surplus materials and rubbish and ; cleaning off dirt, on or before the date fixed for the completion of work. .The Engineer-in-Charge may at the expense of the contractor remove such scaffolding, surplus material and rubbish and dispose off the same as he , thinks fit and clean off such dirt as aforesaid and the contractor shall forthwith pay the amount of all expenses so incurred and shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realised by the sale thereof.

4.33 Receipt to be signed by the partners or persons having authority to do so :-

Receipts for payments made on account of work when executed by a firm must also be signed by the several partners except where the Contractors are described in their tender as the firm in which case the receipt must be signed in the name of the firm by one of the partners or by some other persons having authority to give effectual receipts for the firm.

4.34 Works to be executed in accordance with Specifications, Drawings, Orders, Etc. :-

The contractor shall execute the whole work and every part of the work upto the minimum dimensions required as per approved design, drawing and specification in the most substantial and workmen like manner and both as regards materials and otherwise in every respect. The contractor shall also confirm exactly, fully and faithfully to the designs, drawings and instructions in writing relating to the work signed by the Engineer-in-Charge and lodged in his office, and to which the contractor shall be entitled to have access at such office or on the site of the work for the purpose of inspection during office hours, and the contractor shall if he so requires, be entitled at his own expense to make or cause to be made copies of specifications and of all such designs, drawings and instructions as aforesaid.

4.35 Alterations in Specifications and Designs :-

The Engineer-in-Charge shall have power to make any alterations in, or omissions from, addition to, or substitutions for the original specifications and approved drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work and the contractor shall be bound to carry out the work in accordance with any instruction which may be given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall not invalidate the contract and any altered, additional or substituted work which the contractor may be directed to do in the manner above specified as part of the work, shall be carried out by the contractor on the same conditions, in all respects on which he agreed to do the main work and the same tendered cost

The payment of quantities for each item of sanctioned estimate shall be regulated as under :-

- (a) For completion of the item when up to 90% of the estimated Qty. is executed :- full payment.
- (b) For completion of the item when less than 90% of the estimated Qty. is required to be executed :- to the extent work executed.

Being a Lump-sum contract extra items/ enhanced quantities / financial claims on the department shall not be considered.

4.36 Time limit for unforeseen disputes :-

Any dispute should be brought to the notice of the Engineer-in-Charge in writing within one month of the occurrence of such disputes,

4.37 Action and Compensation payable in case of bad work :-

If at any time before security deposit is refunded to the contractor it shall appear to the Engineer-in-Charge or his subordinate in-Charge of the work that any work has been executed with unsound, imperfect or unskilled workmanship or with material of inferior quality or, that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for, or otherwise not in accordance with contract, it shall be lawful for the Engineer-in-Charge to intimate this fact in writing to the contractor, and then notwithstanding the fact that the work, materials or articles complained of may have been inadvertently passed certified and paid for the, contractor shall be bound forthwith to rectify or remove and reconstruct the work specified in whole or in part as the case may require, or if so required shall remove the materials or articles so specified and provide other proper and suitable materials or articles at his own proper charge and cost and in the event of his failing to do so within a period to be specified by the Engineer-in-Charge in the written intimation aforesaid, the contractor shall be liable to pay compensation at, the rate of one percent on the amount of the estimate for every day not exceeding ten days during which the failure so continues and in the case of any such failure, the Engineer-in-Charge may rectify or remove and re-execute the work or remove and replace the materials or articles complained of as the case may be at the risk and expense in all respect of the contractor. Should the Engineer-in-Charge consider that any such inferior work or materials as described above may be accepted or made use of, it shall be within his discretion to accept the same after imposing penalty as decided by him.

4.38 Contractor liable for damage done and for imperfections for Two Irrigation Season after Certificate :-

If the contractor or his work people, or servants shall break, deface, injure or destroy any part of a building in which they may be working or any building, road, road kerbs, fences, enclosure, water pipe, cables, drains, electric or telephone posts or wires, trees, grass or gross land, or cultivated ground contiguous to the premises on which the work or any part of it is being executed, or any damage shall happen to the work while in progress, from any cause whatever, or any imperfections become apparent in it within twelve months after a certificate, final or otherwise of its completion shall have been given by the Engineer-in-Charge as aforesaid, the contractor shall make the same good at his own expense or in default the Engineer-in-Charge may cause the same to be made good by other workmen and deduct the expenses (of which the certificate of the Engineer-in-Charge shall be final) from any sum that may be then or at any time thereafter may become due to the contractor or from his security deposit or the proceeds of sale thereof or of sufficient portion thereof.

4.39 Refund of Security Deposit :-

The security deposit of the contractor shall not be refunded before the expiry of 24(twenty four) months after issue of the certificate, final or otherwise of completion of the work or else, prior permission of the Government of Chhattisgarh Water Resources Department shall be obtained and in no case it shall be refunded before the successful commissioning, trial and running & maintenance of the complete system.

4.40 Works to be open for Inspection :-

All works, under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of the Engineer-in-Charge and his Sub ordinates and the contractor shall at all times during the usual working hours and at all other times at which reasonable notice of the intention of Engineer-in-Charge or his subordinates to visit the work shall have been given to the contractor either he himself be present to receive orders and instructions, or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.

4.41 Notice to be given before work is covered up :-

The contractor shall give not less than five days notice in writing to the Engineer-in-Charge or his subordinate in-charge 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 be taken before the same is so covered up or placed beyond the reach of measurement, any work without the consent in writing of the Engineer-in-Charge or 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 the contractor's expense or in default thereof, no payment or allowance shall be made for such work or materials with which the same was executed.

4.42 Contractor to supply Plant, Ladder, Scaffolding etc. :-

The contractor shall supply at his own cost materials (except such special materials if any, as may in accordance with the contract be supplied from the Engineer-in-Charge's stores), plant, tools appliances, implements, ladders, cordage, tackle, scaffolding and temporary works requisite for the proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirement of the Engineer-in-Charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials necessary for the purpose of setting out works and counting, " weighing & assisting in the measurement or examinations

at any time and from time to time of the work or materials. Failing his so doing.. the same may be provided by the Engineer-in-Charge at the expense of the contractor and the expenses may be deducted from any money due to the contractor under the contract from his security deposit or the proceeds of sale thereof, or of a sufficient portion thereof. Contractor is liable for damages arising from non provisions of light, fencing etc. The contractor shall also provide at his own cost, except when the contact specially provided otherwise and except for payment due under clause 4.28 all necessary fencing and lights required protect the public from accidents, and shall be bound to bear the expenses or defense of every suit, action or other proceedings of law that may be bought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and costs which may be awarded in any such suit, action or proceedings, to any such persons or which may , with the consent of the contractor be paid to compromise any claim by any such person.

4.43 Compensation under section 12, sub -section (1) of the Workmen's compensation Act, 1923 :-

In every use in which by virtue of the provisions of section 12, subsection (1) on the Workmen's compensation Act 1923, Government are obligate to pay any compensation to a workmen employed by the contractor in execution of the works, Government will recover from the contractor the amount of the compensation so paid and without prejudice to the right of Government under section 12, subsection (2) of the said act. Government shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by the Government to the contractor whether under this contract or otherwise. Government shall not be bound to contest any claim made against them under section 12, subsection (1) of the said act, except on the written request of the contractor and upon his giving to Government, full security for all cost for which Government might become liable in consequence of contesting such claim.

4.44 Labour Regulations :-

4.44.1 (a) Labour below the age of twelve years :-

No labour below the age of twelve years shall be employed on the work.

4.44.1 (b) Employment of Labour :-

The contractor should as much as possible employ the local labour for the said work.

4.44.2 The contractor shall at his own expense provide or arrange for the provision of footwear for labours doing cement mixing work which the contractor has undertaken to execute under this contract to the satisfaction of the Engineer-in-Charge and on his failure to do so, the Government shall provide the same to such labourers and recover the cost from the bill due to the contractor.

4.44.3 The contractor shall submit by the 4th and 19th of every month to the Engineer-in-Charge a true statement in respect of the second half of the preceding month and the first half of the current month respectively

showing (1) The number of labourers employed by him on the work (2) Their working hours, (3) The wages paid to them and (4) The accident that occurred during the said fortnight stating the circumstances under which they occurred and the extent of damages and injury caused by them failing which the contractor shall be liable to pay to the Government a sum not exceeding Rs 50/- for each default or materially incorrect statement. The decision of the Executive Engineer shall be final in deducting from any bill due to the contractor the amount levied as final in this behalf.

- 4.44.4** In respect of all labourers directly or indirectly employed in the works for the performance of the contractor's part of this agreement, the contractor shall comply with or cause to be complied with all the rules framed by the Government from time to time for the protection of health and sanitary arrangements for worker employed by the Water Resources Department and its contractors.

4.45 Changes in the Constitution of Firm :-

In the case of tender by Partners any changes in the constitution of the firm shall be forthwith notified by the contractor to the Engineer-in-Charge, for his information.

4.46 Works to be executed under the direction of Executive Engineer / Superintending Engineer :-

All works to be executed under the contract, shall be executed under the direction and subject to the approval in all respect of the Executive Engineer /Superintending Engineer of the Division/Circle for the time being, who shall be entitled to direct at what point or points and in what manner they are to be commenced and from time to time carried out.

4.47 Settlement of claims and disputes :-

- 4.47.1** Except where otherwise specified in the contract, for claims valued less than Rs. 50,000 /- the decision of the Superintending Engineer of the circle or any Superintending Engineer authorised by the Chief Engineer for his jurisdiction for the time being in respect of all questions & disputes relating to the meaning of the specifications, designs, drawings and instructions herein before mentioned and as to the quality of workmanship or material used on the work or as to any other question, claim, right, matter or thing whatsoever, in any way arising out of or relating to the contractor, designs, drawings, specifications, estimates, instructions, orders or those conditions or otherwise concerning the work of execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be final, provided that the Superintending Engineer before giving his decision in writing In the matter gives an opportunity of being heard to the parties to contract.

If any party of the contract is dissatisfied with the final decision of the Superintending Engineer in respect of any matter he may within 28 days

after receiving notice of such decision, give notice in writing to the Superintending Engineer requiring that the matter may be referred to Arbitration and furnishing details particulars of the dispute or difference and specifying clearly the points at issue. If any party fails to give such notice within the period of 28 days as stipulated above, the decision of the Superintending Engineer already given shall be conclusive final and binding on all the parties.

In case arbitration is to be held, it shall be effected by the Chief Engineer whose decision shall be conclusive ,final and binding on all the parties.

If the work under the contract has not been completed when a dispute is referred to arbitration, work shall continue during the arbitration proceedings if it is reasonably possible and no payment due to contractor should be withheld on account of Arbitration Proceedings unless it is required by the Arbitrator.

4.47.2 Except where otherwise specified in the contract, for the claim valued at Rs. 50,000/- or more the decision of the Chief Engineer for the time being in respect of all questions and disputes relating to the meaning of the specifications, designs, drawings, and instructions hereto before mentioned and as to the quality of workmanship or materials used on the work or as to any other question ,claim, right, matter of thing whatsoever, in any way arising out of, relating to the contract, designs, drawings, specifications, estimates, instructions, orders of those conditions or otherwise concerning the work of execution of failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be final, provided that the Chief Engineer shall be before giving his decisions in writing in the matter gives and opportunity of being heard to the parties to the contract.

If any party to the contract is dissatisfied with the final decision of the Chief Engineer in respect of any matter he may within 28 days after receiving notice of such decision may refer such dispute to the Arbitrator as authorised by the Chhattisgarh Govt.

4.48 Action where no specifications :-

In the case of any clause of work of which there is no such specifications as is mentioned in rule vide clause 2.1 such work shall be carried out in accordance with the specifications approved by Superintending Engineer/Chief Engineer for application to works in the district, and in the events of there being no such specifications , then in such case, the work shall be carried out in all respect in accordance with the instructions and requirement of the Engineer-in-Charge.

4.49 Definition of work :-

The expression "works" or "work" where used in these conditions shall unless there be something either in the subject or context repugnant to such construction, be constructed and taken to mean the works by or by virtue of the contract,

contracted to be executed whether temporary or permanent and whether original altered substituted or additional.

4.50 ROYALTY CHARGES :- THE ROYALTY CHARGES FOR THE MATERIAL SHALL BE PAID BY THE CONTRACTOR AS PER RULES, WHICH WILL NOT BE REFUNDABLE TO CONTRACTOR. CONTRACTOR SHALL HAVE TO PRODUCE RECEIPTS ON THIS ACCOUNT.

4.51 Penalty for breach of contract :-

On the breach of any terms or conditions of this contract by the contractor, the said Governor shall be entitled to forfeit the security deposit or the balance thereof that may at the time be remaining, and to realise and retain same as damages and compensation for the said breach, but without prejudice to the right of the said Governor to recover any further sums as damages from any sums due to or which may become due to the contractor by Government or otherwise howsoever.

4.52 Recovery of dues from the Contractor :-

Whenever any claim against the contractor for the payment of a sum of money arises out of or under the contract, Government shall be entitled to recover such sum by appropriating, in part or whole, the security deposit of the contractor and to sell any Government promissory notes etc. forming the whole or part of such security. In the event of the security being insufficient or if no security has been taken from the contractor, then the balance or the total sum recoverable, as the case may be, shall be deducted from any sum then due or which at any time thereafter may become due to the contractor under or any other contract with Government. Should this sum be not sufficient to cover the full amount recoverable from the contractor then it shall be recoverable from him as an arrears of land revenue.

4.53 Audit and Technical Examinations :-

Government shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstracts etc. to be made after payment of the final bill and if as a result of such audit and technical examinations any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed by him to have been done by him under the contract and found not to have been executed, the contractor shall have liable to refund the amount of overpayment and it shall be lawful for Government to recover the same from him in the manner prescribed in sub-clause 4.47 of this clause and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by Government to the contractor.

Provided that Government shall not be entitled to recover any sum overpaid, nor the contractor shall be entitled to payment of any sum paid short where such payment has been agreed upon between the Superintending Engineer

or Executive Engineer on the one hand and the contractor on the other hand, under any term of the contract permitting payment for work after assessment by the Superintending Engineer or the Executive Engineer

4.54 Permission for Crossing NH/SH/Roads/Railway Lines :-

The works of the Canal systems is likely to have several crossings for National Highway, State\Highway, Other Roads etc. and as such necessary letter to grant the permission for crossing those premises shall be issued to respective authorities by the Engineer-in-Charge .However the contractors will have to keep the follow-up and obtain timely clearance from the concerned authorities. Costs of those crossing are included in the tender.

4.55 Use of Site

- a) All areas of operation including those of his staff and labour colonies in case handed over to the Contractor shall be cleared and handed over back in good condition to the Engineer-in-Charge except the areas under works constructed the Contractor shall make good to the satisfaction of the Engineer-in-Charge any damage on alterations made to areas which he has to hand over back or to other property or land handed over to him for the purpose of this work.
- b) The vegetation and forest is noticeable in project area. The Contractor should take utmost care for the preservation of this vegetation and forest. Any damage in this vegetation and forest will have to be compensated by the contractor and decision by the Engineer-in-Charge will be final and binding on Contractor.

4.56 Purchase of Cement, steel and other materials

- 4.56.1** Excavated rock and steel of various diameters are available with the department which may be used by the contractor for construction work under this contract. The material shall be issued to the contractor at the rates indicated in the Annexure – I
- 4.56.2** Cement required for the work will be purchased by the contractor at his own cost. No advance payment/secured advance will be made by the department for this article.
- 4.56.3** The contractor will purchase cement from the cement factory whose production capacity is more than 450 M.T. per day and submit test report. The department may also get the test report from the authorised laboratory at contractor's cost. The contractor shall produce proof of purchase of cement from the cement factories, the purchase bill supported by delivery challan and excise gate pass, shall constitute adequate proof of purchase.
- 4.56.4** The contractor will purchase steel of IS specification and will submit test report and proof of dispatch. The department may also get the test report from the authorised laboratory at contractor's cost. The department will make no advance payment/secured advance for this article.
- 4.56.5** Cement shall be stored in such a way as to allow the removal and use of cement in chronological order of receipt i.e. first received being first used.

4.57 Recovery of advance :-

The recovery of the advance granted under clauses along with interest shall be made from the running bills in equal installments, equal to the total number of months of the time left for the completion of contract minus 2 i.e. the advance will be recovered from the first running bill, after the issue of advance and shall be fully recovered from the last but one running bill.

4.58 Hire of Construction Equipment's

Construction equipments owned by the department if available and can be given on hire conveniently will be made available on specific request of the contractor at rate that will be prescribed by the department from time to time .Super charges will also be levied prescribed by the department from time to time. The contractor shall execute the agreement bond as prescribed by the department and shall agree to the specific rates of hire and supervision charges in force on the day of transaction in writing before he takes machinery out of the department yard. (As per annexure -"H")

4.59 Access to the Contractor's Books

Whenever it is considered necessary by the Engineer-in-Charge to ascertain the actual cost of execution of any particular item of work or supply of plant or materials he shall direct the contractor to produce the relevant documents, such as pay-rolls ,records of personnel, invoices of materials and any other data and documents relevant to the item or necessary to determine its cost etc. and the contractor shall when so required furnish information, pertaining to the aforesaid items in the mode and manner that may be specified.

4.60 Access to site and Work and Co-operation with Other Contractor

The Engineer-in-Charge if he considers fit from time to time enter on any lands which may be in the possession of the contractor under the - contract for the purpose of executing any works not included in the contract and may execute such works not included in this contract by agents or by other contractors at this option and the contractor shall in accordance with the requirements of Engineer-in-Charge afford all reasonable facilities for execution of the works including occupation of lands by structures or otherwise to any other contractor employed by the department and his workmen or for the workmen of the department who may be employed in the execution on or near the, site of work not included in the contract or of any contract in connection with or specially to the works and in default the contractor shall be liable to the department for any delay or expenses incurred by reason of such default the contractor shall not however on account of any such modified new or extra work executed by or for the sake of the Department be entitled to claim relief from the obligation to execute the works the contractor shall also co-operate with other contractor with all fairness and mutual understanding and use the common facilities like access roads to quarries, water supply arrangements etc.

The Contractor shall also not cause advertently or inadvertently any obstruction or impediments in the progress of the other work being executed by Department or through other agencies. In the event of dispute regarding the claim the responsibility, liabilities etc. in respect of such facilities, the decision of the Engineer-in-Charge shall be final.

4.61 Liability for accidents to persons

It shall be Contractor's responsibility to protect against accidents on the worksite. He shall indemnify against any claims for damage to the property, injury to workers or any other persons, deaths etc. to the Engineer-in-Charge.

On the occurrence of an accident resulting in death or which is so serious as to be likely to result in death the Contractor shall within 24 hours report in writing to the Engineer-in-Charge, the facts stating clearly about the circumstances in which accident has occurred and the subsequent action taken. Other minor accidents causing minor injuries and loss to property should be communicated in writing, promptly to the Engineer-in-Charge. In all cases the Contractor shall indemnify the department against the losses of damage resulting directly or indirectly from the Contractor's failure to report in the manner aforesaid this includes penalties of fines if any, payable by the Government as a consequences of failure to give notice under the Workmen compensation Act of failure to conform to the provisions of the said Act in regard to such accidents.

In the event of accident in respect of which compensation may become payable under the workmen compensation Act VIII Of 1923 including all subsequent modifications thereof. Engineer-in-Charge may retain the sums of money as may in the opinion of Engineer-in-Charge be sufficient to meet such liability out of the amounts payable to the Contractor. These sums shall be recovered from the immediate payment due to the Contractor in one installment or in more than one installment. The decision of the Engineer-in-Charge regarding this shall be final and binding on the Contractor. On receipt of award from the Labour Commissioner the balance amount shall be reimbursed to or recovered from the Contractor.

It should be noted that through the department of Water. Resources is a principal employer, the complete responsibility of compensation should be on the Contractor.

4.62 Jurisdiction of court for disputes

Disputes if any arising out of this contract shall be subject to the Jurisdiction of the High Court of Chhattisgarh, Bilaspur.

4.63 Notice to the Contractor to start work

"Your contract for the.....
has been
 accepted byon behalf of
 the Governor of Chhattisgarh on theday
 of.....20..... and you are hereby ordered to commence the work".

Executive Engineer

4.64 The notice to the Contractor (s) to start work for the day of 20as issued, vide this office memorandum no.dated the

Executive Engineer

**COMPLETION CERTIFICATE
PART I 'CONSTRUCTION'**

4.65 In pursuance of clause 4.33 of the agreement in "Form F", dated thebetween the contractor Shri and the **Governor of Chhattisgarh**; it is hereby certified that the contractor has duly completed the execution of the work undertaken by him there under, on the day of except post construction work as specified in page 7.

Executive Engineer

**COMPLETION CERTIFICATE
PART II 'OPERATION & MAINTENANCE'**

In pursuance of clause 4.33 of the agreement in "**Form F**", dated
The between the contractor Shri
.....and the **Governor of Chhattisgarh**, it is hereby certified that the contractor has duly completed the execution of the work undertaken by him hereunder, on theday of ,20 the execution of the work. and all post construction activities including irrigation of command area for 2 years.

Executive Engineer

PAYMENT SCHEDULE - ANNEXURE – F

Subject : -

S. No.	Particulars	Amount In Rs Lacs	Percentage Of Bid Amount
1			
2			
3			
4			

Annexure – F- 1

Subject :-

S. No.	Particulars	Percentage of Bid Amount
1		
2		
3		
4		

Annexure – G – 1**Proposed key Dates**

Subject :

S. No.	Particulars	Date in figure & words
1		
2		
3		
4		

APPENDIX 2.18-A

(See Paragraph 2.091)

FORM F - TENDER FOR A LUMPSUM CONTRACT FOR PWD AND PHED**I / We do hereby tender to execute the whole of the work described in the****Drawing Nos:** _____**and according to the annexed specifications as signed by:** _____**and dated:** _____**for the sum of Rs.:** _____**Rupees :**(_____)

and should this tender be accepted . I/We do hereby agree and bind myself/ourselves to abide by and fulfill all the conditions annexed to the said specification or in default thereof to forfeit and pay to the Governor of C. G. the penalties of sums of money mentioned in the said conditions, viz:

Dated:

Tenderer's Signature

Address

.....

Witness:

Address:

The above tender is hereby accepted by me on behalf of the Governor of Chhattisgarh.

The _____ 200

(Designation)

SIGNATURE OF**AUTHORITY BY WHOM****THE TENDER IS ACCEPTED**_____
To be expressed in words and figures.

CHAPTER - I CONDITION OF CONTRACT

- 1.1:** The person whose tender may be accepted (hereinafter called the contractors which expression shall unless excluded by or repugnant to the context include his heirs executors, administrators representatives and assigns) shall permit Government at the time of making any payments to him for the value of work done under the contract to deduct the security deposit as under.

The Security Deposit to be taken for the due performance of the contract under the terms & conditions printed on the tender form will be the earnest money plus a deduction of 5 percent from the payment made in the running bills, till the two together amount to 5 percent of the cost of work put to tender or 5 percent of the cost of the works executed when the same exceeds the cost of work put to tender

- 1.2** The Contractors is /are to provide everything of every sort and kind (with the exception noted in the schedule attached) which may be necessary and requisite for the due and proper execution of the several works included in the contract according to the true intent and meaning of the drawings and specifications taken together, which are to be signed by the Executive Engineer P.W.D. (Bridge Const.) Division herein after called the E.E.) and the Contractor (s) whether the same may not be particularly described in the specifications or shown on the drawings, provided that the same are reasonably and obviously to be inferred there from and in case of any discrepancy between the drawings and the specifications the E.E. is to be decide which shall be follows :

- 1.2A:** The Contractor (s) is/are to set out the whole of the works in conjunction with an officer, to be deputed by the E.E. and during the progress of the works, to amend on the requisition of the E.E., any errors which may arise therein and provide all the necessary labours, and materials for so doing. The Contractor(s) is/are to provide all plant, labour and materials (with the exceptions noted in the schedule attached) which may be necessary and requisite for the works. All the materials and workmanship are to be the best of their respective kinds. The Contractor(s) is/are to leave the works in all aspects clean and perfect at the completion thereof.

- 1.2B:** In respect of all bearings, hinges or similar parts intended for use in the superstructure of any bridge, the Contractor shall, whenever required, in the course of manufacture, arrange and afford all facilities for the purpose of inspection and test of all or any of these parts and the material use therein to any officer of the Directorate of Inspection of the Ministry of works, production and supply of the Governor of India and such bearings, hinges or similar parts shall not be used in the superstructure of any bridge except on production of a certificate of acceptance thereof from the Directorate of Inspection. All inspection charges shall be payable by the Contractor.

- 1.3:** Complete copies of the drawings and specification signed by the E.E. are to be furnished by him to the Contractor(s) for his/their own use, and the same or copies thereof are to be kept on buildings in charge of the Contractor(s) agent who is to be constantly kept on the ground by the Contractor(s) and to whom the instructions can be given by the E.E. The Contractor(s) is/are not to sublet the works or any part thereof without the consent in writing of the E.E.

- 1.4:** The E.E. is to have at all times access to the works which are to be entirely under his control He may require the Contractor(s) to dismiss any person in the Contractor (s) employ upon the works who may be incompetent or misconduct himself and the Contractor (s) is/are forthwith to comply with such requirements.

- 1.5:** The Contractor (s) is/are not be vary or deviate from the drawings or specification or execute any extra work of any kind whatsoever unless upon the authority of E.E. to be sufficiently shown by any order in writing by any plan or drawings expressly given and signed by him as extra or variation or by any subsequent written approval signed by him. In cases of daily labour all vouchers for the same are to be delivered to the E.E. or the officers-in-charge at least during the week following that in which the workmen have been done and only such day work is to be allowed for as such as may have been authorised by the E.E. to be so done unless the work cannot from its character be properly measured and valued. The drawings in respect of which this contract is drawn up provide for a minimum depth of foundations for good soil, Any Extra depth will be measured as an extra when the foundation trenches have been opened up and will be paid for in addition to the sum contracted for the completed work.
- 1.6:** Any authority given by the E.E. for any alterations or additions in or to work is not to vitiate the contract but all additions in or to work is not to vitiate the contract but all additions, omissions or variations made in carrying out the works are to be measured and valued and certified by the E.E. and added to or deducted from the amount of the contract, as the case may be, at rates in force in the C.E.P.W.D. (Bridge Const. Zone). In such cases in which rates do not exist, the superintending Engineer will fix the rates to be paid.
- 1.7:** All work on materials brought and left upon the ground by the contractor(s) or his/their orders for the purpose of forming part of the works are to be considered to be the property of the Governor of Chhattisgarh and the same are not to be removed or taken any by the Contractor's or any other person without the special license and consent in writing of the E.E., but the Governor of C.G. is not be in any way answerable for any loss or damage which may happen to or in respect of any such work or materials either by the same being lost or stolen or injured by weather or otherwise.
- 1.8:** The E.E. has full power to require the removal from the promises of all materials which, in his opinion, are not in accordance with the specification and in case of default the E.E. is to be at liberty to employ other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The E.E. is also to have full power to require other proper materials to be substituted and in case of default the E.E. may cause the same to be supplied and all costs which any attend such removal and substitution or to be borne by the Contractor (s).
- 1.9:** If in the opinion of the E.E. any of the works, are executed with improper materials or defective workmanship, the Contractor(s) is/are when required by the E.E. forthwith to re-execute the same and to substitute proper materials and workmanship and in case of default of the Contractor(s) in so doing within a week the E.E. is to have full power to employ other person to re-executed the work and the cost thereof shall be borne by the Contractor(s).
- 1.10:** Any Defect's shrinkage of other faults which, may appear within performance period from the completion of the work arising out of defective or improper materials or workmanship or by any other reason are upon the direction of the E.E. to be amended and made good by the Contractor (s) at his / their own cost unless the E.E. shall decide that he/they ought to be paid for the same and in case of default the Governor of C.G. may recover from the Contractor (s) the cost of making good the works as per note (13) of additional special conditions
- 1.11:** From the Commencement of the work to the completion of the same, they are to be under the contractor(s) charge. The Contractor (s) is/are to be held responsible for and to make good all injuries, damages and repairs occasioned or rendered necessary to the same by fire or other causes and they are to hold the Governor of C.G. harmless from any claims

for injuries to persons or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part Contractor(s) or of any one in his/their employ during the execution of the works.

- 1.12:** The E.E. is not have full power to send workmen upon the premises to execute fittings and other works not included in the Contract for whose operation Contractor (s) is/are to afford every reasonable facility during ordinary working hours, provided that such operation shall be carried on in such manner as not to impede the progress of the work included in the contract but the Contractor(s) is/are not to be responsible for any damage which may happen to or be occasioned by any such fittings or other works.
- 1.13:** The works comprised in this tender are to be commenced immediately upon receipt of order of commencement given in writing by the E.E. The whole work, including all such addition and variations as aforesaid (but excluding such, if any, as may have been postponed by an order from the E.E.) shall be completed in every respect within _____ months from the reckoned date (The period will be reckoned from the 15 days after the date of Work order in case of completion period is up to six months and 30 days in case of completion period is more than six months The work shall throughout the stipulated period of contract be proceeded with all due diligence, keeping in view that time is the essence of the contract. The contractor shall be bound in all cases, in which the time allowed for any work exceeds one month, to complete $\frac{1}{8}^{\text{th}}$ of the whole work before $\frac{1}{4}^{\text{th}}$ of the whole time allowed under the contract has elapsed, $\frac{3}{8}^{\text{th}}$ of the work before $\frac{1}{2}$ of such time has elapsed and $\frac{3}{4}^{\text{th}}$ of the work before $\frac{3}{4}^{\text{th}}$ of such time has elapsed. In the event of the contractor failing to comply with the above conditions, the Executive Engineer shall levy on the contractor, as compensation an amount equal to: 0.5% (zero point five percent) of the value of work (contract sum) for each week of delay, provided that the total amount of compensation under the provision of the clause shall be limited to 6% (six percent) of the value of work. (Contract sum)

Provided further that if the contractor fails to achieve 30% (thirty percent) progress in $\frac{1}{2}$ (half) of original or validly extended period of time the contract shall stand terminated after due notice to the contractor and his contract finalised

If the contractor shall desire an extension of time for completion of work on the ground of his having been "UNAVOIDABLY" hindered in its execution or on any other ground, he must apply giving all and complete details of each of such hindrances or other causes in writing, to the Executive Engineer positively within 15 days of occurrence of such hindrance(s) and seek specific extension of time (period from.....to.....). If in the opinion of Executive Engineer, such reasonable grounds are shown, the Executive Engineer shall himself grant extension of time, if the extension of time sought by the contractor is for one month or 10% (ten percent) of the stipulated period of completion, whichever is more. If the extension of time sought is more than above period mentioned, then the Executive Engineer shall refer the case to the Superintending Engineer with his recommendation and only after his decision in this regard, the Executive Engineer shall sanction extension of such time as decided by the Superintending Engineer.

Once the Executive Engineer/Superintending Engineer has decided the case of extension of time with reference to the particular application of the contractor, it will not be competent for them to review/change such a decision later on. However, the Superintending Engineer and the Executive Engineer shall give the contractor an opportunity to be heard (orally and or in writing), before taking any final decision either of granting extension of time or permitting the contractor to complete the work by the delayed date or before refusing both.

Provided further where the Executive Engineer has recommended grant of extension of particular time of the contract or has refused to recommend extension of time but has recommended permitting the contractor for delayed completion, the contractor shall continue with the work till the final decision by Executive Engineer/Superintending Engineer.

Failure on the part of the contractor for not applying extension of time even within 30 days of the cause of such an hindrance, it shall be deemed that the contractor does not desire extension of time and that he has "Waived" his right if any, to claim extension of time for such cause of hindrance.

Once the Executive Engineer /Superintending Engineer has heard (oral and or in writing) the contractor on this subject matter of extension of time and if Executive Engineer/Superintending Engineer fails to communicate his decision within a period of 30 days of such hearing, it shall be deemed that the contractor has been granted extension of time for the period as applied by him. Provided that the Contractor (s) shall not be entitled to any extension of time in respect of the extra work involved in the extra depth of foundation mentioned clause 1.5.

1.13.1 Compensation Events for Consideration of extension of time without penalty :-

The following mutually agreed Compensation Events unless they are caused by the contractor would be applicable;

- (a) The Executive Engineer does not give access to a part of the site.
- (b) The Executive Engineer modifies the schedule of other contractor in a way, which affects the work of the contractor under the contract.
- (c) The Executive Engineer orders a delay or does not issue drawings, specification or instructions /decisions/approval required for execution of works on time.
- (d) The Executive Engineer instructs the contractor to uncover or to carry out additional tests upon work, which is then found to have no defects.
- (e) The Executive Engineer gives an instruction for additional work required for safety or other reasons.
- (f) The advance payment and or payment of running bills (complete in all respect) are delayed.
- (g) The Executive Engineer unreasonably delays issuing a Certificate of Completion
- (h) Other compensation events mentioned in contract if any

1.13.2 Incentive bonus: - Notwithstanding the provision contained in clause 1.13 above, if the contractor does not desire "Extension of Time" AND "WAIVES" his right to claim any extension of time on any ground whatsoever and yet - complete the contract (Excluding maintenance period if any) before the original time allowed for completion (as mentioned in the N.I.T) then and then only the contractor shall be entitled to and shall be paid "INCENTIVE BONUS". The Incentive Bonus shall be paid to the contractor at the rate of 0.25% (zero point two five percent) of the contract price per week of early completion subject to a maximum of 5% (five percent) of the contract price. Part of the week if more than 3 days shall be deemed to be one full week.

Note: - The contractor has to give an undertaking in writing that he has "WAIVED" all his RIGHT to claim/demand extension of time

1.14: Action when the work is left incomplete abandoned or delayed beyond the time limit permitted by the Executive Engineer: -

- (i) The Executive Engineer may terminate the contract if the contractor causes a fundamental breach of the contract.
- (ii) Fundamental breach of contract shall include, but not be limited to, the following: -
 - (a) The contractor stops work for four weeks, when no stoppage of work is shown on the current programme or the stoppage has not been authorised by the Executive Engineer.
 - (b) The Executive Engineer gives notice that failure to correct a particular defect is a fundamental breach of contract and the contractor fails to correct it within reasonable period of time determined by the Executive Engineer in the said notice.
 - (c) The contractor has delayed the completion of work by the number of weeks [12 (Twelve) weeks] for which the maximum amount of compensation of 6% of contract sum is exhausted.
 - (d) If the contractor has not completed at least thirty percent of the value of construction work required to be completed in half of the completion period (Including validly extended period if any).
 - (e) If the contractor fails to appoint the technical staff and if appointed do not function properly for 4 weeks even after due written notice by the Executive Engineer.
 - (f) If he violates labour laws.
 - (g) Any other deficiency which goes to the root of the contract Performance
- (iii) If the contract is terminated, the contractor shall stop work immediately, make the site safe and secure and leave the site as soon as reasonably possible.
- (iv) The Executive Engineer shall cause recording and checking of measurements of all items of work done (taking in to account quality and quantity of items actually executed) and prepare the final bill after adjusting all pervious outstanding dues. Such recording of measurements shall be done after due notice regarding time and date of recording measurement and directing the contractor to either remain present himself or his authorised representative so as to satisfy himself that the recording of measurement is just and proper. Failure on his parts either to attend and or refusing to acknowledge the measurement so recorded in the department measurement book, shall be at his sole risk and responsibility.

The Executive Engineer shall forfeit the earnest money and or security deposit and further recover/deduct/adjust a compensation @ 10% (ten percent) of the balance value of work left incomplete either from the bill, and or from available security/performance guarantee or shall be recovered as "Arrears of land revenue"

- 1.15:** The Contractor(s) shall be paid the running payment according to the schedule of running payment agreed to at the time of award the contract on the completion of each calendar commencing from the day of work order a sum of 90% of the total value of work done ___120 days___ since the last payment according to the certificate of the E.E. when the work shall be completed. The Contractor (s) is/are to be entitled to receive one moiety of the amount remaining due according to the best estimate of the same that can be made and the Contractor(s) is/are to be entitled to receive the balance of all moneys due or payable to him/them under or by virtue of the contract within six month from the completion of the works. Provided always that no final or other certificate is to cover or relieve the Contractor(s) from his/their liability under the provision of clause 1.10

whether or not be same be notified by the E.E. at the time or the subsequently to the granting of any such certificate.

- 1.16:** A certificate of the E.E. or an award of the referee hereinafter referred to as the case may be showing the final balance due or payable for the Contractor(s) is to be conclusive evidence of the works / having been duly completed and that the Contractor(s) is/are entitled to receive payment of the final balance but without prejudice to the liability of the Contractor(s) under provisions of clause 1.10.

- 1.17** **ARBITRATION CLAUSE:** Except as otherwise provided in this contract all question and dispute, relating to the meaning of the specifications designs, drawings and instructions herein before mentioned and as to thing whatsoever, in any way, arising out of or relating to the contract, designs, drawings, specifications, estimates, concerning the works, or the execution or failure to execute the same, whether arising during the progress of the works or after the completion abandonment thereof shall be referred to the Superintending Engineer shall give his written instructions and/or decisions within a period of 60 days of such request. This period can be extended by mutual consent of the parties.

Upon receipt of written instructions or decisions, the parties shall promptly proceed without delay to comply such instruction or decision, If the Superintending Engineer fails to give his instructions or decisions in writing within a period of 60 days or mutually agreed time after being requested or if the parties are not satisfied with the decision of the Superintending Engineer they may within 60 days refer and appeal to the Chief Engineer who shall afford an opportunity to the parties of being heard and to offer evidence in support of his appeal. The Chief Engineer will give his decision within 90 days. If any party is not satisfied with the decision of the Chief Engineer, he can, refer such dispute for arbitration governed as per "The CHHATTISGARH Madhyastham Abhikaran Adhiniyam".

- 1.18.:** If at any time before or after the commencement of the work, Governor of the Chhattisgarh shall for any reason whatsoever: -

- (a) Cause alterations, omissions or variations in the drawings and specifications involving any curtailment of works as originally contemplated; or
- (b) Not required the whole of the work as specified in the tender to be carried out.

The Contractor(s) shall have no claim to any payment or compensation whatsoever on account of any profit or advantage which he/they might have derived from the execution of the work in full as specified in the tender but which he/they did not derive in consequence of the curtailment of the works by reasons of alterations, omissions or variations or in consequence of the full amount of the work not having been carried out.

But the Contractor(s) shall be entitled to compensation for any loss sustained by him/them by reason of his/their having purchased or procured any materials or entered in to any engagements or made any advance to labour or taken any other preliminary or incidental measures on account of or with a view to the execution of the works or the performance of the contract.

- 1.19: DEATH OR PERMANENT INVALIDITY OF CONTRACTOR:** If the contractor is an individual or a proprietary concern, partnership concern, dies during the currency of the contract or becomes permanently incapacitated, where the surviving partners are only minors the contract shall be closed without levying any damages/compensation as provided for in clause 1.14 of the contract agreement.

However, if competent authority is satisfied about the competence of the surviving, then the competent authority shall enter into a fresh agreement for the remaining work strictly on the same terms and conditions, under which the contract was awarded

CHAPTER – II

DETAILED NOTICE INVITING LUMPSUM TENDERS

GOVERNMENT OF CHHATTISGARH PUBLIC WORKS DEPARTMENT AND PHED

Division: PWD BRIDGE CONSTRUCTION

Tender Notice No.:

Date of issue of N.I.T.:

Date of receipt of Tenders upto Office hours:

2.0 Work Particulars

Name of Work:

Outline Drawing Nos.: -

Length of bridge with returns:

Overall width:

Probable amount of contract:

Earnest Money:

Period of completion:

Excluding / including rainy season:

2.1: Sealed lumpsum tenders in form 'F' for the work mentioned in para 2.0 will be received by Registered post only from the contractors to whom the tender issued by the Superintending Engineer, P.W.D Bridge construction Circle, Raipur on _____ the _____ at the Office of the Superintending Engineer, P.W.D. Bridge Construction Circle, Raipur_____ and will be opened on the next working day at 11.30 A.M. The tenders may be based on the departmental design or tenderers own design.

2.1.1 Submission of Tender: Submission of Tender:- Tenderer should submit his tender on the terms and conditions as mentioned in NIT and agreement form. Tenderer is not suppose to mention any condition (s) any where in the tender document.

Conditional tenders are Liable for rejection.

The tenderer will submit his bid in two envelopes as under. It is mandatory to submit first and second envelope online:-

1st envelope "A" EMD details and Alternative drawing if any :-

This envelope shall contain details of EMD such as It's mode like N.S.C., Interest bearing securities Bank draft, Units of UTI etc. as provided under clause 2.5.1 of tender documents and alternate drawing if any.

However, EMD in appropriate shape as mentioned under clause 2.5.1 of the tender document along with hard copy of alternate drawing (If any) shall be submitted through Registered post/Speed post to the Superintending Engineer, PWD on or before the due date prescribed in NIT. along with copies of Commercial tax registration Financial Capacity certificate(not older then 12 months) live registration certificate and documents prescribed under rules and the same should reach in the office of the S.E.P.W.D. on or before the date prescribed in NIT upto 5.30 P.M. The earnest money is to be pledged in favour of Executive Engineer P.W.D.

2nd envelope "B" :- This envelope shall contain the financial bid in prescribed format and it shall invariably be submitted online on due date as mentioned in NIT.

The tenderer or his authorised representative is requested to attend a pre – bid meeting at the date, time and address as mentioned in NIT. The purpose of meeting will be to clarify issues and to answers questions on any matter that may be raised relating to the work. The tenderer is requested to submit his questions in writing/e-mail/Fax, so as to reach the Superintending Engineer three days before the meeting.

Before deadline for submission of tender, the Superintending Engineer may modify the tender document by issuing amendment. Any amendment thus issued shall be part of the tender document and shall be published on website.

2.1.2: Opening of Envelope 1 i.e. EMD along with other documents as provided under clause 2.1.1 will be opened on the due date as mentioned in the N.I.T.”.

2.1.3: Opening of Financial Bids :

After due verification of the EMD & other documents, financial bids of only those tenderer whose EMD is in appropriate mode and of amount as mentioned under clause 2.4.1 read with clause 2.5.1 of tender document will be opened online on the date mentioned in NIT.

Tenderer whose financial bid is accepted will be intimated by Fax/Registered letter/speed post as the case may be.

2.2: All over writings should be neatly scored out and rewritten and corrections should be duly attested prior to the submission of the tender.

If there is any difference between the amount in words and figures written in the tender forms by the contractor the lesser amount will be treated as valid. If the contractor is not ready to accept the amount to fixed in the above manner and declines to do the work, earnest money deposit of the contractor shall be forfeited.

2.3 Tender Document:

2.3.1.: Blank forms of tender can be obtained from the office of the Superintending Engineer, Bridge Construction Circle, Raipur__ on payment of Rs. _____ for each form and

the plans and specifications of the work may be seen and all other particulars as ascertained during office hours on any working day after the date on which the notice is affixed on the notice board of the office of the Superintending Engineer, P.W.D. Bridge Construction Circle, Raipur__on any working day during office hours up to _____.

2.3.2: The estimated figures of quantities and cost shown in the tender document are not guaranteed for contract but merely given as rough guidance.

2.3.3.: Each tenderer should carefully examine the drawing specification, special conditions and other particulars etc. and visit the site of works and fully satisfy and acquaint himself about the nature, location of the work, the surface condition, quality and quantity of materials required, the character of equipment and ancillaries needed preliminary to and during the execution of the work and general and local conditions which may affect the work or its cost.

2.4 Earnest Money:

2.4.1: No. tender will be, received, without a deposit of earnest money of Rs. _____ (in word) Rupees _____ in a separate sealed cover duly prescribed as cover "D" Earnest Money. The earnest money will be returned to the successful tenderer on the rejection of their tender will be retained from successful tenderer as part of security deposit.

2.4.2 The rate of earnest money to be submitted by the intending contractors will be as under.

Tender Value From - Up to	Percent
For tender up to Rs. 1.00 lakh	2 percent
For tender more than Rs. 1.00 lakh and up to Rs. 5.00 lakhs	1 percent subject to a minimum of Rs. 2000/-
For tenders more than Rs. 5.00 lakh and up to Rs. 2.0 crores	0.75 percent subject to a minimum of Rs 5,000/-
For tenders more than Rs. 2.00 crores	0.50 percent subject to a minimum of Rs.1.5 lakh and maximum of Rs. 5.00 lakhs

2.4.3.: In the event of tenderer withdrawing his/her offer before the expiry of the period of validity of offer or failing to execute the contract agreement as required by condition no. 2.10 of notice inviting tenders (NIT) he/she will not be entitled to tender for this work in case of recall in addition to forfeiture of his/her earnest money as per provisions of the conditions No. 2.34 & 2.10 of the N.I.T. as may be applicable. If the tenderer has committed a similar default on an earlier occasions as well, his/her registration in the department may be suspended temporarily for a period of 6 months from such date as may be ordered by the competent authority which has registered him/her.

2.5 Form of Earnest Money:

2.5.1.: Where the amount of earnest money to be deposited is more than Rs. 500/- and the tenderer proposes to pay it in cash he shall pay earnest money to be credit of Revenue Deposit on behalf of the executive Engineer. P.W.D. bridge Construction Division _____ in to a branch of the State bank of India or Government Treasury or Sub-Treasury within the jurisdiction of the Executive Engineer mentioned above and send/produce the challan to the Executive Engineer separately and it should not be kept in the cover containing tenders. If, however, the tenderer wishes to deposit the earnest money in any one of the following forms, he may do so and produce/send the same duly hypothecated to the Executive Engineer.

- 2.5.1. I:** Treasury Receipts.
- II:** National Savings Certificates.
- III:** Treasury Bonds.
- IV:** Approval interest bearing security (this includes C.G. State development Loans)
- V:** Government promissory Notes/National plan Loans
- VI:** Post Office Cash Certificates.
- VII:** 10 Years Treasury Saving Deposit Certificates.
- VIII:** 12 Years National Plan Saving Certificates.
- IX:** 10 Years Defense Deposit Certificates.
- X:** National Saving Certificate duly hypothecated in the man of Governor of C.G.
- XI:** All small Savings Securities and post office Savings Bank Accounts duly pledged to Government.
- XII:** Debentures of C.G. Housing Board.
- XIII:** Bank Drafts of the State Bank of India or Scheduled Banks in case of tendered of other States.
- XIV:** Units of Unit Trust of India.
- XV:** Bank Drafts issued by big Urban Banks whose working capital exceeds Rs. 5.00 crores and by A.B. and C class Central/Co. operative Banks / Non- Scheduled States Co-operative Banks subject to the condition that the drafts are encashed by the accepting authority as soon as they are received and the contract are allotted only after the encashment of drafts as per M.P.F.D. No. F/3/18/77/8/5 (iv) dated 13/2/1973.
- 2.5.2:** The earnest money in one of the prescribed forms should be produced/sent separately and not kept in the cover containing the tender and if the earnest money is not in accordance with the prescribed mode, the tenders would be returned unopened to the tenderer.
- 2.6:** The intending tenderers from other States may remit the Earnest money in the form of Bank Draft of the State Bank of India or any other Scheduled Bank to the Executive Engineer concerned.
- 2.7:** Earnest money which has been deposited for a particular work will not ordinarily be adjusted towards the earnest money for another work, but if tender of a contractor for a work in the same division has been rejected and the earnest money has not been refunded to him to some reason it may be so adjusted by the Executive Engineer.
- 2.8:** The Security Deposit shall be 5 percent of the amount of contracts.

- 2.9:** The authority competent to accept a tender reserves the right of accepting the tender for the whole work or for distinct part of it or of distributing the work between one or more tenderers.
- 2.10:** A financial capacity certificate or attested photocopy thereof from any schedule bank along with the application for the tender papers be submitted which should not be older than 12 months from the date of application. Amount of financial capacity to be furnished shall be at least 15 (fifteen)% of amount put to tender
The financial capacity certificate shall have to be in the following format:
CERTIFICATE
(On the letter head of the Bank)
On the basis of transactions/turn over in the account of _____
(Name and Address)
We are of the opinion that his financial capacity is to the extent of (both figures & words) Rs. (in words) This is without any prejudice and responsibility on our part.
Place: _____ Br. Manager
Date: _____ With seal of Bank
- 2.11:** The submission of a tender by a contractor implies that he has read the notice conditions of tender and contract and has made himself aware of the scope and specifications of the work to be done and has been the quarries with their approach, sites of work etc, and satisfied himself regarding the suitability of the materials at the quarries. The responsibility of opening of new quarries and construction and maintenance of approaches thereto shall lie wholly with the contractor.
- 2.12: Subletting of works:** - The contract may be rescinded and security deposit forfeited, for subletting the work beyond permissible limits as mentioned below or if contractor becomes insolvent: -

The contract shall not be assigned or sublet without prior sanction of the authority who has accepted the tender in writing. And if the contractor assign or sublet his contract, for more than permissible limits as mentioned below or attempt to do so, or become insolvent commence any insolvency proceedings or make any composition with his creditors, or attempt to do so or if any gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly be given, promised or offered by the contractor, or any of his servants or agents or to any public officer or person in the employ of Government in any 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 Executive Engineer may there upon by notice in writing rescind the contract, and the S.D. of the contractor shall there upon stand forfeited and be absolutely at the disposal of Government and the same consequences shall ensue as if the contract had been rescinded under clause 1.14 thereof, and in addition the contractor shall not be entitled to recover or be paid for any work thereto for actually performed under the contract. Any such assignment/subletting within the limit of 25% by the authority who has accepted the tenders OR 50 % by the next higher authority accepting the tender or Govt. as the case may be, shall not diminish or dilute the liability/ responsibility of the contractor.

If the contractor gets item / items of work executed on a task rate basis with / without materials, this shall not amount to subletting of the contract.

Any subcontracted work, done in Chhattisgarh state with prior approval of competent authority, such subcontractor will also get the credit for work towards his experience.

- 2.13:** All the conditions of the tender notice will be binding on the contractor and will form part of the agreement to be executed by the contractor in addition to the conditions of contract in the prescribed form and special conditions of contract and those accepted as common conditions during negotiations.
- 2.14:** The tenders will be opened at the time and place stated in para 2.1 by the superintending Engineer in the presence of the tenderer or their duly authorised agents who may choose to attend. The Superintending Engineer as in para 2.1 unavoidable circumstance may depute another officer In his absence to receive and open tenders on his behalf.
- 2.15:** The S.F./E.E. does not bind myself to accept or to recommend for the acceptance of the Chief Engineer or higher authority the lowest or any tender.

2.16 Taxes Royalty etc.:

- 2.16.1 Taxes:** The rate quoted by the Contractor shall be deemed to be inclusive of the sales and other levies, duties, royalties, cess, toll, taxes of Central and State Governments, local bodies and authorities that the Contractor will have to pay for the performance of this Contract. The Govt. will perform such duties in regard to the deduction of such taxes at source as per applicable law. **However if “Service Tax” and cess on service tax or any other “New Tax” (not increase or decrease in existing tax, duties, surcharge, except royalty on minor mineral) is levied on the contractor either by Central Govt. or State Govt, then the Executive Engineer shall reimburse the “Service Tax” and cess on service tax and or “New Tax” amount; on submission of proof of such payments by the contractor.**

2.16.2 Royalty on Minor Minerals

The contractor shall pay all quarry, Royalty charges etc. If the contractor fails to produce the royalty clearance certificate from concerned department then the Executive Engineer shall deduct the royalty charges from his bills and keep in deposit head, which shall be refunded to the contractor on production of royalty clearance certificate from the concerned department. If he fails to produce the royalty clearance certificate with in 30 days of submission of final bill, then royalty charges which was keep under deposit head by the Executive Engineer shall be deposited to the concerned department and his final bill payment shall be released

Any change in the royalty rates of minor minerals notified by the state government, after the date of submission of financial offer by the bidder/contractor, then this increase/decrease in the rates shall be reimbursed/deducted on actual basis.

- 2.16.3:** Income tax at the rate of 2% or such other percentage as may be fixed by income tax department from time to time from any sum payable to the Contractor shall at the time of credit of such sum or at the time of payment to the contractor by cash, cheque or draft or any other mode shall be deducted at the source from the running, final or any type of payment for this contract as per section 194 of income tax Act. 1961.
- 2.16.4:** It is open to the contractor or the sub contractor as the case may be to make an application to the Income Tax officer concerned and obtain from him a certificate authorizing the payer to deduct tax at such lower rate or deduct no tax as may be appropriate to his case Such certificate will be valid for the period specified therein unless it is cancelled by the income Tax Officer earlier.
- 2.17 Model Rules for water supply, Sanitation in Labour Camps:** The contractor will be bound to follow the Chhattisgarh model rules relating to layout of water supply and sanitation in labour camps (Vide Annexure-A)

- 2.18 Fair wages to Labourers:** The Contractor shall pay not less than fair wages to labourers engaged by him on the work (Copy of rules enclosed vide Annexure-B)
- 2.19 Right to take up work Departmentally or to award on contract:** The Engineer – in – Charge reserves the right to take up departmental work or to award works on contract in the vicinity without prejudice to the terms of contract.
- 2.20 Issue of Materials by the Department:** The following Materials will be supplied by the Department :-

S.No.	Name of Article	Unit	Rate	Place of Delivery
No, Materials shall be supplied by the Department.				

So for as supply of cement and steel (Mild & H.Y.S.D. Bars) and other materials is concerned these or to be arranged by the contractor himself at his own cost and the conditions given in the annexure - H shall Prevail, The Contractor shall establish a laboratory near the site for testing.

- 2.21 Income tax Clearance Certificate:** A tenderer applying for tender copies for work exceeding Rs. 2.00 lakhs shall have to submit as Income Tax clearance Certificate or a Certificate from the Income tax authority that the assessment is under consideration (as per annexure “D”).
- 2.22:** The contractor shall execute the work as per detailed specifications as incorporated in the tender document and in accordance with the approved drawing and special conditions incorporated in the tender documents.
- 2.23 Scope of work covered by Lump sum cost:** The Scope of work covered by lump sum cost is given in Annexure-M & N.
- 2.24 List of works in hand:** Tenders must be accompanied by a list of contracts already held by the tenderer at the time of submitting the tender in C.G. public works Department and elsewhere as per Annexure - K.
- 2.25 Removal of unsuitable or undesirable employees of contractor:** The Contractor shall on receipt or the requisition form the Executive Engineer at once remove any person employed by him on the work who in the opinion of E.E. is unsuitable or undesirable.
- 2.26 Recovery of Amount due to Government from contractor:** Any amount due to Government from the Contractor on any account, concerning work may be recovered from him as error of land revenue and/or from payment due to him in any of the Govt / Semi Government Department.
- 2.27 Transport of materials in contractors responsibility:** The Contractor shall make his own arrangement for transport of all materials The Government is not bound to arrange for priorities for Gattings wagons or any other materials though all possible assistance by way of recommendation will be given, if it is found necessary in the opinion of the Engineer –in –Charge if it proves in effective the contractor shall have no claim for any compensation on this account.
- 2.28 Arrangement of Tools and Plants:** The Contractor shall arrange at his own cost tools and plants required for proper execution of work. In case the contractor want to take the plant & Machinery on hire from the department, it may be obtained from E&M wing of the Department as per rules, prevailing.

- 2.29 Increase or Decrease of work specified within lump sum:** The competent authority reserves the right to increase or decrease any work specified within lump sum during the currency of the contract and Contractor will be bound to comply with the order of the competent authority, these variations will be Governed by Clause-3.28
- 2.30 Execution of work according to time schedule:** The work shall be done by the Contractor according to the time schedule fixed by competent authority.
- 2.31 Canvassing or support or acceptance of tender:** Canvassing or support in any form for the acceptance of any tender is strictly prohibited Any tender doing so will render himself liable to penalties which may include removal of his name from the register of approved contractors.
- 2.32 List of persons employed by contractor:** The contractor shall not be permitted to tender for works in the concerned Division/Circle (responsible for award and execution of contracts) in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Assistant Engineer (both inclusive) A list showing the names of the persons who are working with the contractor and are near relatives to any Gazetted officer in the P.W. Department including Secretariat should also be appended to the tender. He should also intimate to the E.E. the names of subsequently employed persons who are near relatives of any gazetted officer in P.W. Department or Divisional Accountant in concerned divisions. Any breach of this condition by the contractor would render him liable to be removed from the approved list of Contractors of this Department.
- 2.33 Escalation**
Reimbursement /Refund on Variation in Prices of Materials / P. O. L. and Labour Wages
- Price Adjustment: -**
- (A) Contract price shall be adjusted for increase or decrease in rates and price of labour, materials, POL, in accordance with the following principles and procedure and as per formula given below.
- Note: -** "Price adjustment shall be applicable from reckoned date and up to validly extended period but shall not apply to the period when, work is carried out under panel (compensation) clause".
- (B) The price adjustment shall be determined during each month from the formula given in the hereunder.
- (C) Following expressions and meanings are assigned to the work done during each month:

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

The formula (e) for adjustment of prices are: -

R= Total value of work done during the month. It would include the amount of secured advance granted, if any, during the month, less the amount of secured advance recovered, if any during the month. It will exclude value for works executed under variations for which price adjustment will be worked separately based on the terms mutually agreed.

Adjustment for labour component

- (i) Price adjustment for increase or decrease in the cost due to labour shall be paid in accordance with the following formula:

$$V_L = 0.85 \times P_1/100 \times R \times (L_i - L_0)/L_0$$

V_L = increase or decrease in the cost of work during the month under consideration due to changes in rates for local labour.

L_0 = the consumer price index for industrial workers at the town nearest to the site or work as published by Labour Bureau, Ministry of Labour, Govt. of India, on the date of inviting tender

L_i = The consumer price index for industrial workers at the town nearest to the site of work for the month under consideration as published by Labour Bureau, Ministry of Labour, Government of India.

P_1 = Percentage of labour component of the work, the site or work as published by Labour Bureau, Ministry of Labour, Govt. of India, on the date of inviting tender

Adjustment for cement component

- (ii) Price adjustment for increase or decrease in the cost of cement procured by the contractor shall be paid in accordance with the following formula;

$$V_c = 0.85 \times P_c/100 \times R \times (C_i - C_0)/C_0$$

V_c = increase or decrease in the cost of work during the month under Consideration due to changes in rates for cement

C_0 = The all India wholesale price index for cement as published by the Ministry of Industrial Development, Government of India, New Delhi, on the date of inviting tender

C_i = The all India average wholesale price index for cement for the month Under consideration as published by Ministry of Industrial Development, Govt. of India, New Delhi.

P_C = Percentage of cement component of the work.

Adjustment for steel component

- (iii) Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula;

$$V_s = 0.85 \times P_s/100 \times R \times (S_i - S_0)/S_0$$

- V_s = increase or decrease in the cost of work during the month under Consideration due to changes in the rates for steel.
- S_0 = The all India wholesale price index for steel (Bar and Rods) as published by the Ministry of Industrial Development, Government of India, New Delhi. on the date of inviting tender
- S_i = The all India average wholesale price index for steel (Bar and Rods) for the month under consideration as published by Ministry of Industrial Development, New Delhi.
- P_s = Percentage of steel component of the work.
- Note:-** *for the application of this clause, index of Bars and Rods has been to represent steel group.*

Adjustment of bitumen component

- (iv) Price adjustment for increase or decrease in the cost of bitumen shall be paid in accordance with the following formula;
- V_L = $0.85 \times P_b/100 \times R \times (B_i - B_0) / B_0$
- V_b = Increase or decrease in the cost of work during the month under Consideration due to changes in rates for bitumen.
- B_0 = The official retail price of bitumen at the IOC depot at nearest centre on the date of inviting tender.
- B_i = The official retail price of bitumen of IOC depot at nearest center for the 15th day of the month under consideration.
- P_b = Percentage of bitumen component of the work.

Adjustment of POL (fuel and lubricant) component

- (v) Price adjustment for increase or decrease in cost of POL (fuel and lubricant) shall be paid in accordance with the following formula;
- V_f = $0.85 \times P_f/100 \times R \times (F_i - F_0)/F_0$
- V_f = Increase or decrease in the cost or work during the month under consideration due to changes in rates for fuel and lubricants.
- F_0 = The official price of High Speed Diesel (HSD) at the existing consumer Diesel pumps out let at nearest center on the date of inviting tender
- F_i = The official retail price of HSD at the existing consumer pumps of IOC at nearest center for the 15th day of month under consideration.
- P_f = Percentage of fuel and lubricants component of the work.

Note: - For the application of this clause, the price of High speed Diesel Oil has been chosen to represent fuel and lubricants group.

Adjustment of Other Materials Component

- (vii) Price adjustment for increase or decrease in cost of local materials other than Cement, steel, Bitumen and POL procured by the contractor shall lay in accordance with the following formula;
- V_m = $0.85 \times P_m/100 \times R \times (M_i - M_0)/M_0$

V_m	=	Increase or decrease in the cost of work during the month under Consideration due to changes in rates for local materials other than cement, steel, bitumen and POL.
M_0	=	The all India wholesale price index (all commodities) as published by the Ministry of Industrial Development, Govt. of India, New Delhi. on the date of inviting tender
M_i	=	The all India Wholesale price index (all commodities) for the month under consideration as published by Ministry of Industrial Development, Govt. of India, New Delhi.
P_m	=	Percentage of local material component (Other than cement, steel, bitumen and POL) of the work.

The following percentages will govern the price adjustment for the entire contract:

Sl. No.	Components	For road	For Building	For bridge
1	Labour- P_l	25%	35%	30%
2	Cement – P_c	5%	10%	25%
3	Steel – P_s	5%	10%	25%
4	Bitumen – P_b	10%	-	-
5	POL – P_f	10%	10%	10%
6	Other materials - P_m	45%	35%	10%
	Total: -	100%	100%	100%

Note :-If in the execution of contract for Road works use of certain material(s) is/are not involved (Viz cement, steel, Bitumen etc.), then the percentage of other material- P_m shall be increased to that extent

Example: - Say in a contract of roadwork steel is not required (P_s -5%). P_m shall become $45\%+5\%=50\%$

Or

Say cement & steel not required then P_m shall become $45\%+5\%+5\%=55\%$ and so on

2.34 Validity of Offer: Tenders shall remain open up to four months from the prescribed date of opening of tenders. However, when tenders are invited in 3 cover system and or negotiations are held, the modified or fresh offers shall remain open up to four months from the prescribed date of opening the same. In the event of the tenderer withdrawing the offer before the aforesaid dates for any reason whatsoever, Earnest money deposited with the tender shall be forfeited to the Govt. by the Executive Engineer. In the event of tenderer withdrawing his/her offer before the expiry of the period of validity of offer or failing to execute the contract agreement he/she not be entitled to tender for this work. In the case of recall of tenders, In addition to forfeiture of his/her earnest money as may be applicable for their work. If the tenderer has committed a similar default on an earlier occasion as well, his/her registration in the department may be suspended temporarily for a period of 6 months from such date as may be ordered by the authority which had registered him/her.

2.35 Bank Commission Charges: Bank commission charges in all payments by demand drafts outside the State will not be borne by the State Government but by the Supplier/firms/contractor himself.

2.36 Force Majoure: Should failure in performance of any part of this contract arise from war, insurrection, restraint imposed by Government, act of Legislature or other authority, stoppage of hindrance in the supply of raw materials, or fuel, explosion, accident, strike, riot, lockout, or other disorganisation, of labour or transport, breakdown of machine, flood, fire act of God, or any inevitable or unforeseen event beyond human control directly or indirectly interfering with the supply of stores or from any cause which may be a reasonable ground or an extension of time, the competent authority will allow such additional time as he considers to be justified in the circumstances of the case. No compensation will be payable to the contractor for any loss incurred by him due to these reasons.

2.37: Each tenderer shall supply the name, residence and place or business of the person or persons giving the tender and shall be signed by the tenderer with his usual signature. When tender is given by partnerships the full names of all partners shall be furnished. An attested copy of the constitution of the firm and the registration number of the firm shall be furnished. In such a case the tender must be signed separately by each partner thereof or in the event of the absence of any partner it must be signed on his behalf by a person holding a power of attorney authorising him to be so. Tenders by a corporation shall be signed with the legal name of the corporation followed by the name of the stage of incorporation and by signature and by designation of the president, secretary or other persons authorised to bind it in the matter.

2.38 Technical Knowledge and staff:

2.38.1: The tender shall be submitted with the declaration that the contractor has successfully carried out large works of this nature and has adequate organisation, machinery and experienced personnel to handle jobs of this type and magnitude.

2.38.2 A brief description of large works previously executed by tenderer: After the tender has been opened any tenderer may be required to submit detailed particulars of such works along with manner of their execution and any other information that will satisfy the officer receiving the tender that the contractor has adequate organisation, including experienced personnel to execute vigorously the work to be carried out as per these specifications.

2.38.3 (a) The contractor shall employ the following Technical Staff during the execution of work-

- (i) One graduate engineer when the work to be executed is more than Rs. 25 lakhs.
- (ii) One diploma engineer when the cost of work to be executed is from Rs. 5 lakhs to 25 lakhs.
- (b) The Technical Staff should be available at site and take instructions from the Engineer-in-Charge or other supervisory staff
- (c) In case the contractor fails to employ the technical staff as aforesaid, the E.E. shall have the right to take suitable remedial measures.
- (d) The contractor shall give the names and other details of the graduate engineer/diploma engineer to whom he intends to employ or who is under employment with him, at the time of agreement and also give his curriculum vitae.
- (e) The contractor shall give a certificate to the effect that the graduate engineer/diploma engineer is exclusively in his employment.
- (f) A graduate engineer or diploma engineer may look after more than one work in the same locality but the total value of such works under him shall not exceed Rs. 100 lakhs in the case of a graduate engineer and Rs. 50 lakhs in the case of a diploma engineer
- (g) It shall not be necessary for the firm/company whose one of the partner is a graduate engineer / diploma engineer to employ another graduate engineer / diploma engineer subject to the conditions provided under 2.38.3 (a),(b) and (f)

- (h) The Retired Assistant engineer who is holding a diploma may be treated at par with a Graduate for the operation of the above clause.

Note:- Such Degree or Diploma engineer must be always available on works site on day to day basis and actively supervise, instruct and guide the contractor's works force and also receive instruction from the Departmental Engineers/Sub engineers.

In case the contractor fails to employ the above technical staff or fails to employ technical staff /personnel as submitted by the contractor in Pre qualification documents if prequalification is called and or the technical staff/personnel so employed are generally not available on work site and or does not receive or comply the instructions of the Department Engineers, the Executive Engineer shall recover/deduct from his bills, a sum of Rs. 2500/per week of such default. If the default continues for more than 4 weeks then such default can be treated as "Fundamental Breach of Contract" and the contract can be terminated and action shall be taken under clause 1.14

2.39: The Contractor Should also give the following information invariably on cover containeng the tender.

A: Name and address of the Contractor:

B: Class in which he is registered:

C: Amount of earnest money deposited and No. and date of money receipt etc.

2.40: The tender documents have to be completed and submitted with all the documents required in the tender notice, Following is the summary of the documents required to be submitted with the completed tender form.

- 2.40. (I):** The name, residence and place of business etc. of the tenderer vide Clause 2.37 above.
- (II):** Details of contracts already held by the tender vide clause 2.24 above.
- (III):** Receipt of Earnest money deposited vide clause 2.5.1 above or surety bond from bank.
- (IV):** Income tax clearance certificate vide clause 2.21 above.
- (V):** A list of near relatives of the tenderer working in C.G. Public Works Department Vide clause 2.32. (See Annexure -J)
- (VI):** Attested copy of the constitution of firm (if required) and power of attorney, as required vide Clause 2.37.
- (VII):** A declaration that there has been no conviction imprisonment for an offence involving moral turpitude.
- (VIII):** Declaration and description as required vide Clause 2.38.1 and 2.38.2.

2.41 Registration with Labour Commissioner: No tender shall be accepted and no contract given to any contractor or firm who/which is not registered as an Institution with Labour Commissioner, C.G. under Contract Labour's (Regulation and Abolition) M.P. Rules, 1983 and the tenderers shall have to accompany with a license to this effect.

CHAPTER - III

3.1 General: The special conditions are supplementary instructions to the tenders and would forms part of the contract.

3.2 Drawing: Drawings given, listed and indexed in part will form part of the contract. The above drawings show the work to be done as definitely and in such details as is possible, at the present stage of development of investigation and the design. The attached drawings will be supplemented or superseded by such additional and detailed drawings as may be necessary or desired as the work proceeds. Such additional general and detailed drawings will show dimensions and details necessary for constructions purposes more completely than are shown on the attached drawings. For all features of the work The contractor shall be required to perform the work, on these features and in accordance with additional general and detailed drawings mentioned above at the applicable unit prices tendered in the schedule for work or work of similar nature as determined by the Engineer-in-charge. The contractor shall check all drawings carefully and advise the Engineer-in-charge of any errors or omissions discovered. The contractor shall not take advantage of errors or omissions as full instruction will be furnished to the contractor should any errors or omissions be discovered.

The drawings and specifications are to be considered as complementary to each other and should anything appear in one that is not described in the other no advantage shall be taken of such omission. In case of disagreement between specifications shall govern the contract. Should any discrepancies, however, appear or should any misunderstanding arise as to the meaning and interpretations of the said specifications or drawings or as to the dimensions or the quality of the materials for the proper execution of the work or as to the measurements or quality and valuation of work executed under this contract or extra there upon, the same shall be explained by the Engineer-in-charge.

Figures in dimensioned drawings shall supersede measurements by scale and drawings to a large scale shall take precedence over those on a small scale. Special directions incorporated on the drawings shall be complied with strictly.

One copy of the drawings and contract documents shall be kept at all times at the site of the works by the contractor.

3.3 Data to be furnished by the Contractor: The Contractor shall submit the following information to the Engineer-in-charge.

3.3.A: Proposed constructions programme and time schedule showing sequence of operations with in two weeks of receipt of notice to proceed with the work in pursuance of the conditions of contract. Along with the above he will also submit programme of bringing requisite tools and plants, machinery to be engaged by him to the site of work.

3.4 Programme of Construction: The Contractor shall submit the detailed, year-wise construction programme with in 14 days of the date of notice to proceed with the work. This programme may be reviewed and revised every year at the beginning of the working season.

3.5 Action when the progress of any crucial item of work is unsatisfactory: If the progress of a crucial item of work, which is important for timely completion of work, in unsatisfactory the Engineer-in-charge shall, not withstanding that the general progress of work is satisfactory. After giving the contractor 10 days notice in writing and the

contractor will have no claim for compensation for any loss sustained by him owing to such action.

- 3.6 Inspection and Tests:** Except as otherwise provided in here of all material and workmanship. If not otherwise designated by the specifications shall be subject to inspection. Examination and test by the Engineer-in-Charge at any and all times during manufacture and/or construction and at any/all places where such manufacture or constructions are carried on. The Engineer-in-charge shall have the right to reject defective materials and workmanship or require its corrections. Rejected workmanship shall be satisfactorily replaced with the proper material without charge thereof and the contractor shall properly segregate and remove the rejected material from the premises. If the contractor fails to proceed at once with the replacement of the rejected material and/or the construction of defective workmanship the Engineer-in-charge any replace such material and/or correct such workmanship and charge the cost thereof to the contractor.

The Contractor shall be liable for replacement of defective work up to the time in accordance with clause 1.9 of the conditions of contract of all work to be done under the contract.

The contractor shall furnish promptly without additional charge all facilities, labour and material necessary for the safe and convenient inspection and tests that may be required by the Engineer-in-Charge. All inspections and tests by the departments shall be performed in such a manner as not unnecessarily to delay the work. Special full size and performance test shall be charged with any additional cost of inspection when materials and workmanship are not ready by the contractor at the time of inspection.

- 3.7 Removal of temporary work, Plant & Surplus materials:** Prior to final acceptance of the completed work, but excepting as otherwise expressly directed or permitted in writing, the contractor shall, at his own expenses remove from the site and dispose of all the temporary structures including buildings, pile work, crib work, all plant and surplus materials, and all rubbish and debris for which he is responsible to the satisfaction of Engineer-in-Charge.
- 3.8 Possession prior to completion:** The Engineer-in-Charge shall have the right to take possession of or use any completed part of the work. Such possession or use shall not be deemed as an acceptance of any work not completed in accordance with the contract.
- 3.9 Damage to works:** The works whether fully completed or incomplete, all the materials, machinery, plants, tools, temporary building and other things connected there with shall remain at the risk and in the sole charge of the contractor until the completed work has been delivered to the Engineer-in-Charge and till completion certificate has been obtained from the Engineer-in-charge. Until such delivery of the completed work, the contractor shall at his own cost take all precautions reasonably to keep all the aforesaid works, materials, machinery, plants, temporary buildings and other things connected there with free from any loss, damages and in the event of the same or any part there of being lost or damaged, he shall forthwith reinstate and made good such loss or damages at his own cost.
- 3.10 Examination and tests on completions:** On the completion of the work and not later than three months there after, the Engineer-in-charge shall make such examination and tests of the work as may than seem to him to be possible, necessary or desirable, and the contractor shall furnish free of cost any materials and labour which may be necessary therefore and shall facilitate in every way all operations required by the Engineer-in-Charge, in making examination and tests.

- 3.11 Climatic Conditions:** The Executive Engineer may order the contractor to suspend any work that may be subject to the damage by climatic conditions and no claims of the contractor will be entertained by the department on this account.
- 3.12 Safety regulations:** While carrying out this work, the contractor will ensure compliance of all safety regulations as provided in the Safety Code (Annexure - "H")
- 3.13 Haul roads:** A fair weather road of the standard of a village cart track is ordinarily maintained by the department along the canal alignment which is motorable from November to end of May, but contractor shall not have any claim on this account if one is not provided or maintained. Necessary haul roads to work sport borrow areas and water sources shall be satisfactorily constructed and maintained by the contractor at his own cost. The contractor has to construct and maintain his own approach roads from the main haul roads provided by the department. Any new haul roads will have also to be constructed and maintained by the contractor at his cost.
- 3.14 The Contractor will make his own arrangement:** for supply of Water, Light & Power for his works and labour camps etc.: The contractor will make his own arrangement for supply of water light and power for his works and labour camps etc. The department will not entertain any claim what soever for any failure or break down etc. in supply or electricity to the contractor. The Contractor will supply and fix his own tested meter of the approved make but the meter will be kept in the custody of the department.
- 3.15 Interference with other Contractors:** The contractor must not interfere with other contractors who may be employed simultaneously or otherwise by the department. He will at no time engage departmental labour or that of other contractors without the written permission of the Engineer-in-Charge.
- 3.16 Regulations and bye laws:** The contractor shall conform to the regulations, bye-laws any other statutory rules made by any local authorities or by the Government and shall protect and indemnify Government against any claim or liability arising from or based on the violation of any such laws, ordinance, regulation, orders, decrees etc.
- 3.17 Order Book:** An order book shall be kept in the departmental office at the site of the work. As far as possible all orders regarding the works are to be entered in this book.
- All entries therein shall be signed by the departmental officers in direct charge of the work and the contractor or his representatives. In the important cases the Executive Engineer or the Superintending Engineer will countersign the entries which site except with the written permission of the superintending Engineer and the Contractors or his representative shall be bound to take note of all instructions meant for the contractor as entered in the order book without having to be called for separately to not them. The Engineer-in-charge shall submit periodically copies of the remarks of the order book to the Superintending Engineer and Chief Engineer for record and to the contractor for compliance and report.
- 3.18 Conversion of units:** Whenever in the contract agreement dimensions and units have been expressed in F.P.S. system, the same will be converted in to metric system units by supplying the standard conversion table of Indian Standard Institution so as to derive the corresponding figure arithmetically and the contractor will have to accept the figures so derived without any claim or compensation whatsoever.
- 3.19 Rights of other contractors and persons:** If, during the progress of the work covered by this contract, in its necessary for other contractors or persons to do work in or about the

site of work, the contractor shall afford such facilities, as the Engineer-in-charge may require.

- 3.20 Employment of technical persons:** In accordance with the requirement of clause 2.38.3 the contractor will employ or produce evidence of having in his employment a qualified technical person not below the rank of a Sub-Engineer/Graduate Engineer from an Institution recognised by the Government of Chhatisgarh and furnish full details to the Engineer-in-charge in the following format:

- (I): Name of the Sub-Engineer/Graduate Engineer engaged quoting Diploma or Degree with name of Institutions.
 (II): Period for which the Sub-Engineer/Graduate Engineer has been engaged with emoluments

3.21 ADVANCES TO CONTRACTORS:

The provision of (i) Mobilization advance& (ii) Advance on plant and machinery will apply to contract above Rs. one crore only

- 3.21.1 Mobilization advance:** - Mobilization advance up to 5 % (Five percent) of the contract value shall be given if requested by the contractor with in one month of the date of order to commence the work. In such a case the contractor shall furnish Bank Guarantee from schedule bank for the equal amount in favour of the Executive Engineer before sanction and release of the advance. This advance shall be Interest free. This 5% (Five percent) advance shall be given in the two stages

Stage -1: - 2%(Two percent) of the contract value payable after signing of the agreement

Stage-2: - 3%(Three percent) of the contract value payable on receipt of the certificate from the contractor that he has established complete central and field testing laboratories and has engaged workers/technicians and have brought requisite plants and machineries at work site, the work is physically started and only after construction programme is submitted by the contractor and is duly approved by the Executive Engineer.

Executive Engineer shall sanction the mobilization advance

3.21.2 Advance on plant and machinery: -

Advance up to 5%(five percent) of the contract value shall be given, if requested by the contractor, only for the new plant and machineries required for the work and brought to the site by the contractor .In such a case the contractor shall furnish Bank Guarantee from schedule bank for the equal amount in favour of the Executive Engineer before sanction and release of the advance. The advance shall be limited to 90% (ninety percent) of the price of such new plant and machineries. This advance shall be interest free. This 5% (Five percent) advance shall be given in the two stages

Stage -1: - 2%(Two percent) of the contract value after plant and machinery has arrived at the site

Stage-2: - 3%(Three percent) of the contract value payable after installation of such plant & machinery etc.

This advance shall be made against hypothecation of plants and machineries in favour of the Executive Engineer in charge

Sanctioning authority for the this advance shall be Superintending Engineer

- (a) The contractor shall not remove these plants and machineries from the work site without prior written permission from the Executive Engineer

- (b) The contractor shall submit an affidavit along with the application that he has not received or applied for advance against plant and machineries for which the advance is applied, in any other agreement/office/institution.

3.22 Recovery of advances: -

Recovery of above advances (mobilization, plant and machineries) will start when 15(fifteen)% of the work is executed and recovery of total advance should be completed by the time 80(eighty) % of the original contract work is executed or when 75% (seventy five percent) of stipulated or validly extended period is over; whichever is earlier.

3.23 Secured advance:- Advances to contractor are as a rule prohibited, and every endeavor should be made to maintain a system, under which no payments are made for unmeasured work except for work actually done. Exceptions are, however permitted in the following cases: -

Cases in which a contractor whose contract is for finished work, requires an advance on the security of materials brought to site, Executive Engineer may in such cases sanction advances up to an amount not exceeding 75% of the value of material and 90% in the case of steel (as assessed by the Executive Engineer) provided that the rate(s) of allowed in no case is/are more than the rate payable for the finished item as stipulated in the contract of such materials, provided that they are of imperishable nature and that a formal agreement is drawn up with the contractor under which Government secures a lien on the materials and is safeguarded against losses due to the contractor postponing the execution of the work or to the shortage or misuse of the materials, and against the expense entitled for their proper watch and safe custody.

Payment of such advances should be made only on the certificate of an officer not below the rank of Sub-Divisional Officer, that the quantities of materials upon which the advances are made have actually been brought to site, that the contractor has not previously received any advance on that security and that all the materials are required by the contractor for use on items of work for which rates for finished work have been agreed upon. Recoveries of advances so made should not be postponed until the whole of the work entrusted to the contractor is completed. They should be made from his bills for work done as the materials are used the necessary deductions being made whenever the item of work in which they are used; are billed for.

Before granting the above-secured advance the contractor shall sign the prescribed Indenture Bond in the prescribed form.

3.24 Scope of Lumpsum cost: The lumpsum contract shall comprise of the construction, completion and maintenance of the works and provision of all labour, materials, constructional plants, transport and all works of a temporary or permanent nature required for such construction, completion and maintenance in so far as the necessary for providing the same is specified in the contract.

3.25 Open foundations: The Contractor's lumpsum should include provision for cofferdam, diversion of drain or stream and bailing out of water or dewatering foundations and shoring etc.

3.26 Law water level variation: The low water level given in the NIT is for general guidance of the contractor. It is liable to vary. No claim due to variation of low water level shall be entertained.

3.27 Schedule of running payment: schedule of running payment may be based on the following break up of the lumpsum subject to the stipulations of clause 1.15 of conditions of contract.

- 1: On completion of excavation & footings
for piers or well foundations including well cup : _____
- 2: The same as (2) above for abutments and returns : _____
- 3: On completion of piers including pier caps & bearing : _____
- 4: On completion of abutments and returns including cap : _____
- 5: On completion of superstructure (deck) : _____
- 6: On completion of wearing coat, kerb, railing, expansion
Joint, footpath, testing and all other remaining items.
- 7: On Completion of both side approaches including protection work.

No payment shall be made for design work separately. :

Running payment shall be made as per detailed schedule of running payments.
The details schedule shall as prepared withing the broad break up as indicated above.

The detailed schedule shall be prepared by mutual agreement between the contractor and the Department.

Proportional part payment shall be made for incomplete items of work as given in the detailed schedule. No provision shall be allowed in the detailed schedule for arranging materials like H.T. Steel, bearings, centering and form work.

In the event of variation of the span arrangement after finalisation of the contract, the detailed schedule shall revised within the broad break up as approved earlier.

- 3.28** Extra work and rebate: Extra/Rebate work arising out of this contract shall be valued at par with SOR for Bridge work issued bywith effect from Road works issued by with effect from and amended up to the date of issue of NIT $\pm$ (Plus, Minus) the Percentage which Tender cost bears to the P.A.C. shown in the tender document at the time of sanction.

For any item of work for which there is no rate in the said SOR shall be decided by the S.E. taking in to consideration the expenses incurred by the contractor and its reasonableness which shall be final and binding.

CHAPTER IV

DESIGN AND SPECIFICATIONS:

4.1 Contractors Design::

Following general arrangement drawing, containing departmental designs are enclosed.

(1): _____G.AD. Enclosed._____

(2): __Site Plan Enclosed._____

4.1 Annexure M give description of the work as per departmental design (the details of the bridge and structural data), Design data and specifications required for alternative design are given in Annexure-N The Contractors/firm may quote on his/their own design which shall be suitable and feasible for the site, stream and foundation strata conditions in the event of his/their design having been accepted, the contractor shall satisfy the Chief Engineer, Bridge Construction Zone, hereinafter called the C.E. (Bridges) as to the correctness and soundness of the design, specifications and calculations in respect of design offered within such reasonable time as may be agreed upon, Failing this the contractor/firm will have to accept such modifications in the details of his/its design as are necessary in the judgment of the C.E. (Bridges) and the contractor or firm will not be entitled to any extra payment of this account.

4.2 Design Code of Practice, Specifications: The Codes of practice and specification which are adopted in the departmental design and which shall be adopted in contractors design will be as follows:

4.2.1.: Materials of construction of bridge and culverts shall be governed by the relevant Indian Standards Codes of Practice However, Permissible stresses in materials and design procedure shall be as per Para 4.2.2 below.

4.2.2.: The design procedure permissible stresses in material and other relevant stipulations shall be governed by the codes of practice published by the Indian Road Congress such as Section-I to VII & IX criteria for prestressed concrete and other relevant IRC Publications IRC Publication Nos. 5,6,18,21,24,22,45,78,83, and 87 may be referred..

4.2.3: The specification of bridge shall be as per 'Specifications of Road & Bridges' latest Revision published by the Ministry of Shipping & Transport, Roads Wing.

4.2.4.: New Codes of Practice and amendments issued by the Indian Standards Institution and Indian Roads congress from time to time in the past or issued till the date of tender will also be automatically applicable for the work of bridge and culverts, similarly amendments and revisions in the M.O.S.T. Specifications made up to the date of tender shall also be applicable.

4.2.5.: In absence of any provision for particular criteria of design in the IRC codes of Practice, the same may be adopted as per

(1): CEB FIP Model code for concrete structures 1978.

(2): British Standard BS: 5400 Steel, Concrete & Composite Bridges.

4.2.6: Besides the codes of Practice and specifications referred to above, following conditions contained para 4.3 to para 4.28 shall also be applicable for this work.

4.3 Approval of Designs: On approval of the tender on contractor's design, the contractor shall submit design calculations and drawings to the C.E.N.H. & Bridges Zone Raipur in duplicate. One copy of the approved drawing will be returned to the contractor, who will then submit seven copies of approved drawing to the C.E. (Bridges). Approved drawings will then be sent to the concerned S.E. & E.E. In charge of the work and contractor for execution.

On completion of the work the contractor shall submit two more complete sets of approved design calculations and drawing, neatly bound to the C.E. (Bridges) along with the completion drawing of the bridge.

4.4 Revised design: If the Design foundation level or any other structural element is required to be varied in respect of works on the contractor's alternative design, for the same must be submitted by the contractor to the C.E. (Bridges).

4.5.1 Change of type of foundation: In case, the contractor adopts well foundations within his lumpsum cost in place of open foundation provided in the outline design of the department, no extra will be paid to the contractor inducing providing sump in rock and dowel bars.

If contractor desires to adopt open foundation in place of well foundation proposed in the departmental design, the department reserves the right to accept or reject such a proposal. The proposal of open foundation may be examined only if the contractor agrees to the following conditions. 'If during execution of the work the open foundation proposed by the contractor in place of well foundation as envisaged in departmental design, is required to be changed back to well foundation, on any account, whether due to difficulties of execution, excessive percolation; variation in strata as compared to bore data variation in bearing pressure etc. no extra on this account shall be payable up to the design foundation level given in departmental design'.

4.5.2 Foundation resting on rock: All open foundations design to be taken into rock shall be taken to the design level as indicated in the outline drawing.

In case rock is met with at bed level or at shallower depths, the foundation level shall be minimum 1.5 M below the bed level. The contractor shall have to take the

foundations up to the level as approved by the Engineer - in -Charge. The lumpsum price shall be adjusted for variation in foundation level with respect to the design foundation level as per approved rates.

4.5.3 Where non load bearing type of abutment are not provided in the departmental drawing and the tenderer wants to provide the same these can only be provided under specified condition.

4.5.4 Foundation level of adjoining foundations: If the two adjoining foundations of a bridge are to be founded at different levels and if such foundations are not resting on rock, the difference of level between the two foundation shall not be more than.

0.5 L for predominantly sandy soil

0.7 L for clayey strata, and

1.0 L in hard clay, hard murum etc.

Where L is the horizontal clear distance between the edge of footing of the adjacent foundation.

In case of stepped up foundation, the height of step shall not be more than 1.5 Mts. And length of each steps shall also not be less than 1.5 M.

- 4.5.5. Filling trenches:** In case of open foundation in rock, the Lumpsum cost shall be deemed to include filling up trenches in rock, around the structure by M-15 concrete up to top of rock.
- 4.5.6. Levelling course & foundation level:** In case of open foundations average 150mm levelling course of concrete not leaner than M-15 shall be provided and the top of this levelling course shall be foundation level for the purpose of this contract.
- 4.6 Well foundation:**
- 4.6.1 Well diameter::** The well diameter of a single ciurcular well shall not be less than 4.5 m.
- 4.6.2 Passive relief:** Calculation of relief allowed by the passive resistance of the soil below the maximum design scour level shall be as laid down in IRC Codes.
- 4.6.3 Artesian Conditions:** If artesian conditions are encountered during well sinking, additional false staining may be required to facilitate sinking and plugging.
- 4.6.4 Sinking tilts and shifts:** The well shall be initially designed for a resultant tilt of 1/80 and a resultant shift of 15 Cms.
- 4.6.4.1:** For sinking of wells, if diversion of channel or cofferdam construction becomes necessary, it shall be done by the contractor at his own cost.
- 4.6.4.2:** The tender shall cover sinking of wells through all types of strata inclusive of soil mixed or compacted with shingle and containing isolated boulders up to the tune of 0.03 Cum and for all methods of sinking other than penumatic method of sinking but including the costs of service of diverse and other equipment's ancillary to removal of boulders, dislodging isolated obstructions below the cutting edge and such other operations as may be required for sinking of wells.
- 4.6.4.3:** Pneumatic method of sinking wells whenever if becomes necessary shall not be resorted to, except on the prior written orders of the Chief Engineer concerned.
- 4.6.4.4:** The rates for the extra cost in sinking of the well by pneumatic method of sinking if required, shall be quoted by the contractor wild submitting the tender.
- 4.6.4.5:** The steining of the well shall be constructed in stages and the well sunk truly vertical to the final levels. The permissible tilt and shift in the well shall be as indicated in the 'Departmental Specifications' If the wells are resting on rock, the lumpsum offer will be deemed to include the cost of providing minimum 30 Cms. Sump in hard rock and 60 Cms. Sump in soft rock, The diameter of the sump may be 1 M. less than the inner diameter of well. Irrespective of design considerations. 6 dowel bars of 25 mm dia may be provided in each well and they may be anchored.
- 4.6.4.6:** In case of wells where the permissible limits of tilts and shifts are/is exceeded, approved remedial measures shall be taken by the contractor to bring the tilts(s) and/or shift(s) to within these permissible limits, at no extra cost to the Department..

4.6.4.7: If the tilt(s) and/or shift(s) of any well exceed the specified permissible values, the well so sunk shall be regarded as not conforming to specifications and may be accepted by the Engineer-in-Charge, Provided.

- i:** The tilt and / or shift in any direction do not exceed the extreme limits to 1 in 50 tilt and 750 mm (30 inches) shift
- ii:** Calculations for foundation pressure and steining stresses, accounting for the actual tilt(s) and shift(s) shall be given by the contractor and any remedial measures, required to bring the stresses within permissible values, (such as increase in the dimension of the well cap, provision of dummy weights on the well cap adjustment of span length etc.) shall be carried out by the contractor without claiming for any extra cost; and
- iii:** Further the contractor shall pay a penalty as provided in the clause 4.6.4.9

4.6.4.8: Any well with tilt exceeding 1 in 50 and / or shift exceeding 750 mm (30 inches) shall be liable to rejection at the cost of the contractor. However, the Engineer-in-Charge, In his sole discretion, may consider accepting such a well, provided:

- i:** The contractor furnishes detailed calculations for foundation pressures and steining stresses and these are found to be acceptable by carrying out suitable remedial measures approved by the Engineer-in-Charge these remedial measures will be carried out at the cost of the contractor.
- ii:** The contractor shall pay a penalty, as provided in clause 4.6.4.9 the work not conforming to specifications.

4.6.4.9: For wells, with tilt and / or shift exceeding the permissible values, specified in the departmental specifications as accepted, for one reason or the other, these contractor shall pay a penalty to the following extent:

S. No.	Amount of till and/or shift	Lump sum deduction per metre height of well msrd. from the bottom of well cap to the bottom of cutting edge.
1	Tilt exceeding the specified limit but equal to or within 1 in 60.	Rs. 200/-
2	Tilt exceeding 1 in 60 but equal to or within 1 in 50	Rs.400/-
3	Tilt exceeding 1 in 50	Rs. 800/-
4	Shift exceeding the specified limit but equal to or within 500 mm (20inches)	Rs.200/-
5	Shift exceeding 500 mm (20 inches) but equal to or within 750 mm (30inches)	Rs.400/-
6	Shift exceeding 750 mm (30 inches)	Rs. 600/-

In the event of a well being rejected on account of non-compliance with the extreme tilt and/or shift mentioned in clause 4.6.4.7(i) above, the contractor shall dismantle the rejected well to the extent required and remove the debris. He shall further

at his own risk and expense, complete the bridge with modified span arrangement acceptable to the department.

4.6.5. Bottom plugging: The bottom plug shall extend to a level not less than 300 mm (one foot) above the top of the well curb.

4.6.6 Sand filling: The dredge holes of the wells shall be filled up with local sand up to maximum scour level or alternatively, up to 50 Cms. (one foot) below the bottom of the well cap, as prescribed in the Departmental Specifications.

4.6.7. Top plug:

4.6.7.1: At least a one metre thick top plug shall be laid on top of the said filling, where sand filling is done up to scour level.

4.6.7.2: Where sand filling is extended up to the bottom of well cap, the thickness of the top plug may be restricted to 50 Cms.

4.6.7.3: The top plug in both the cases shall be of cement concrete of a mix not weaker than M-15.

4.6.7.4: Where top plug is provided at maximum scour level, the wells shall be assumed to be filled up with water over this top plug level, for the purpose of design/

4.7. Pile foundation:

4.7.1: In case of adoption of pile foundations, the tenderer shall submit preliminary calculations for arriving at the size and length of the piles and the specifications for the tests proposed along with their lumpsum tender.

4.7.2: Any modifications required in the design or the piles to conform to the prevailing sound engineering practice shall be carried out by the tenderers within the lumpsum cost quoted by them for the work, Cast-in-situ concrete piles shall be in general cast in metal shells which remain permanently in place.

The decision of the Chief Engineer concerned, regarding the adequacy of design of the pile foundations shall be final and binding on the contractor.

4.7.3: The diameter of the pile be chosen so as to ensure full stress in concrete without any reduction due to slenderness of pile.

4.7.4: Pile should penetrate 1.5 meter in soft rock and 1.00 meter in hard rock and the continuity of rock for atleast 4.00-meter depth shall be ensured by the tenderer within his lumpsum cost.

4.7.5: If the contractor prefers to cast the pile above ground and then progressively lower it down in prebored holes the diameter of the precast pile be less than the inner diameter of the precast pile be less than the inner diameter of the bore hole. A central hole be left in the pile and the space around space between the precast pile and the bore hole be grouted by cement grout till it works up to the top of bore hole, When the piles are cast above ground, the contractor will be permitted to pull out the liner progressively as and when grouting is done around pile lowered in the bore hole.

4.7.6: If the pile group rests on strata other than rock, the scour level will be taken in to account for the purpose of design of pile shall be the same as that if wells were provided in place. The contractor may choose to penetrate deeper than design foundation level so as to mobilise adequate pressure relief including vertical component of passive resistance to satisfy the requirement of safety. The safe bearing capacity of the founding strata other

than rock will be the one specified for well foundation at design foundation level plus direct load of earth below the design foundation level. Such extra depth if provided shall be accommodated within the lumpsum price.

4.7.7: As a matter of routine indeterminate structure will not be permitted in case one or more supports rest on strata other than rock.

4.8. Piers:

4.8.1: Piers shall be either in solid plain cement concrete or reinforced concrete. The mix of concrete for RCC pier shall not be leaner than M-20 (20 N/Sqmm.) for moderate conditions of exposure and M-25 for severe conditions.

4.8.2: Any design of the pier with projecting frames below the High flood level which may influence the flow or water adversely on entangle floating trees will not be accepted.

4.8.3: The design of the pier shall be such as to allow free flow of the water without creating eddies etc. For instance, in the case of a pier consisting of columns connected by diaphragms the junctions of the diaphragms and the columns shall be suitably streamlined.

4.8.4: The dimensions of the piers shall be so chosen that no parts of the bearing rest on the noses of the pier unless the noses of the piers are reinforced and made monolithic with the main pier by suitable reinforcement, they shall not be considered as effective for distribution of the loads from the superstructure.

4.8.5: Plain concrete and RCC piers: The plain concrete solid pier shall be dimensioned in such a way that it act as a short column under all conditions. The width of pier (along the length of bridge) at any section shall not be less than one sixth the height from top of pier cap to that section under consideration. The cut and ease water for plain concrete pier shall be semi-circulate straight length of the pier between cut and ease water shall not be less than the width of the dacking at soffit level.

For designs of RCC or plain concrete piers, the effective length shall be As per clause 306.1.2 of IRC: 21-1987

4.8.6 Lateral reinforcement in RCC piers, walls:

4.8.6.1: The diameter of lateral reinforcement in RCC piers and / or walls shall not be less than 8mm on the outer/periphery. The cross link as in solid RCC piers may be of 6mm diameter.

4.8.6.2: Transverse reinforcement in columns shall not be less than 250 Sq. MM per Sqm. of the surface area. The spacing of links shall not be more than 300mm.

4.8.7 Piers with 2 or more columns: Piers with 2 or more columns: If the pier consists of more than one column the individual columns shall be connected by a continuous diaphragm. The moments in the current direction shall be converted into tension and compression reactions. The moments and forces in the direction of traffic shall be assumed to be shared equally when such a continuous diaphragm is provided. The continuous diaphragm referred to above shall be designed for horizontal forces of water current.

When the pier consists of more than one RCC columns, the second and subsequent columns in the direction of current shall be designed for water current forces to the extent of obstructions from water current (outer diameter of columns less

thickness of diaphragm). In case of road over bridges a diaphragm connecting two columns will not be necessary.

- 4.8.8 Check for non buoyancy:** For piers and abutments resting on rock the stability of foundation shall be checked for 50% buoyancy and also for non buoyancy at H.F.L. condition for calculating the maximum pressures on the foundation strata.

4.9 Design of Abutments:

- 4.9.1 Type of abutments:** Non spill through type (fully retaining type) of abutments and returns of mass concrete, stone masonry. RCC counterfort type, box type abutments will be acceptable. Spill through type of abutments are not acceptable. In non spill through type abutments the length of return walls shall be such that the earth does not spill beyond the front face of the abutment assuming a slope of 1 vertical to 1½ horizontal. Tied back type abutments and returns are not acceptable.

- 4.9.2 Abutments & Returns dimensions:** Overall width of abutments between outer face of returns shall be equal to the overall width of the bridge. A plan giving layout of the abutment and returns shall be shown in the tender drawing. For plain concrete or masonry abutment and returns, the width of abutment and or return at any section shall not be less than one third the height from formation level to the section under consideration

- 4.9.3 Box type abutment and returns:** If the contractor's design provides for a box type abutment and returns it shall satisfy the following stipulations:

- (a): The box type shall be designed for pressure on account of the earth fill within the boxes. The pressures may be calculated by application of Janseen's formula. The outer walls shall be designed assuming all around scour of the abutment up to the foundation level.
- (b): The internal wall shall be designed to provide for a difference of 1.5 metre between level of earth fill in adjacent cells. Earth filling in cells should be carried out as uniformly as possible.
- (c): The outer walls of the box section (along the direction of traffic) shall be designed for earth fill on the outer sides being retained in slope of one vertical to 1½ horizontal. The relief offered by the fill within the box shall be limited to the active earth pressure calculated by Janseen's formula.
- (d): The outer wall at the approach and perpendicular to the direction of traffic shall be similarly designed as above, but for earth pressure on account of the fill from the foundation to formation level after accounting for the relief from the retained fill.
- (e): The outer wall of the box section along the river face shall be designed for earth pressure on account of height corresponding to the length of return and assumed slope of earth of 1 vertical to 1 1/2 horizontal.
- (f): It shall be assumed that the fill within the box is granular and corresponds to the assumed properties of soil. It shall also be ensured that the boxes are relieved from the static load of water by adequate provisions of weep holes as specified in the relevant specifications.

- (g): The contractor shall provide at his cost suitably designed slab over the box abutments and return assuming no support from the retained materials and the slab shall be adequately designed for dead and live loads specific for the bridge proper.
- (h): The outer wall abutting the approaches shall be designed by assuming that the contractor provide a suitably designed approach slab at his cost so as to relieve the wall of live load surcharge.
- (i): The box type abutment and returns may be constructed either in RCC or plain cement concrete depending upon the requirements of design. For a design in plain cement concrete surface reinforcement as per clause 305.7 of IEC-21: 1987 shall be provided on all faces of concrete irrespective of that fact that it is exposed or not. The minimum wall thickness of RCC box shall be 200mm

4.9.4 Counterfort type abutments: If the front slab is adequately anchored in the counterfort the effective span shall be assumed as clear span between counter forts. The reinforcement in the front slab may be designed assuming suitable strips. The maximum earth pressure in any strip shall be assumed to act in the entire strip.

The minimum thickness of RCC retaining wall shall be 200 mm and minimum width of counterfort shall be 300 mm for outer counterfort and 400 mm for inner counterfort.

The outer counterfort shall also be designed in the horizontal direction for earth pressure to span between vertical beams.

The horizontal force through bearings shall be assumed to be shared equally by all the counterforts. The horizontal force account of earth pressure shall be transferred to the counterforts by assuming the front slab to be a continuous slab.

4.10 Pier caps and Abutment caps:

4.10.1: Pier caps and abutment caps shall be of reinforced cement concrete.

4.10.2: In case of cantilever pier caps such as the same over single circular pier, the pier cap may be designed as a bracket in accordance with the provisions contained clause 6.3.3.2 of B.S.: 5400

4.11 Bearings:

4.11.1: The bearings adopted shall conform to the requirements specified in the relevant codes of Practice.

4.11.2: Use of mortarpad bearings shall not be permitted.

4.11.3: For bearings, a combination of plates of different metals which are likely to result in electrolytic action shall not be permitted. (For example, copper plates interposed between mild steel plates interposed between mild steel plates shall not be permitted).

4.11.4: Inspection of steel bearings by the Directorate General of suppliers & Disposal during manufacture is essential. The contractor shall have to produce the necessary certificates and inspection marks from the Directorate General of Suppliers and Disposal at his own cost.

4.11.5: X-ray or Gamma ray examinations of castings of thickness more than 200 mm (8inches) shall have to be carried out at the contractor's cost.

The same procedure of testing shall to be following for ribbed bearings manufactured by welding.

4.11.6: When synthetic rubber bearings, PTFE bearings Metallic Bearings are adopted, their design testing construction shall be in accordance with the following:

Metallic Bearings & Elastomeric Bearing: As per IRC 84 (Part & II)-1987

PTFE Bearings BS: 5400, part 9.1 and 9.2

4.11.7: The slow movement on account of temperature variations shall be calculated for a variation of 34 degree C rise of fall.

4.11.8: The design of deck shall provide for predetermined points from where lifting of deck at a future date would be possible. In case the design provides for lifting of deck by applying jacks under the cross girder over supports, the cross girders shall be suitably designed, In case the point of application of jacks in proposed along the axis of main beam its effect of pier cap shall be accounted for in the design. The lifting of deck pre supposes connecting the lifting jacks to a common hydraulic manifold.

4.11.9: If the Contractor's design per supposes lifting deck for relieving part of slow movement, such a relief shall be considered only for the slow movement arising out of creep, elastic shortening (in case of prestressed concrete deck) and shrinkage, The total shrinkage shall be considered as specified in relevant IRC Code, if the decking is lifted after 90 days from the date of concreting, fifty percent of the shrinkage shall be deemed to have occurred.

4.11.10:In order to facilitate design of bearings within the parameters of the M.O.S.T. Specifications, provisions of more than one bearing under each rib is permitted. Whenever such a provision is proposed it should be ensured that

- i:** The two bearings are placed symmetrically about the longitudinal centreline of the main girder so that there is a clear space of atleast 5 Cms. Between them after accounting for deformation under designed loads and forces.
- ii:** The bearings are provided in one line along the axis of the cross girder at the supports.
- iii:** The cross girder resting over such bearings is suitably designed.

4.12 Superstructures:

4.12.1 Unbalanced design: Unbalanced type of design involving use only one articulation or more hinges or such structure where stability of any other span is endangered in the event of failure of another span shall not be accepted.

4.12.2 Formation level: The quotations for alternative designs should, as far as possible, provide for the formation level as given in the design data.

4.12.3 Box type deck:(a) Thickness of webs, diaphragms & size of haunches: The thickness of web of RCC box shall not be less than 225 mm or 8 times the diameter of main bar in rib whichever is large. The thickness of webs of prestressed box shall be in accordance with IRC 18 revised 1985. The thickness of intermediate diaphragms shall be equal to dimension of bearing in longitudinal directions or 300 mm whichever is more,

Haunches of size 300 mm horizontal for 100 mm vertical shall be provided at four inner corners of a box cell.

- (b) **Depth of box & openings:** The depth of the box structure shall be such that inspection of the structure during service by inspecting Engineers will be possible. Opening of size 600x1200 mm shall be provided in the soffit of high level bridge on in each cell of each span. The same size of openings shall also be provided in cross diaphragms. 75 mm holes may be provided at 3 Mc/c in the webs below the haunch to minimise temperature variations. One hole of 75 mm dia in each panel of soffit formed by main girders and diaphragms is also necessary to drain out water, concrete pipes may be provided at these holes.
- (c) **Cross diaphragms:** In box structure, there will be stiff diaphragms at supports and at articulations. Intermediate diaphragms shall be placed at quarter span and at mid span. If the aforesaid intermediate diaphragms are to be dispensed with, the structure, shall be analysed for stresses caused due to torsion, distortion and shear lag by any rational method. Fillet of 100x100 mm shall be provided at the junction of main ribs and cross girders.
- (d) **Prestressed box:** Only prestressed concrete structure shall be acceptable for 30 and above. It may be box type or T-beam and slab type. RCC hollow box type deck as not acceptable for submersible bridge. Prestressed box satisfying the criteria mentioned in (a) (b) & (C) and requirements mentioned in clause 4.20 will be acceptable for submersible bridge decks.
- (e) **Load Distribution box:** All webs of the box shall be assumed to share the dead load equally. The share live load between the outer and inner webs of the box shall be calculated by any rational method such as Morrice & Little Massonet, Rowe, etc.
- (f) **Detailing of reinforcement in soffit of RCC boxes:** Spacing of main bars of the RCC box placed in soffit between ribs (under tension) shall not be more than 150mm. Whenever main bars are curtailed, 8mm bars shall be provided in curtailed portion, so that spacing at any section is within 150 mm c/c. At top of soffit slab, 8 mm bars spaced not more than 150mm c/c shall be provided in the longitudinal direction (below transverse steel) all throughout the length. This steel may be considered as a part of main steel of the span. Spacing of longitudinal at top and bottom of soffit shall be such that the crack width is limited to provisions of IRC 21:1987. At all haunches and fillets in cross girders, 8mm bars @200 mm c/c in both direction shall be provided as haunch steel.
- (g) **Stresses due to temperature variation:** Difference of temperature at the top of deck slab and bottom of soffit is likely to be 150 degree C. Stresses generated in the components of the structure during service may be calculated by any rational method and accounted for in the design. In the absence of data following temperatures may be considered.

Top of deck slab		45 degree C
Bottom of deck slab		30 degree
Mid depth		27 degree
Top of soffit		28 degree
Bottom of soffit		30 degree

4.12.4 Prestress concrete Structure: Design of Prestressed concrete structures shall be in accordance with, with revised criteria (IRC18) of 1985.

4.12.5 Partial Prestressing: If continuous prestressed concrete structure is envisaged partial prestressing will be acceptable. Permissible tensile stress in concrete shall be limited to

11 Kg./sq Cm. While casting cubes for works test, cylinders shall also be cast and split test shall be carried out. The mix design shall satisfy the requirement of compressive strength and shall be such that the tensile strength of concrete is not less than 33 Kg./sq Cm. For dead load effects plus 50% live load moments, the structure shall be designed as a fully prestressed structure.

- 4.12.6 Rider Span:** Rider span shall be generally 5 m. The span shall be anchored at articulation with a bearing. Which shall be designed to take rotation at articulation.

At abutment end a bearing, designed for rotation and linear movement shall be provided. Width of expansion gaps shall be designed to accommodate rotation and linear movement of the deck and the deflection of the abutment structure.

- 4.12.7 Deck slab for RCC Superstructure:** Wherever cross girders are provided the deck slab shall be designed as a two way slab spanning over the ribs and cross girders. Minimum thickness of deck slab shall be 200 mm. Thickness at the end of cantilever shall not be less than 150 mm.

- 4.12.8 M-25:** Concrete to be used in superstructure for spans up to 9.00 meter and M 30 for the spans more than 9.00 meter.

4.13 Other items.:

- 4.13.1:** Expansion joints of approved type as given in the departmental drawing shall be provided at the junctions of superstructures as required.

- 4.13.2:** The spacing of the drainage outlets, which shall conform to the requirements of clause 117 of IRC Specifications and Codes of Practice for Road Bridges Section 1 shall not exceed 9 meters. Generally these outlets shall be uniformly spaced by the side of each road kerb in relation to the span.

These outlets shall be so provided that the rain water drained by them is not directed towards any part of superstructure or substructure component. Outlets shall project 75mm beyond the outer face of the structure.

- 4.13.3:** The type of parapet chosen shall be such as to go well with the superstructure spans proposed and add to the aesthetic appearance of the bridge.

- 4.13.4:** Suitably designed wing or return walls to retain the earth behind the abutment and to prevent it from fouling with the bearings shall be provided along with the abutments.

- 4.13.5:** If open foundations are to be provided for the wing walls or returns they shall be founded at the same level as suggested for non-load bearing abutments and shall be provided with proper construction joints with the abutment.

- 4.13.6:** If by a design of cantilever type of RCC return wall, the tenderer's design encroaches on the minimum clear linear waterway specified in the design data, the waterway shall be increased suitably without any extra cost to the Department.

4.14 Load test:

- 4.14.1:** The contractor shall have to carry out within lumpsum cost a load test on any one span of the structure for the designed static and dynamic loads or their equivalent and in a manner as may be decided by the Engineer-in-charge. The load shall be placed gradually, retained for 24 hours and then removed gradually.

4.14.2: The Engineer-in-charge may also instruct that a load test shall be made on any part of the bridge structure if in his opinion such a test be deemed necessary for any one or more of the reasons specified below: -

- i:** The work test cubes failing to attain the specified strength
- ii:** Shuttering being prematurely removed.
- iii:** Concrete being improperly cured.
- iv:** Any other circumstance(s) attributed to the negligence on the part to the contractor which in the opinion of the Engineer-in- Charge results in the structure of part thereof being of less than the expected strength:
- v:** Any reason other than the foregoing.

4.14.3: The contractor shall quote rates for load testing of component, units of the structure, like one unit of the foundation, one unit of the superstructure etc, along with the tender.

4.14.4 If the load test is to be made: -:

- i:** Solely or partly for the reason(s) given in clause 4.14.2 the test shall be carried out by the Contractor at no extra cost to the Department.
- ii:** As mentions in clause 4.14.1 if load test on more than one span is required the cost of the same shall be reimbursed to the Contractor at the rate tendered by him, provided the test results thereof are found to be satisfactory; and
- iii:** For any other reasons, except mentioned in Clause 4.14.2, the payment for the test shall be made to the contractor at the rate quoted by him, irrespective of the result of such test.

4.14.5: In the event load testing being ordered by the Engineer-in-Charge, the Contractor shall.

- i:** Prepare all necessary calculations and details of arrangements for such load, mode and of method of carrying out the test, the application of loads, duration of testing the load, the equipment to be provided and observations to be made during and after placing the loads in position etc.
- ii:** Make all necessary arrangements for the observations, the centering, equipment etc., That may be needed for measuring the settlements, deflections, etc. required for the test, to the entire satisfaction of the Engineer-in-Charge.
- iii:** Provide labour and made all observations during the test.

4.14.6: The load test shall be carried out in the presence of contractor or his representative, The Engineer-in Charge, shall then communicate as to whether the test has been satisfactory or not or any further tests or reconstruction or strengthening are necessary to correct any faults revealed by the test.

4.14.7: Any defects noticed in the structure or any damage done to the bridge at the time of testing which affects or is likely to effect the strength of the bridge shall be rectified by the contractor at his own cost by remedial measures or replacement as approved by Engineer-in-Charge.

4.14.8: When the tests are declared by the Engineer-in-Charge as having been completed, the Contractor will remove all loadings which might still be on the bridge as well as on the surroundings.

4.15 Lumpsum offer based on Departmental designs: The outline design mentioned in Annexure-M-contains general arrangement drawing of the bridge only and gives following broad details:

- (a) Length of bridge:
- (b) Formation level:
- (c) Foundation level:
- (d) Broad outline details and type of foundations, piers, abutments and returns, bearings and superstructure.
- (e) The design loading hydraulic data for design and code of reference on which the outline design is based as given in the N.I.T. Chapter IV

Detailed working drawings, giving dimensions of members and specifications will be based on the above basic factor (a) to (e). Contractor(s) lumpsum offer based on the aforesaid outline design shall include construction of the complete structure as per the aforesaid detailed design and drawings. Modifications in the dimensions of structural members if found necessary, while working out the details shall have to be carried out by the contractor within the lumpsum cost it however changes in items (a) to (e) above are required to be done the lumpsum cost would be adjusted as per the provision in the agreement. In respect Contractors own design, if during execution it becomes necessary to change the basic data of the design as given in the Annexure 'N' suitable adjustment shall be made in the lumpsum cost according to the relevant conditions of the contract agreement.

4.16 Change in alternative design: On award of the contract, based on Contractor(s) design the contractor may be permitted to modify the design excluding span arrangements without any variation in the lumpsum price provided the modified design satisfies the requirements of the contract in all respects. The dimensions of the structural members as shown by the contractor on the tender drawing may be increased or decreased, if necessary, so as to satisfy the requirements of this contract in all respects.

4.17 Basic foundation levels: The basic levels of foundation in contractors design shall not be higher than the levels shown in the departmental drawing in case the location of pier is identical to the one in the departmental drawing. Whenever the pier locations are changed, the foundation levels shall not be higher than foundation levels obtained by straight line interpolations between foundation levels as indicated in departmental drawing. In case bore data is given in departmental documents and it contains rock the basic foundations level for the lumpsum cost shall be lower of the following two levels.

- a:** Foundation level interpolated from the foundation level in departmental drawing and as stated above.
- b:** In case of foundations resting on rock, foundations level shall be 1.5 M in soft rock and 0.6 M in hard rock. The rock levels at locations of foundations shall be arrived at by straight line interpolation of rock levels shown in bore data given in the N.I.T.

4.18 Confirmatory borings: Confirmatory borings trial pits shall have to be taken at the location of each foundation within the lumpsum cost. On award of the work, contractor shall take confirmatory bores up to 4 M below design foundation level. The bore data

shall be recorded as laid down in IRC 78. Approval of foundation level shall be given on examining results of confirmatory bores.

- 4.19:** All portions of faces of RCC and prestressed concrete members either fully exposed or lying within a depth of 0.5 M below the level of perennial submergence under water, Soil of soil water system shall be reinforced for shrinkage of temperature. This reinforcement shall be provided in two directions at right angles to each other in a plane parallel to the surface under consideration and shall be spaced 300 mm maximum with minimum 250 Sqm of steel area per meter in each direction for all grades of reinforcement. Reinforcing for shrinkage and temperature e.g. main longitudinal reinforcement distribution reinforcement, distribution reinforcement in slabs web reinforcement in beams and ties links etc.
- 4.20. Submersible bridge. (a):** Horizontal pressure due to water current on the submerged deck of the bridge shall be assessed in accordance with clause 213.1 of IRC by taking $K=1.5$.
- b:** The submerged deck structure and the supporting structure shall be designed for full buoyancy effect. In respect of hollow box type of deck, the volume of hollow portion may be ignored, if adequate opening are provided in the structure in order to ensure that the water level inside and outside the deck rises and falls to the same level. This rise and fall of flood level may be assumed to 0.2 M/hour. If a box section is adopted for submersible bridge it shall be a prestressed box with sufficient clear depth of facilitate inspection during service.
RCC box is not acceptable.
 - c:** Adequate anchorage shall be provided between the deck and pier cap to prevent displacement due to horizontal force of water on deck and uplift effect, due to buoyancy.
 - d:** Elastomeric bearing will be acceptable if adequate arrangement of anchorage are made at supports to prevent displacement and lifting up due to horizontal water force and buoyancy.
 - e:** Submersible bridges shall be provided with 225mm kerb and railings in accordance with clauses 112 & 116 of IRC 5. Recesses may be left in the kerb at distance of 2 to 3 M to discharge flood water from the deck.
- 4.21 Lay out of the bridge:** Before commencement of the work, the contractor shall obtain the correct site, centre line or the bridge and location of the abutments and piers from the Engineer-in-Charge of the work. The control pillars shall be fixed at each end of the bridge about 15 meters away from the location of the abutments or end piers. The top of Reference pillars shall be at a suitable level (so that the centre line of all piers could be checked) and its size shall be adequate (width about 1/3 of the height). The centre line of the bridge and the formation level shall be inscribed on a concrete coping over the reference pillars.
- 4.22 Starting point:** At the bottom of one of the control pillars, a firm starting point may be established on the centre line and all distances of piers and abutments may be measured from this starting point to avoid errors in the length of the bridge. The distance of each pier may be measured from the starting point and checked from pier to pier. Reference pillars indicating centreline shall then be fixed at the location of each pier. There will be four pillars, two along the length of the bridge and two along the river direction upstream and downstream of the bridge. The centre line shall be correctly marked on the concrete coping over these reference pillars.
- 4.23 Correct cross section:** Before commencing the work the Resident Engineer of the Contractor and the Engineer-in-Charge of the department shall take a cross section of the

bridge jointly. The levels will be taken from the same Bench mark which has been adopted for carrying out the surveys. If the actual bed levels of the river are found to vary from the levels given in the outline design supplied with the tender, the contractor shall bring the fact to the notice of the C.E. in the event of variation, it is desirable to check the Bench mark and the survey plans before reporting the fact to the Chief Engineer.

- 4.24 Daily water level:** A record of the daily water level in the river shall be maintained jointly. If this level is found to vary substantially from the low water level mentioned in the N.I.T., the fact shall be brought to the notice of the Chief Engineer immediately.
- 4.25 Testing of concrete:** All concrete used in the bridge structure shall be mixed in power driven mechanical mixers and vibrated. The concrete laid under water should not be vibrated. The contractor's lumpsum quotation shall include the cost of testing of concrete cubes. Installation of a Calibrated Testing Machine at site by the contractor will be acceptable. The testing will however, be done under the supervision of the Engineer-in-charge or his authorized representative. The contractor shall furnish a test certificate of the concrete test machine, to be used by him on the site of works sampling, strength test of concrete and acceptance criteria shall be in accordance with clauses 302.6.4.2 & 302.6.4.3 of IRC: 21:1987
- 4.26 Finish of concrete surface:** Good surface of the exposed reinforced concrete members must be ensured by the contractor by using plane and true to shape form work. On striking off the forms, the slight local imperfections may be corrected by adequate touching and by rubbing the projections by corborandum stone. Plastering shall not be normally permitted on RCC surfaces. Corrections of defects must be done as desired by the Engineer-in-charge. Tolerance in form work shall be in accordance with clause 10.1 of IS: 456.
- 4.27 Rectification:** Any heavy obstruction to river course or any heavy excavation done by the contractor/firm shall be rectified and the river bed brought to its original level on completion of work and contractor/firm shall fill up any pits, he might have made to the entire satisfaction of the Engineer-in-Charge. The structure should be cleared off all the debris and dirt and the bridge and site handed over in a clean and fit state.
- 4.28 Approaches work and approach slab:** Lumpsum cost shall include the work of suitably designed filter media as per clause 2503 / 309.3.2(b) of M.O.S.T. Specifications behind abutment and return in full length and height above natural ground level. Lumpsum cost shall also include the cost of construction of the approach road mentioned in the General Arrangement Drawing. The work for earth work & WBM/WMM shall also be carried out as per the specifications mentioned in annexure M. The earth work up to bottom of dirt wall shall be done before laying last span on abutment and adjoining support. RCC approach slab will be done by the contractor, the cost of which will be included in the lumpsum offer.
- 4.29 Size of Aggregate:** Size of aggregate to be used in plain concrete, RCC and prestressed concrete structure shall be in accordance with clause 1705 of M.O.S.T. specifications. However, for sections of structural components of 300 mm thickness and less only 20mm and down graded aggregate shall be used.
- 4.30 Applicability of conditions:** Conditions 2, 1 to 2.40, 3.29 and 4.1 to 4.28 shall supersede anything contrary to them said in conditions 1.1 to 1.18.

**ANNEXURE- A - MODEL RULES RELATING TO LABOUR, WATER SUPPLY AND
SANITATION IN LABOUR CAMP: TND0010160000000000PWDCG84401.doc**

**ANNEXURE- “A”
MODEL RULES RELATING TO LABOUR, WATER SUPPLY AND SANITATION IN
LABOUR CAMPS**

Note: These model rules are intended primarily for labour camps which are not of a permanent nature. They lay down the minimum desirable standard which should be adhered to. Standards in Permanent or semipermanent labour camps should not obviously be lower than those for temporary camps.

1. **Location:** The camp should be located in elevated and well drained ground in the locality.
2. **Labour:** Hut to be constructed for one family of persons each. The layout to be shown in the prescribed sketch.
3. **Hutline:** The huts to be built of local materials. Each hut should provide atleast 20 Sqm. of living space.
4. **Sanitary facilities:** There shall be provided latrines and urinals atleast 15 M away from the nearest quarter separately, for men and women specially so marked on the following scale.
5. **Latrines:** Pit provided at the rate of 10 users or two families per set. Separate Urinals as required as the privy can also be used for this purpose.
6. **Drinking water:** Adequate arrangement shall be made for the supply of drinking water. If practicable, filtered and chlorinated supply shall be arranged. Where supply is from intermittent sources, an overhead covered storage tank shall be provided with a capacity of five litres per person per day. Where the supply is to be made from a well it shall conform to the sanitary stands. Laid down in the report of the Rural Sanitation Committee. The well should be at least 30 metres away from any latrine or other sources of pollution. If possible a hand pump should be installed for drawing the water from well. The well should be effectively disinfected once every month and quality of water should be got tested at Public Health institution between each work of disinfection.

Washing and bathing should be strictly prohibited at places where water supply is from a river. The daily supply must be disinfected. In the storage reservoir and given at least 3 minutes contact with the disinfectant before it is drawn for use.

7. **Bathing and Washing:** Separate bathing and washing place shall be provided for men and women for every 25 persons in the camp. There shall be a gap and space of 2 Sq.M. for washing and bathing. Proper drainage for waste water should be provided.
8. **Waste disposal:** Dustbins shall be provided at suitably place in camp and the residents shall be directed to throw all rubbish into these dustbins. The dustbins shall be provided with covers. The contents shall be removed every day and disposed off by trenching.

9. Medical facilities.

- a) Every camp where 1000 or more persons reside shall be provided with whole time, doctor and dispensary. If there are women in the camp a whole time nurse shall be employed.
- b) Every camp where less than 1000 but more than 250 persons reside shall be provided with dispensary and a part time nurse/midwife shall also be employed.
- c) If there are less than 250 persons in any camp a first aid kit shall be maintained in- charge of the whole time persons.

All the medical facilities mentioned above shall be for all residents in the camp, including a dependent of the workers, if any, free of cost.

10 Sanitary Staff: For each labour camp there should be qualified sanitary Inspector & Sweepers should be provided in the following scale:

- | | |
|--|--|
| 1. For Camps with strength over 200 but not exceeding 500 persons. | One Sweeper for every 75 persons above the first 200 for which three sweepers should be provided |
| 2. For camps with strength over 500 persons | One sweeper for every 100 persons above the first 500 for which six Sweepers should be provided. |

ANNEXURE – B - CONTRACTOR’S LABOUR REGULATIONS:

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ANNEXURE – “B”**CONTRACTOR’S LABOUR REGULATIONS.**

The Contractor shall pay not less than fair wage to Labourers engaged by him in the work.

Explanation:

- a) “Fair Wages” means wages whether for time or piece work as notified at the time of inviting tenders for the works and where such wages have not been so notified the wages prescribed by the Department for the division in which the work is done.
- b) The Contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid a fair wage to labourers indirectly engaged on the work including any labour engaged by his sub-contractors in connection with the said work as if labourers had been immediately employed by him.
- c) In respect of all labour directly or indirectly employed on the works on the performance of his contract, the contractor shall comply with their cause to be complied with the labour act in force.
- d) The Executive Engineer/Sub Divisional Officer shall have the right to reduce from the money due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfilment of the conditions of the contract for the benefit of the workers, non-payment of wages or the deductions made from his or their wages, which are not justified by the terms of the contract or non-observance of regulations.
- e) The contractor shall be primarily liable for all payments to be made under and for the observance of the regulations aforesaid without prejudice to his right to claim indemnity from his sub-contractors.
- f) The regulations aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be breach of this contract.
- g) The contractor shall obtain a valid licence under the contract (Regulations and Abolition) Act enforce and rules made there under by the competent authority from time to time before commencement of work and continue to have a valid license until the completion of the work.

Any failure to fulfil this requirement shall attract the penal provisions of this contract arising out of the resulted non-execution of the work assigned to the Contractor.

ANNEXURE – D- FORM OF CERTIFICATE OF INCOME TAX:

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ANNEXURE – “D”**FORM OF CERTIFICATE OF INCOME TAX TO BE SUBMITTED BY
CONTRACTOR TENDERING FOR WORKS CASTING
RS. 2.00 LAKHS OR MORE.**

1. Name and Title (of the company/firm HUF) or individual) in which the applicant is assessed to Income Tax and Address for the purpose of assessment.
2. The Income tax Circle /Ward /District in which the applicant is assessed to income tax.
3. Following particulars concerning the last Income tax assessment made.
 - a) Reference No. (or GIR No.) of the assessment
 - b) Assessment year and accounting year.
 - c) Amount of total income assessed.
 - d) Amount of tax assessed IT, SI, EPT, BPT,
 - e) Amount of tax paid IT, ST, EPT, B.P.T.
 - f) Balance being tax not yet paid and reasons for such arrears.
 - g) Whether any attachment or certificate proceedings pending in respect of the arrears.
 - h) Whether the company or firm or HUF on which the assessment was made has been or is being liquidised wound up, dissolved, partitioned or being declared insolvent, as the case may be.
 - i) The position about latter assessment namely whether returns submitted under Section 22(1) or (2) of the Income Tax Act, and whether tax paid under, “Section 18A of the Act and the amount of tax so paid or in arrears.
4. In case there has been no Income tax assessment at all in the past, whether returns submitted under section 21(1) or (2) and 18-A(3) and if so, the amount of Income Tax returned or tax paid and the Income Tax Circle/ Ward/District concerned.
5. The Name and address of branch (es) verified the Particulars set out above and found correct subject to The following remarks.

Dated:

Signature of I.T.I.

Circle / Ward / District

Annexure G-I:

(Revised from Bank Guarantee Bond)

(GUARATEE BOND)**(In lieu of performance Security Deposit)
(To be used by approved Scheduled bank))**

1. In consideration of the Governor of chhatisgarh (here in after called the government having agreed to exempt (Herein after called the contractor (s) from the demand under the terms and conditions of an agreement dated made between for the work (Name of wrok) (here in after called the said Agreement) of security deposit for the due fulfillment by the said contractor (s) of the terms and conditions contained in the said agreements on production of a bank Guarantee for Rs. Rupees..... Only we. (.) (hereinafter referred to as " the bank (at the request of the said contractor (s) do here by undertake to pay the Govt., an amount not exceeding Rs. against any loss or damage caused to or would be caused to or suffered by the Government, by reasons of any breach by the said contractor (s) of the terms or conditions contained in the said agreement.
2. We (.) do here by undertake to pay the amount due and payable under this guarantee without any demur merely on demand from the Government stating the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Government by reason of breach by the said contractor (s) of any of the terms or conditions contained in the said agreements or by reasons of the contractor (s) failure to perform the said agreement, Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee, However our liability under this Guarantee.shall be restricted to an amount not exceeding
3. We undertake to pay to the Government any money so demanded not with standing any dispute or disputes raised by the contractor (s) in any suit or proceedings pending before any court or tribunal relating thereto, our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor (s) shall have no claim against us for making such payments.

4. We (.) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of said agreement and that it shall continue to be enforce able till all the dues o the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till the Executive Engineer P.W.D. certified that the terms and conditions of the said agreement have been fully and property carried out by the said contractor (s) and terms and conditions of the said agreement have been fully and property carried out by the said contractor (s) and accordingly discharged this guarantee, unless a demand to claim under this Guarantee is made on us in writing on or before the (here indicate a date which falls 9 months beyond the due date of completion of the work) we shall be discharged from all liability under the guarantee.
5. We (.) further agree with the government that the Govt, shall have the fullest liberty without our consent and with out affecting in any manner our obligation here under to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor (s) from time to time or to postpone for any time or for time to time any of the powers exercisable by the Govt. against the said contractor (s) and to for bear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reasons of any such variations. or extension being granted to the said contractor (s) or for barnacle, act or commission on the part of the Govt. or any indulgence by the Govt. to the said contractor (s) or by any such matter or thing what so ever which under the lay relating to sureties would but for this provision have effect of so relieving us.
6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor (s).
7. We (.) lastly under take not to revoke this guarantee during its currency except with the previous consent of the Government in writing :-

Dated the day of for ()
.....

(>) indicate the Name of the Bank

Annexure G-II

To,

.....

.....

.....

| Dear Sir,

We enclose our Fixed Deposit Receipt/Cash Certificate other similar instrument No. for Rs. in favour of Designation of the Officer concerned in lieu of deposits required from for the due fulfillment by him/them of the terms of contractor dated..... for during the period commencing from thereof if any.

Yours faithfully,

For and on behalf.

Please specify the nature of the instrument whom instrument similar to fixed deposit receipts are tendered and delete item not applicable.

ANNEXURE II - SAFETY CODE:
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ANNEXURE II

SAFETY CODE

Scaffolding:

- (i) Suitable scaffold should be provided for workman for all works that cannot safely be done from the grounds or from solid construction except such short period work as can be done safely from ladder is used on extra Mazdoor shall be engaged for holding the ladder for carrying materials as well suitable foot holes and hand holds shall be provided on the ladder and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ to $\frac{1}{4}$ Horizontal and 1 vertical).
- (ii) Scaffolding or staging more than 12 M above, the ground floor swung or suspended from an overhead support or erected with stationer/support shall have a guard rail property attached, bolted, braced or otherwise secured at least 1 meter high above the floor platforms of such scaffolding or staging and extending along the entire length of the outside the ends thereof with only such opening as may be necessary for the delivery of the materials. Such scaffolding or staging shall be fastened as to prevent it from swaying from the building of structure.
- (iii) Working platform gangways and stairway should be so constructed that they should not away unduly or unequally and if the height of the platform of the Gangway or the stairway is more than 3.54 metres above ground level and or floor level they should be closely bearded, should have adequate width and should be suitably fenced as described (ii) above.
- (iv) Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the falling of persons or materials by providing suitable fencing or railing whose minimum height shall be 1 metre.
- (v) Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable ladder shall be over 9 metre in length while the width between side rails inring ladder shall be in no case be less than 0.3 metres from ladder upto and including 3 meter length. For longer ladders this width should be increased at least 2 cm. For each additional meter of length. Uniform step spacing shall not exceed 0.3 M adequate precaution shall be taken to prevent danger form electrical equipment. No material on any of the work site shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall also provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defence of every suit action or other precautions of law that may be brought by any person for injury sustained owing to neglect of the above and to pay any damages and costs which may be awarded in any such suit action or proceeding to any such person or which may with consent of the contractor be paid to compromise by any such person.

2. **Excavation and Trenching:** All trenches 1.2 metre or more in depth, shall at all times be supplied with at least one ladder for each 30 Metre in length of friction thereof. Ladder shall be extended from bottom of the trench to atleast 1 metre above the surface of the ground. The side of trenches which are 1.5 metre or more in depth shall be stepped back to give suitable slopes or securely held by timber bracing so as to avoid the danger of sides to collapse The excavated materials shall not be placed within 1.5 metre of the edge of the trench or half of the depth of

the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or under cutting shall be done.

3. **Demolition:** Before any demolition work is commenced and also during the process of the works.
 - (a) All roads and open area adjacent to the work site shall either be closed or suitably protected.
 - (b) No electric cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.
 - (c) All precautionary steps shall be taken to prevent danger to persons employed from risk of fire or explosion of flooring. No floor roof or other part of the building shall be so overloaded with debris of materials as to render it unsafe.
4. **Painting:** All necessary personal safety equipment as considered adequate by the Engineer-in-charge should be kept available for the use of person employed on the site and maintained in a condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment by those concerned.
 - (a) Workers employed on mixing asphaltic materials cement lime mortars shall be provided with protective footwear and protective goggles.
 - (b) Stone brackets shall be provided with protective goggles and protective clothing, and seated at sufficiently safe intervals.
 - (c) Those engaged in welding works shall be provided with welder's protect.
 - (d) When workers are employed in sewers and manholes which are in use, the Contractors shall ensure that the manhole covers are open and are ventilated atleast for an hour before the work shall be coronet off with suitable railing and provided with warning signals or boards to prevent accident to the public.
 - (e) The Contractor shall not employ men below the age of 19 and women on the work of painting with products containing lead in any form whenever men above the age of 18 are employed on the work of lead painting the following precautions should be taken.
 - (i) No paint containing lead or lead shall be used except in the from of paste or ready made paint.
 - (ii) Suitable face masks should be supplied for use by the workers when paint applied in the from of spray or a surface having lead paint dry rubble and scrapped.
 - (iii) Overhauled shall be supplied by the contractor to the workman and adequate facilities shall be provided to enable the working painters to wash during the cessations of work.
5. **Drawing:** When the work is done near any place where there is risk of drawing all necessary equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment for all injuries likely to be sustained during the course of the work.

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- (a) Every crane driver or hoisting machine operator shall be properly qualified and no person under an age of 21 years should be in-charge of any hoisting machine including any scaffold which gives signals to the operator.
 - (b) In case of every hoisting machine and every chain ring lowering or as means of suspensions. The safe working load shall be ascertained by adequate means. Every hoisting machine and gear referred to above shall be plainly marked with the safe working load. In case of hoisting machine having a variable safe working load of the conditions under which it is applicable shall be clearly indicated. No part of any machine or of any gear referred to above in this paragraph shall be loaded beyond the safe working load except for load purpose of testing.
 - (c) In case of departmental machine the safe working load shall be notified by the Electrical Engineer-in-charge. As regards contractor's machine the contractor shall notify the safe working load of the machine to the Engineer-in-charge, whenever he brings any machinery to site of work and get verified by the Electrical Engineer concerned.
 - (d) Motors, gearing transmission, Electric wiring and other dangerous part of the hoisting appliance should be provided with efficient safe guards and with such means as well reduce adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load being coming accidentally dislodged. When workers employed on Electrical installations which are already unregistered insulating mats wearing apparel such as gloves sleeves and boots as may be necessary should be provided the workers should not wear rings, watches and carry keys, or other materials which are good conductors of electricity.
7. All scaffolds, ladders and their safety device mentioned or described herein shall be maintained in safe condition and no scaffold ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities shall be provided at or near places of work.
8. These safety provisions should be brought to the notice of all concerned by display on a Notice Board at prominent places at the work spot. The persons responsible for compliance of the safety code shall be named therein by the contractor.
9. To ensure effective endorsement of the rules and regulations relating to safety precautions the arrangement made by the contractor shall be open to inspection by the Labour Officer, Engineer-in-charge, or the Department or their representatives.
10. Notwithstanding the above clause (1) to (9) there is nothing in these to except the contractors to exclude the operations of any other act or rule in force in the Republic of India.

Tender Items :-

Sr. No	Group Id	Item Ref No	Item Description
1	01	Const of High level Bridge	Construction of High Level Bridge across

Tender Item Details**Group Id:****Item Ref No:****Description:**

Lenght of Bridge with Returns :
Over all width:

Item Type:**Estimated Value:****Unit:****EMD Value:****Time Period:**

ANNEXURE H-1

FOR ROAD AND BRIDGE/CULVERTS: Notwithstanding provisions of clause 901.1 of the specifications, it would be optional for the contractor to set up his own field laboratory near the site of work, if the amount of contract inclusive of tender premium does not exceed Rs. 5.00 lakhs.

For Building Works:

- i) Rates include the element of testing of samples of various materials brought by the contractor for use in the work as per list of mandatory tests attached herewith. Frequency of such tests to be carried out shall not be less than the prescribed frequency. Contractor shall also have to establish a field laboratory at site to be approved by the Engineer-in-charge. The tests shall have to be conducted by the contractor's material under the supervision of Engineer-in-charge or his authorized representative. A record of such tests shall be maintained in a duplicate register at site of work. Duplicate copies of such tests shall be submitted to office along with running account bills. The original register shall also be submitted along with the final bill. Failure to conduct any of the test or not up to the prescribed frequencies would invite following consequences.

The Engineer-in-charge may reject the work, but if in his opinion the work can be accepted despite the aforesaid shortcomings, then he may do so subject to a recovery of Rs. 100/- for each default and simultaneously inform the Superintending Engineer. However, it would be optional for the contractor to set up his own laboratory if the amount of contract (inclusive of tender premium) does not exceed Rs. 5.00 Lakhs.

- ii) As regards steel reinforcement;
 - a) Mild steel and medium tensile steel bars shall confirm to IS: 432 (Part-1)
 - b) Hot rolled deformed bars shall confirm to IS: 1139.
 - c) Cold Twisted bars shall confirm to IS: 1786.
 - d) Hard drawn steel wire fabric shall confirm to IS: 1566 and
 - e) Rolled steel made from structural steel shall confirm to IS: 226.

All reinforcement shall be free from loose mill scales, loose rust and coats of paints, oil, mud or other coating which may destroy or reduce bond.

Only such steel as is obtained from main producers of steel e.g., SAIL, TISCO, TISCO or such steel rolling mills as are having license from the B.I.S. to manufacture steel for reinforcement, shall be allowed to be used in the work.

The contractor shall have to produce Test Certificate in the proforma prescribed/approved by B.I.S. from the manufacturer for every batch of steel brought to site of work.

Before commencement of use of steel, from any batch, brought to site of work by the contractor, the Engineer-in-charge shall arrange to get samples tested for nominal mass, tensile strength, bend test and rebend test from any Laboratory of his choice at the cost of contractor. The selection of test specimens and frequency shall be as per relevant I.S. specification of steel to be used.

- iii) Where, contract provides for cement to be arranged by the contractor himself, only I.S.I. marked cement of relevant I.S. standard specifications shall be allowed to be used in the work subject to the following tests. The arrangement for necessary equipment and testing shall have to be made by the contractor, himself at a site to be decided by the Engineer-in-charge. All expenses shall be borne by the contractor. Any lot of cement brought to site by the contractor would be permitted to be used in the work. Under the supervision of the

Engineer-in-charge or his authorities. Representative as hereinafter. The record of the tests results shall be maintained in the register referred in subsequent para.

Type of Test	Frequency	Minimum
a) Test for initial & final /setting time as per IS: 3536 – 1966	1 st Test for 10 tonne or part thereof	10 tonne
b)Test for determination of compressive strength of cement as per IS: 3536-1966	1 st test for 50 tonne or part thereof.	50 tonnes

A Duplicate register as per format hereunder shall be maintained at site of work. Extract certified copies of the entries for each month shall be submitted to the Engineer-in-charge by the contractor. The original register shall also be submitted to the Engineer-in-charge on completion of the work by the contractor.

S. No	Place of receipt of cement	No. of bags	Name and address of firm from whom purchased	Signature of contractor or his authorised representative	Signature of authorised representative of Engineer-in-charge.	Results of test for initial and final setting time	Result of tests for compressive strength of cement	Remark
1	2	3	4	5	6	7	8	9

When the strength of concrete required is up to M-20, then O.P.C. conforming to I.S.: 269-1989 or P.P.C. conforming to IS : 1498-1976 May be used.

When the strength of concrete required is more than M-20 but up M-30, the O.P.C. Conforming to IS: 8112-1989 shall be used.

For prestressed concrete works and when the strength of concrete required is more than M-30, the OPC conforming to IS: 12269-1989 shall be used.

Nominal mix would be adopted for Cement concrete M-7.5 M-10 M-15 and M-20 Design mix shall have to be adopted for concrete of higher strengths.

- i) If any item of work is found to be substandard by the Engineer-in-charge is to the opinion that the same is structurally adequate and can be accepted at a reduced rate, then in such cases, the Engineer-in-charge shall have to submit proposals for appropriate reduction of rates supported by an analysis, in justification thereof, though a D.O. Letter to the Superintending Engineer concerned to obtain his approval expeditiously (ordinarily with

in 15 days) The approved analysis along with orders of the Superintending Engineer shall have to be appended to the bills of the contractor.

- ii) The Contractor shall have to be provided a ruled duplicate register at site named "Site Order Book" it shall be in the custody of departmental supervisory staff. The Engineer-in-charge or his authorized representative may record their instruction in this book, which shall be noted by the contractor or his authorized representative for compliance.

List of mandatory Tests.

Material	Test	Relevant IS code of testing	Field Laboratory Test	Minimum Quantity of material work for carrying out test.	Frequency of testing
1	2	3	4	5	6
Cement concrete or reinforced cement concrete not leaner than M-15	Slump Test	IS: 1199	Field	15 Cum more	15 Cum or part there frequently by Engineer Incharge
Reinforced cement concrete	a) Cube strength	For Building IS: 456 for Bridges/Culverts IRC: 21-1987	Field	15 Cum in slab 5 cum on columns.	15 Cum
Steel (if arranged by the contractor)	a) Tensile strength	IS: 1608	Laboratory	20 tonnes	Every 20 tonne thereof conform IS: 1786-1985
Cement (If arranged by the contractor)	b) Bend test	IS: 1599	Laboratory	-do-	--do--
	a) Test for initial & Final setting.	IS: 403	Field	10 tonnes	IS: 4031-1988
Sand	b) Test for determination of compressive strength of cement.	IS: 4031 Part I	Field	50 tonnes	-do-
	a) Silt content.	IS: 2386 Part II	Field		Every 20 cum or part or more frequently as by the Engineer-in-charge.
	b) Particle size distribution	IS: 2386 Part III	Field		Every 20 Cum or part or more frequently as by the Engineer-in-charge.
	c) Bulking of sand	IS: 2386 Part II	Field		-do-
Stone Aggregate	a) Percentage of soft or deturious material.		Central visual inspection, laboratory test where required by the Engr-in-charge or so specified.	0.00 Cum	As required Engineer-in-charge.

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ANNEXURE - J

List showing the name of near relative working in C.G. P.W.D. as required vide Clause 2.39 of Chapter - II

1. S.No.	2. Name of Divisional Accountant and Gazetted Officers working in C.G. P.W.D.	3. Relational with self	4. Name of Person working with the Contractor who are near relative to Gazetted officer mentioned in column(2)	5. Relationship ¹

Date:

Signature of Contractor

ANNEXURE - K

List of contracts already held by the Contractor in P.W.D. and other Departments at the time of Submission of this tender as required vide Clause 2.30 of the N.I.T.(Chapter - iv)

1. S.No.	2. Name of Work	3. Amount of contract Excluding higher / lower percentage if any	4. Value of work done near excluding percentage	5. Value of balance work excluding percentage	6. Amount of Solvency at the time of registration

Date:

Signature of Contractor

¹ who are near relative to Gazetted officer mentioned in column(2)

ANNEXURE –M**Brief description of the work as per departmental design and Specifications**

1. **Name of the Project:**
Outline drawing No.: -
2. **Length of the Bridge (total length between faces of dirt walls)with span arrangements:**
3. **Description of site alongwith Site plan Drawing Number:** Site plan Attached
4. **Foundation Strata:**
5. **Type of Foundation:**
6. **Foundation levels proposed:**
 - a) **Substructure:a) Piers:**
 - b) **Abutments**
 - c) **Returns: -**
8. **Formation levels:**
9. **Soffit Level:**
10. **Superstructure:**
11. **Bearings:**
12. **Wearing Coat:**
13. **Kerb:**
14. **Expansion joint between spans:**
15. **Approach slab:**
16. **Railings:**
17. **Name plates**

ANNEXURE – N

Leading details, design data specifications and special features(if any) for alternative design for the Construction of a

1. Location: The particulars of location of the proposed bridge

- i) **Name of road::**
- ii) **Distance from nearest Railway station:**
- iii) **Distance from Main town of the road:**
- iv) **Siting:**

2. Hydraulic data

- i) **Name of river:**
- ii) **Design discharge:**
- ii) **H.F.L.:**
- iv) **H.F.L. + Afflux:**
- v) **Design velocity:**
- v): (a) Maximum mean velocity at formation level (to be specified in case of submersible bridge only) when flood level is at formation: _____ - _____
- vi) **L.W.L.:**
- vii) **Lowest bed level:**
- viii) **Does river carry floating timber during floods:**
- ix) **Soffit level of the deck in the central half of the clear opening:**

2. Design Data :

- a) **Width of carriage way:**
- b) **Overall width of the:**
- c) **Minimum vertical clearance Above H.F.L. + Afflux: -**
- d) **Scour level:**

For piers:

For Abutments:
- e) **Foundation levels : Piers:**

Abutments : A - 1:
A - 2:

Returns : A - 1: -
A - 2: -

- f):** Allowable bearing capacity at the foundation location excluding the effects of wind and seismic factors shall be as under :
- i)** For pier foundation : ____60 T / M²____
 - ii)** **For abutments foundation at foundation level:** 60 T / M²
 - iii):** For non load bearing abutments and at foundation other than specified in NIT the safe bearing capacity shall be ascertained from load test result. In the absence of load test, the safe bearing capacity will be assumed as 20 tonnes / Sqm.

4.: Design loading:

- 4.1 Live Loads::** i) One lane of I. R. C. class AA loading as specified in IRC - 6 - 1966 or two lanes of IRC Class A as specified in IRC - 6 - 1966 whichever produces most severe effect(s) for two lane bridges.
- 4.2 Buoyancy:** Buoyancy to be allowed for in the design of the bridge foundations shall be 50 % for foundation resting on rock and 100% for foundations resting on soil.
- 4.3 Seismic effect:** The effect of seismic forces shall be in accordance with provisions of IRC - Publication January 2003

The Bridge is located in Zone ____Two____

Importance factor shall be: ____ One ____

- 4.4:** Soil properties to be taken
for design purpose c=Zero

phi=30 degree

delta= 15 degree

ANNEXURE – O:

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ANNEXURE – “O”**ADDITIONAL SPECIAL CONDITIONS**

1. **Foundation levels and confirmatory boring:** In accordance with IS / IRC Code keeping in view the stipulation of clause 4.5 & 4.18 of the N.I.T contractors are required to carry out confirmatory boring on each pier and abutment locations.
2. **General arrangement Drawing, approval of design:** The tender drawing containing general arrangement of structure must give one type of structural component out of the acceptable types as stipulated in the N.I.T or in these special conditions. No option is acceptable. However, change in design at later data will be examined in accordance with clause 4.16 of N.I.T. Programme of submission & approval of detailed design shall be mutually on award of the contract.
3. **Details in General Arrangement Drawing:** Type of pier, abutment and returns and their foundation levels should be clearly shown in the general arrangement drawing of the contractor.
4. **Conditions of Exposure:** The condition of exposure shall be treated as moderate for this bridge.
5. **Consultant:** A contractor who offers alternative designs should declare the name and address of the consultant. If the said consultant has not done any work of bridge in M.P.P.W.D or Setu Nirmal Nigam, his qualification and experience in design work must be stated.
6. R.C.C bearing shall not be allowed.
7. **Design of box for temperature difference:** The additional stresses generated by the temperature difference may be calculated in accordance with the method contained in a paper entitled “Temperature stresses in concrete bridge decks simple design method by Dr. V. K. Raina published in Bridge and Structural Engineer. If such additional temperature stresses are taken into account, the permissible increase of stresses will be 15% in accordance, with Clause 203 of IRC – 6 of 1986.
8. **Land for construction Camp:** Land for construction camp shall be arranged by the contractor.
9. **Security deposit Clause 1.1 and 2.8 of N. I. T.:** Fifty percent of the security deposit will be refunded on completion, testing and handing over of the bridge, to the department. Remaining fifty percent will be refunded six months after completion or after one monsoons, whichever is later.
10. **Supply of detailed drawing:** The detailed drawing of various component of bridge shall be supplied to the contractor in parts as per the progress of the work. In case the contractor's lumpsum offer based on departmental General Arrangement Drawing, he will have to submit detailed design & drawing of various components for approval as per clause 4.3

11. **Revision in design:** Due to basic data being changed. If, on award of work, it is considered necessary to increase the length of bridge or vary the foundation and / or formation level due to change in the basic hydraulic and sub soil data, the contractor shall, submit revised design to suit the change as ordered without any extra cost on account of the additional design work.
12. But in case there are major changes in the data and the contractor is required to redesign the bridge, the C.E. may at his discretion allow extra payment for design may be commensurate with the extra work involved in the design.
13. If the tenderer, whose tender has been accepted, and after signing the agreement, (i) does not start regular actual physical items of work within 25% (twenty five percent) of the time allowed for completion, or abnormally slowdown the work or (iii) abandons the work, or (iv) merely goes on applying for extension of time; the Executive Engineer shall serve a "show cause" notice with details to the contractor in this regard and if the contractor does not reply, or if his reply is considered not satisfactory (at the sole discretion of the Executive Engineer), his earnest money and the performance security money or the Bank Guarantee in this regard shall be forfeited in favour of the Govt. If the contractor has committed a similar default on earlier occasion (s) in previous three consecutive years the contractor shall be debarred from participating in any future tender of any P.W.D. Division in the State of Chhattisgarh for a period of 2 (two) years from the date of such order, by the authority which had registered him/her.
Such orders & action shall be final binding and conclusive

(13). performance Guarantee:

- (i) The contractor shall also be responsible for performance of work carried out by him for a period of 36 (Thirty six) month beyond the completion of work for which performance security has to be furnished by him @ 5% (five percent) of amount of contract. For this purpose contractor has to submit to the department a Bank Guarantee of 5% amount of the value of work done on every running and final bill

payable to him. If contractor fails to submit bank guarantee of 5% amount of the gross bill, then 5% amount of bill shall be deducted from his running and final bill payment. However, the contractor can get refund of such performance cash security amount deducted if he submits appropriate bank guarantee valid for the period as stated above or 36 (thirty six) month after actual completion.

If require, the Executive Engineer shall ask the contractor to extend the validity period of the Bank Guarantee(s) for such period which he considers it proper and the contractor shall extend the validity period of such Bank Guarantee accordingly. If the contractor fails to extend the period accordingly, the Executive Engineer shall encash the B.G. before the expiry of the validity period.

- (ii) The contractor shall have to carry out all necessary "Rectification" of defects noticed, caused due to any reasons at his own cost within such reasonable period mentioned in such communication notice from the Executive Engineer/Sub Divisional Officers to him.

- (iii) Failure of the contractor to rectify the defects properly in the given period, it shall be open for the Executive Engineer/Sub Divisional Officer to get the defect(s) rectified either departmentally or through other agency (without calling any tender /quotation) and recover the actual cost plus 15 % (fifteen percent) of such cost from the contractor from any sum, in any form, and available with the department or can be recovered as "Arrears of Land Revenue"
- (iv) After two years of completion of construction, 50% (fifty percent) of available performance Bank guarantee shall be returned to the contractor subject to the satisfaction of the Executive Engineer.
- (v) Remaining performance Bank Guarantee as would be remaining (after recovery all cost plus 15% (Fifteen percent) for rectification of defects, if done by the department or through other agency) shall be returned after 3 years of completion.

The performance guarantee will be in addition to the normal security to be deducted as per clause 1 of agreement for the execution of contract.

- 14. The tenderer/contractor shall give in advance authority letter(s) in favour of the Executive Engineer, authorising him to get all Bank's Fixed Deposit receipts, Bank Guarantees (either normal security deposit and or for performance security) to get these Bank Receipts and Guarantee deeds verified and got confirmed from the concerned Bank. It will be only after getting such confirmation that the Executive Engineer shall pay any amount accordingly or refund the equal amount for which BG submitted has been duly verified and confirmed.
- 15. The contractor shall not remove minor mineral from borrow areas, quarries without prior payment of Royalty charges.
- 16. ठेकेदार के द्वारा कार्यादेश की तिथि से 15 दिन के भीतर उनके स्वयं के व्यय पर कार्यकारी रूपांकन तैयार करवाकर विभाग को उपलब्ध कराना होगा, जिसके लिए उन्हें विभाग द्वारा कोई भुगतान नहीं किया जायेगा।