

GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

SBD TENDER DOCUMENT

Notice Inviting Tender: - 04/ 2025-26

FOR

Fabrication, supply, Installation, Testing and Commissioning of 130 nos. of 3600 liters (800 gallon) capacity SS304 grade stainless steel sheet body water tanker mounted on two-wheel steel chassis trolley with IOT controller for alternate arrangements of additional water supply in different districts of Bihar state under PHED for the year 2025-2026 under PH Mech. Division, Patna on turn-key basis with 01-month Trial Run Period and Comprehensive Maintenance for a period of 60 months.

Estimated Cost- 1030.25 lakh

DOCUMENT FOR E-TENDERING ONLY

**IFB, ITB, QUALIFICATIONS, CONDITIONS, SPECIAL
CONDITIONS OF CONTRACT, TECHNICAL
SPECIFICATIONS AND CONTRACT DATA.**

PUBLIC HEALTH MECHANICAL DIVISION, PATNA



**INVITATION FOR BID
(IFB)**

विद्यया ऽमृतमश्नुते
लोकः स्वार्थस्य अक्षिरंजणं विनाम

GOVERNMENT OF BIHAR
PUBLIC HEALTH ENGINEERING DEPARTMENT
OFFICE OF THE EXECUTIVE ENGINEER
PUBLIC HEALTH MECHANICAL DIVISION, PATNA
Qtr NO-741 to 744/ Laal Bahadur Shastri Nagar, Shekhpura, Patna -14
Email id-eemech.phed.patna@gmail.com
RE- Notice Inviting Tender:- 04/ 2025-26 (R1)
NATIONAL COMPETITIVE BIDDING
(Through e-Tender mode only - www.eproc2.bihar.gov.in)

DETAILS OF WORK :- Fabrication, supply, Installation, Testing and Commissioning of 130 nos. of 3600 liters (800 gallon) capacity SS304 grade stainless steel sheet body water tanker mounted on two wheel steel chassis trolley with IOT controller for alternate arrangements of additional water supply in different districts of Bihar state under PHED for the year 2025-2026 under PH Mech. Division, Patna on turn-key basis with 01 month Trial Run Period and Comprehensive Maintenance for a period of 60 months.

Sl. No.	Name of work	Estimated cost (in lakh)	Earnest Money pay online or Offline mode (In lakh)	Cost of B.O.Q / Tender form in Rs. (non-refundable) (payment through online made only)	Bid Processing fee in Rs. (non-refundable) (payment only online mode) in favour of Beltron.	Time of Completion
1	2	3	4	5	6	7
1	Fabrication, supply, Installation, Testing and Commissioning of 130 nos. of 3600 liters (800 gallon) capacity SS304 grade stainless steel sheet body water tanker mounted on two wheel steel chassis trolley with IOT controller for alternate arrangements of additional water supply in different districts of Bihar state under PHED for the year 2025-2026 under PH Mech. Division, Patna on turn-key basis with 01 month Trial Run Period and Comprehensive maintenance for a period of 60 months.	1030.25	20.31	10000.00	5900.00	(i) Fabrication / manufacturing of SS 304 grade water tankers with IOT based system: - 04 months; (ii) Trial & Run: 01 month; (iii) Comprehensive maintenance: 60 months.

2. Date of issue of Notice Inviting Tender : Date: 12.06.2026

3. Period of downloading & uploading of Tender Document: - : From Date 30.06.2026 To 06.07.2026 up to till 15.00 Hrs through on website: www.eproc2.bihar.gov.in
4. Time, date and place of Pre-Bid Meeting: - Date-02.07.2026 at 3.00 PM office of the Zonal Chief Engineer, Public Health Engineering Department Bihar, Raj Banshi Nager, Patna
5. Time and Date of Opening Technical Bid's: - Date: 06.07.2026 at 15.30 PM only on website. www.eproc2.bihar.gov.in.
6. Time and Date of Opening Financial Bids: - To be announced by competent authority only on website/www.eproc2.bihar.gov.in Only
7. Place of Opening of Bids: - On website/www.eproc2.bihar.gov.in Only
8. Period of bids validity: - 180 days
9. Officers inviting Bids: - Executive Engineer
Public Health Mechanical Division, Patna
Qtr NO-741 to 744/ Laal Bahadur Shastri Nagar,
Sheikhpura, Patna -14
10. Any contractor registered with the Central Government any State Government or any PSU or an agency of International or National repute may participate in the Tender but registration with Public Health Engineering Department, Govt. of Bihar will be essential after issue of Letter of Acceptance (LOA) for the work.
11. In the light of notification number – 8550, dated – 07-08-2024 (Bihar Procurement Preference Policy – 2024) of the Industries Department of the Government of Bihar, preference will be given to MSEs (Micro and Small Enterprises) located in the state of Bihar as per rules.
12. For detailed information tenderer can visit website www.eproc2.bihar.gov.in and www.phed.bihar.gov.in.
13. While participating in e-Tender process, the contractor shall have to get themselves registered to get user ID, Password and digital signature. This will enable them to access the website www.eproc2.bihar.gov.in and download /participate in e-Tender process.
14. E-Tender documents can be downloaded from and dully filled documents can be uploaded only on website www.eproc2.bihar.gov.in.
15. Tenderers /Contractor/Agency can access Tender documents on the above-mentioned website, fill them and submit the completed Tender documents as Electronic Tender/bid on the website itself only. Bidder/Contractor/Tenderer shall attach Scanned copies of all paper with "Page Number" (no document to be repeated) ie; Earnest Money and the certificates required in Eligibility criteria.
16. Corrigendum /Addendum/Corrections, if any will be published on the website only.
17. The bidders should list up serial No. of scanned documents before uploading, so that the particular document may be located soon on the basis of Serial No/Page No. All documents must be uploaded in PDF, MS Office (Compatibility Mode), JPEG. Claims will not be entertained if uploaded documents will not be able to download/open in the other format.

18. The Tenderers should duly satisfy themselves of Downloading ability/Visibility of scanned uploaded documents.
19. No claim shall be entertained on account of disruption of internet service being used by bidder. Bidders are advised to upload their bids well in advance to avoid last minute technical snags.
20. (a) It is mandatory that Bid processing fee and cost of B.O.Q for Tender (Non refundable) must be paid through Online mode (e-Payment mode) / Internet Payment Gateway (Credit/Debit card), Net Banking, NEFT/RTGS in e-Tender /e-Procurement system.
- (b) "Bids along with necessary online payments must be submitted through e-Procurement portal www.eproc2.bihar.gov.in before the date and time specified in the N.I.T. The department doesn't take any responsibility for the delay/non submission of Tender/non-reconciliation of online Payment caused due to non-availability of internet connection, Network Traffic/Holidays or any other reason".
- (c) Bid Processing Fee and Tender Fee /BOQ Fee has to be paid through e-Payment mode only. Also, the earnest money shall be in the form of Bank Guarantee of any scheduled bank having branch in Patna, in favour of **Executive Engineer (Mech.), P.H. Mechanical Division, Patna** or submit Online Mode (Credit/Debit card), Net Banking, NEFT/RTGS), Tenders not accompanied with earnest money as per above instructions are liable for rejection. Successful tenderers shall be informed by this office to have enter into an agreement within seven (7) day's from the date of being called upon to do so after depositing such amount to make security money to two (2%) percent of value of contract as security money. Failure in compliance of the agreement in time will be liable for forfeiture of earnest money & cancellation of Work order. 8 (Eight) % security will be deducted from each running bill. A scanned copy of the instrument(s) for Earnest Money and cost of tender document (B.O.Q.) to be uploaded. along with the tender documents.
- (d) Departmental Lt. Number-121 dt.27.01.2026 and memo issued by department of information technology, Government of Bihar letter Number 752 dt. 21.08.2020 will be implemented in full.
21. 1% (one percent) welfare labour cess, applicable income tax and GST will be deducted accordingly from contractor's bill. Royalty & other taxes if applicable will be deducted from bill time-to-time as per direction/order of department/ Bihar Finance Code.
22. Regarding Seigniorage Fee, Govt. letter No- 599 dated 06.12.2019 must be followed if needed.
23. Factory license registration in the name of tenderer/bidder is mandatory and it will be mandatory to attach the certificate of registration for the same.
24. Registration is necessary for similar nature of work in the Ministry of Micro, small and Medium Enterprises and it will be mandatory to attach the certificate of registration for the same.
25. The tenderer should have sufficient experience of Similar nature of single work (Fabrication jobs and IOT automation work) in any one of the last 5 years with minimum value 10% of the estimated cost of aforesaid work .The Contractor/Agency /Bidders would be able to invest minimum of cost up to 25% and availability of credit facilities up to 10% of the estimated cost of aforesaid work.
26. Those contractors who have previously manufactured/supplied water tankers under the Public Health Engineering Department and have been informed of any adverse remarks/penalties regarding the quality of the water tankers supplied by them may be barred from participating in this tender. It will be mandatory for the contractor to upload an affidavit

in this regard. If information is received regarding the submission of a false affidavit by the concerned contractor in this regard, then the contractor will be barred from participating in this tender as well as future tenders.

27. Conditional Tender will be rejected.
28. Patna high court judgment in CWJC No. 9941/2022 dated 06-07-2023 will be applicable. In case the quoted rate is serious unbalanced rate additional performance guarantee will have to be deposited at the rate as mentioned in RCD's letter no. 448(s) dated 16.01.2020.
29. Estimated cost and quantities of the work can vary. Earns Money Deposit and Cost of BOQ will change accordingly.
30. Registration is necessary for GST it will be mandatory to attach the certificate of registration for the same.
31. The bidders must submit an affidavit separately with the bid document that they are not liable for disqualification as per clause 4.8 (Instruction to bidders: Section 1 General) of the Bid Document. Submission of Affidavit for this specific work, issued in between the date of NIT and last date for uploading the Tender, in the format as per the **B.O.Q Document**.
32. Tenderers must satisfy himself with the work technical specifications and condition before uploading the Tender. After uploading Tender, no claim will be entertained for the same.
33. In case of more than one successful Tenderers having same minimum quoted rate, successful Tenderer will be decided by lottery system as per guide line of Bihar PWD code.
34. Guidelines given in PHED Letter No. 1675 dt. 13.10.2025, Letter No. 1203 dt. 11.07.2025, letter No. 1145 dt. 03.07.2025 and Letter No. 1036 dt 14.07.2025 & any update circulars/rules by department from time to time must be followed .
35. All the **SS304** grade sheets used for the aforesaid work must be of Indian grade origin (**JINDAL/SAIL/any other standard IS grade**).
36. Proper Storage of materials and safe custody shall be contractor's responsibility till the completion of work. No claim will be entertained for any loss of materials.
37. Condition Given in RCD Letter No. 3162 (S) dt.09.05.2016 & Letter No.2863 (E) dt. 07.06.2017 must be followed.
38. In the form of a Joint venture the tenderer will have to fulfill the criteria of JV as per clause 4.4 (Instruction to bidder section 1 General) of bid documents.
39. According to Notification No. 7435 dt. 14.08.2019 of R.C.D. Government of Bihar, Patna the S.B.D. Clause-25, settlement of Dispute and arbitration has been restored as follows. The settlement of Dispute and arbitration shall be done in accordance with the provision made in Bihar Works Contract Disputes arbitration tribunal act 2008 will be considered valid.
40. The work is to be completed as per specification of technical clauses and direction of Engineer in charge and competent authority of department.
41. The successful tenderer whom the work will be awarded will have to submit self-attested work schedule regarding completion of work before the agreement and this document will be a part of the agreement failing which the agreement will not be executed. The work must be started after issuance of work order failing which the agreement will be rescinded and the security deposit will be forfeited.

42. It will be mandatory to upload an affidavit certifying the authenticity of all the records/documents uploaded by the contractor.
43. The undersigned reserves the right to cancel/extend the bid without any prior information or assigning any reason.
44. Further details of works can be obtained from the office of the undersigned. For any clarification, regarding the E-tender process, please contact the Help Desk of e-proc2.0 M. Junction Services Limited RJ Complex, 2nd floor, Canara Bank Campus Khajpura, Ashiana Road, P.S- Shastri Nagar, Patna-800014 Bihar (18005726571, 7605084942).

Executive Engineer
P.H. Mechanical Division, Patna.



SECTION 1

INSTRUCTION TO BIDDERS

(ITB)



Section 1: Instructions to Bidders

<u>Table of Clauses</u>	<u>Page No.</u>
A. General	11-21
1. Scope of Bid	11
2. Source of Funds	11
3. Eligible Bidders	11
4. Qualification of the Bidder	12-20
5. One Bid per Bidder	20
6. Cost of Bidding	20
7. Site Visit	20-21
B. Bidding Documents	21-23
8. Content of Bidding Documents	21
9. Clarifications of Bidding Documents	22
10. Amendment of Bidding Documents	22-23
C. Preparation of Bids	23-27
11. Language of Bid	23
12. Documents Comprising the Bid	23-24
13. Bid Prices	24
14. Currencies of Bid and Payment	25
15. Bid Validity	25
16. Bid Security/Earnest Money	25-26

17. Alternative Proposals by Bidders	26
18. Format and Signing of Bid	26-27
D. Submission of Bids	27
19. Bids Description	27
20. Deadline for Submission of Bids	27
21. Late Bids	27
E. Bid Opening and Evaluation	27-31
22. Bid Opening	27-28
23. Process to be Confidential	28
24. Clarification of Financial Bids	28
25. Examination of Bids and Determination of Responsiveness	29
26. Correction of Errors	29
27. Evaluation and Comparison of Financial Bids	30-31
F. Award of Contract	32-33
28. Award Criteria	32
29. Employer's Right to Accept any Bid and to Reject any or all Bids	32
30. Notification of Award and Signing of Agreement	32
31. Performance Security	33
32. Advance Payment and Security	33
33. Corrupt or Fraudulent Practices	33
G. Appendix to ITB	34-35
H. Annexure-I & Annexure-II	36-37

A. GENERAL

1. Scope of Bid

- 1.1 The Employer (named in Appendix to ITB) invites bids for the fabrication of works (as defined in these documents and referred to as “the works”) detailed in the table given in IFB. The bidders may submit bids for **any or all** the works detailed in the table given in IFB.
- 1.2 The successful bidder will be expected to complete the works by the intended completion date specified in the Contract data.
- 1.3 Throughout these bidding documents, the terms ‘bid’ and ‘tender’ and their derivatives (bidder / tenderer, bid / tender, bidding / tendering, etc.) are synonymous.
- 1.4 **Administrative authority decided that this agreement will be PERCENTAGE RATE and accordingly the non-relevant sections of this document must be crossed.**

2. Source of Funds

- 2.1 The expenditure on this project will be met by Public Health Engineering Department, Government of Bihar.

3. Eligible Bidders

- 3.1 This Invitation for Bids is open to all bidders.
- 3.2 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a statement that the Bidder is neither associated, nor has been associated, directly or indirectly, with the Consultant; Engineer-in-Charge or any other entity that has prepared the design, specifications, and other documents for the Project or being proposed as Project Manager for the Contract or involved in supervision of the contract. A firm that has been engaged by the Employer to provide consulting services for the preparation or supervision of the works, and any of its affiliates shall not be eligible to bid.
- 3.3 Bidders shall not be under a declaration of ineligibility for delay, failure, or corrupt and fraudulent practices by any of the State Govt. or Central Govt. or Public Undertaking or any Autonomous Body.

4. Qualification of the Bidder

4.1 All bidders shall provide in Section 2: Forms of Bid and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts indicating milestones to complete the project on time.

4.2 All bidders shall also furnish the following information in Section 2.

- (i) **Evidence of access to or availability of credit facilities (minimum 10% of estimated cost) certified by the bankers.**
- (ii) Undertaking that bidder would be able to invest a minimum of cost up to 25% of the contract value of work, during implementation of contract.
- (iii) **Proposals, if any, for sub contracting of elements of work, costing more than 10% of the bid amount.**
- (iv) Power of Attorney, if any.

4.3 All bidders shall include the following information and documents with their bids in Section 2:

- (a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the Bid to commit the Bidder;
- (b) **Total monetary value of work performed for each of the last five years.**
- (c) Experience in works of a similar nature and size for each of the last five years, and details of works underway or contractually committed; and clients who may be contacted for further information on those contracts.
- (d) **Major items of construction equipment proposed to carry out the Contract or evidence of arrangement; of possessing them on hire/lease/buying as defined therein;**
- (e) Qualifications and experience of key site management and technical personnel proposed for contract;
- (f) Reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five years;
- (g) **Evidence of access to line(s) of credit and availability of other financial resources facilities (10% of contract value), certified by the Bankers (Not more than 3 months old);**

- (h) Undertaking that the bidder will be able to invest minimum liquidity up to 25% of contract value of work, during implementation of work.
 - (i) Authority to seek references from the Bidder's bankers;
 - (j) Information regarding any litigation, current or during the last five years, in which the bidder is involved, the parties concerned and dispute amount;
 - (k) Proposals for subcontracting components of the Works amounting to more than 10% of the Bid Price (for each, the qualifications and experience of the identified sub-contractor in the relevant field should be annexed);
 - (l) The proposed methodology and programme of work backed with equipment planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.
- 4.4 Bids from Joint ventures are acceptable for the projects costing Rs 10 crores or more {As per RCD Govt. of Bihar Memo No- 8131 (S) w Dated. 24.07.2012}.
- 4.4.1 Bids from joint venture are only allowed for the works having estimated cost more than 10 crores. Bids submitted by a joint venture (JV) of not more than a total of three firms as partners shall comply with the following requirements: -
- (i) There shall be a JV agreement {refer Section-8 (Refer ANNEXURE- 1)} specific for the contract package between the constituent firms indicating clearly, amongst other things, the proposed distribution of responsibilities both financial as well as technical for the execution of work amongst them. For the purpose of this clause, the most experience lead partner will be the one defined. A copy of JV agreement in accordance with requirements mentioned in Section-8 shall necessarily be submitted with the bid.
 - (a) Alternatively, a letter of intent to execute a JV in the event of successful bid shall be signed by all partners of JV and submitted with the bid together with a copy of the proposed agreement. Pursuant to the foregoing, the JV shall include among other things, the joint venture's objectives, the proposed management structure, the contribution of each partner to joint venture operation, the commitment of the partners to joint and several liability for due performance, recourse/sanctions within the joint

venture in the event of default of withdrawal of any partner and arrangements for providing the required indemnities.

- (b) The JV so formed shall also have to be registered with the concerned department after issue of LOA but before the agreement.
- (ii) The bid, and in the case of the successful bidders, the form of agreement, etc, shall be signed and/or executed in such a manner as may be required for making it legally binding on all partners (including operative parts of the ensuing contract in respect of Agreement of Arbitration, etc). On award of work, the Form of Agreement and Contract Documents shall be signed by all partners of the Joint Venture to conclude Contract Agreement.
- (iii) Lead partner shall be nominated as being partner-in-charge; and this authorization shall be evidenced by submitting a power of attorney signed by the legally authorized signatories of all the partners.
- (iv) The partner-in-charge shall be authorized to incur liabilities and to receive instruction for and on behalf of the partners of the Joint Venture, whether jointly or severally and entire execution of the Contract (including payment) shall be carried out exclusively through the partner-in-charge. A copy of the said authorization shall be furnished with the bid.
- (v) All partners of the Joint Venture shall be liable jointly and severally for the execution of the contract in accordance with contract terms, and a relevant statement to this effect shall be included in the authorization mentioned under sub clause (iii) above as well as in the Form of tender and the Form of Agreement (in case of a successful bidder).
- (vi) In the event of default, all the partners of the Joint venture will retain the full and undivided responsibility for the performance of their obligations under the contract and/or for satisfactory completion of the works.
- (vii) The bid submitted shall include all the relevant information as required under the provisions of sub-clause 4.5 of ITB and furnished separately for each partner. The requirement of key plants & equipments construction equipments as per **ANNEXURE 1** of SBD testing equipment for establishing field laboratory key

personnel to be employed on contract work as per **ANNEXURE II** of SBD shall be counted altogether for the partners it shall be less than the requirement.

- (viii) The bank guarantee/other suitable instrument in shape of bid security shall be issued in the name of JV and pledged in favor of employer.

4.4.2 Each partner of the JV must produce:

- (i) The Permanent account number (PAN) of Income Tax
- (ii) An affidavit through 1st class Executive Magistrate that the information furnished with the bid documents is correct in all respect; and
- (iii) Such other certificates as defined in the Appendix to ITB. Failure to produce the certificates shall make the bid non-responsive.

4.4.3 Each bidder must demonstrate:-

- (i) Availability for construction work, either owned, or on lease or on hire, of the key equipment stated in the Appendix to ITB including equipments required for establishing field laboratory to perform mandatory test, and those stated in the Appendix to ITB. The requirement of key plants & equipments construction equipments as per **ANNEXURE I** of SBD testing equipment for establishing field laboratory key personnel to be employed on contract work as per **ANNEXURE II** of SBD shall be counted altogether for the partners it shall be less than the requirement.
- (ii) Availability of technical personnel for construction work as stated in the Appendix to ITB. The requirement of key plants & equipments fabrication equipments as per **ANNEXURE I** of SBD testing equipment for establishing field laboratory key personnel to be employed on contract work as per **ANNEXURE II** of SBD shall be counted altogether for the partners it shall be less than the requirement.
- (iii) The joint venture must satisfy collectively the criteria laid down in par 3.1 & 3.2 above.
- (iv) Liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract of not less than the amount specified in the Appendix to ITB.
- (v) The bidder must not have in his employment.

(a) The near relations (defined as first blood relations and their spouses or the bidder's spouse) of persons .The bidder must produce an affidavit stating that the near relations of the following departmental officers are not in his employment.

JE/AE/EE/SE/CE/EnC and divisional accountant of any work department of Bihar state.

(b) Without Government permission, any person who retired as gazette officer within the last two years and from the departments. The bidder must produce an affidavit stating the names of retired gazette officer (if any) in his employment who retired within the last two years with the following ranks from the departments listed below:

JE/AE/EE/SE/CE/E-in-C & Divisional Accountant of any works department of Bihar.

In case there is no such person in his employment, his affidavit should clearly state this fact.

4.4.4 To qualify for a package of contracts made up of this and other contracts for which bids are invited in the Notice Inviting Tender, the bidder must demonstrate having experience and resources sufficient to meet the aggregate of the qualifying criteria for the individual contract.

4.4.5 If bidder is Joint venture, the partners would be limited to three (including lead partner). Joint venture firm shall jointly and severally responsible for completion of the project. Joint venture must fulfill the following minimum qualification requirement.

- (i) The lead partner shall meet not less than 50% (fifty percent) of qualification criteria given in sub-clause 4.2, 4.5 A, 4.5 B, 4.7 & 4.8 of ITB.
- (ii) Each of the remaining partners shall meet not less than 25% (Twenty five percent) of all the qualifying criteria given in sub-clause 4.2, 4.5 A, 4.5 B, 4.7 & 4.8 of ITB.
- (iii) However in case one of the joint ventures partner is proposed to be included primarily to provide financial strength to the joint venture, such joint venture partner shall have to commit to provide liquidity support to the project to the extent of 10% of the value of contract.
- (iv) The joint venture must also collectively satisfy the subject of the criteria of clause 4.2, 4.5 A, 4.5 B, 4.7 and 4.8 of ITB for this purpose the relevant figures for each of the partners shall be 100% or more.
- (v) In the event that the Employer has caused to disqualify under clause 4.8 of ITB and the constitutions stated below all of the Joint Venture partners will be disqualified.

- (vi) Joint venture applicants shall provide a certified copy of the Joint Venture Agreement in demonstration of the partners undertaking joint and several liabilities for the performance of any contract entered into with the bid.
- (vii) The available bid capacity of the JV as required under clause 4.7 of ITB below will be applied for each partner to the extent of his proposed participation in the execution of the work. The total bid capacity available shall be more than estimated contract value.

The available bid capacity will be calculated as under

$$\text{Assessed Available Bid capacity} = (A \times N \times M - B)$$

Where

- A = Maximum value of civil contract works executed in any one year during the last five years (updated to the price level of the last year at the rate of 8 percent a year) taking into account the completed as well as works in progress.
- N = Number of years prescribed for completion of the works for which bids are invited. N= 04 months.
- M = 3
- B = Value, at the current price level, of existing commitments and on-going works to be completed during the period of completion of the works for which bids are invited.

Note: The statements showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Engineer in charge, not below the rank of an Executive Engineer or equivalent.

- 4.4.6 Sub-Contractor's (duly authorized) experience and resources shall be taken into account in determining the bidder's compliance with the qualifying criteria. The sub contractor's role may be verified by the employer.
- 4.4.7 Qualification of a joint venture does not necessarily qualify any of its partners individually or as a partner to any other joint venture. In case of dissolution of a joint venture, each one of

the constituent firms may qualify if they meet all the qualification requirements subject to the written approval of the Employer.

- 4.4.8 The rescinding of contract of a joint venture on account of reasons other than non-performance, such as most experienced partner of joint venture pulling out, court direction leading to breaking up of a joint venture before the start of work, which are not attributable to the poor performance of the contractor will, however, not affect the qualification of the individual partners.

4.5 A. To qualify for award of the contract, each bidder in its name should have in the last five years as referred to in Appendix :-

(a) **Attached shall have valid Unique Document Identification Number (UDIN Achieved in any one year a minimum annual financial turnover volume of construction work of at least the amount equal to the 50% (fifty percent) estimated cost of works for which bid has been invited. The turnover will be indexed at the rate of 8% for a year.**

(b) The tenderer should have sufficient experience of similar nature of single work (Fabrication jobs and IOT automation work) in any one of the last 5 years with minimum value 10% of the estimated cost of aforesaid work.

Single work nature implies either fabrication work or Automation work or both.

* Single work in section 4.5 (b) will imply one single contract.

(c) Executed the minimum quantities of the following item of work as indicated in the appendix. **(Sl. No. 05 of G. APPENDIX to ITB).**

B. Each bidder should further demonstrate:

(a) Availability (either owned or leased or by procurement against mobilization advances) of the following key and critical equipment for this work:

Based on the studies, carried out by the Engineer the minimum suggested major equipment to attain the completion of works in accordance with the prescribed construction schedule are shown in the **ANNEXURE I.**

Availability of the testing equipment required for establishing field laboratory to perform mandatory tests ex those stated in appendix to ITB.

The bidders should, however, undertake their own studies and furnish with their bid, a detailed fabrication planning and methodology supported with lay out and necessary drawings and broad calculations as stated in clause 4.3(1) above to allow the employer to review their proposals. The numbers, types and capacities of each plant/equipment shall be shown in the proposals along with the cycle time for each operation for the given production capacity to match the requirements. (To be included for bids valued over Rs 5 crore).

(b) Availability for this work number of personnel with adequate experience as required; as per **ANNEXURE II**.

(c) Liquid assets and/or availability of credit facilities of no less than amount indicated in Appendix

(Credit lines/letter of credit/certificates from Banks for meeting the funds requirement etc-usually the equivalent of the estimated cash flow for 3 months in peak construction period.)

C. To qualify for a package of contracts made up of this and other contracts for which bids are invited in the IFB, the bidder must demonstrate having experience and resources sufficient to meet the aggregate of the qualifying criteria for the individual contracts.

4.6 Sub-contractors' experience and resources shall not be taken into account in determining the bidder's compliance with the qualifying criteria except to the extent stated in 4.5(A) above.

4.7 Bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity is more than the total bid value. The available bid capacity will be calculated as under:

$$\text{Assessed Available Bid capacity} = (A \times N \times 3 - B)$$

Where

A= Maximum value of civil contract works executed in any one year during the last five years (updated to the price level of the year indicated in Appendix) taking into account the completed as well as works in progress.

N = Number of years prescribed for completion of the works for which bids are invited
= 04 months.

B = Value (updated to the price level of the year indicated in Appendix) of existing commitments and on-going works to be completed (periods of completion of works for which bids are invited.)

Note: The statements showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Engineer in charge, not below the rank of an Executive Engineer or equivalent.

4.8 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- have record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc; and/or
- participated in the previous bidding for the same work and had quoted unreasonably high bid prices and could not furnish rational justification to the employer.

5. One Bid per Bidder

5.1 Each bidder shall submit only one bid for any work or one package or group. A bidder who submits or participates in more than one bid (other than as a sub contractor or incase of alternatives that have been permitted or requested) will cause all the proposals with the Bidders participation to be disqualified.

6. Cost of Bidding

6.1 The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs.

In case of cancellation of tender, cost of bidding document will be charged each time.

7. Site Visit

7.1 The Bidder, at the Bidder's own responsibility and risk must visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the

Bid and entering into a contract for fabrication of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

7.2 Tender documents are not transferable.

B. BIDDING DOCUMENTS

8. Content of Bidding Documents

8.1 The set of bidding documents comprises the documents listed below and agenda issued in accordance with Clause 10;

Section	Particulars	Volume No.
	Invitation for Bids	I
1	Instructions to Bidders	
2	Qualifications of Bidders	
3	Conditions of contracts	
4	Contract Data	
5	Special condition of Contract	II
6	Technical Specifications	III
7	Bill of Quantities	
8	Securities and other forms	
9	Drawing	IV
10	Documents to be furnished by bidder	V

8.2 One copy of each of the volume I,II,III,IV will be issued to the bidders documents to be furnished by the bidder in compliance to section II will be prepared by him and furnished as vol. V in two parts (refers col. 12)

8.3 The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, technical specifications, bill of quantities, forms, Annexures and drawings in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the

bidder's own risk. Pursuant to clause 25 hereof, bids which are not substantially responsive to the requirements of the Bid Documents shall be rejected.

9. Clarification of Bidding Documents.

9.1 Pre-bid meeting

- 9.1.1 The bidder or his official representative is invited to attend a pre-bid meeting which will take place at the address, venue, time and date as indicated in appendix.
- 9.1.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 9.1.3 The bidder is requested to submit any questions in writing or by fax/official e-mail id to reach the Employer not later than one week before the meeting.
- 9.1.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be transmitted without delay to all purchasers of the bidding documents. Any modification of the bidding documents listed in Sub-Clause 8.1 which may become necessary as a result of the pre-bid meeting shall be made the Employer exclusively through the issue of an Addendum pursuant to Clause 10 and not through the minutes of the pre-bid meeting. All bidders have to collect any addendum within next working day of pre-bid meeting. The bidder shall receive the minutes of the meeting on the next working day of the pre-bid meeting.
- 9.1.5 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

10. Amendment of Bidding Documents

- 10.1 Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing addendum.
- 10.2 Any addendum thus issued shall be part of the bidding documents and shall be collected by all the purchasers of the bidding documents. Prospective bidders shall acknowledge receipt of each addendum in writing or by cable to the Employer. The Employer will assume no responsibility for postal delays.

- 10.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at his discretion, extend as necessary the deadline for submission of bids, in accordance with Sub-Clause 20.2 below.

C. PREPARATION OF BIDS

11. Language of Bid

- 11.1 All documents relating to the bid shall be in English.

12. Documents Comprising the Bid

- 12.1 The bid to be submitted by the bidder as per Clause 8.1

Part I shall be named “Technical Bid” and shall comprise

- (i) Earnest money in the form specified in Section 8
- (ii) Qualification Information and supporting documents as specified in Section-2
- (iii) Certificates, undertakings, affidavits as specified in Section 2
- (iv) Any other information pursuant to Clause 4.2 of these instructions
- (v) Undertaking that the bid shall remain valid for the period specified in Clause 15.1
- (vi) An affidavit affirming the information he has furnished in the bidding document is correct to the best of his knowledge and belief.
- (vii) Technical details such as IOT technology, maintenance of water tanker with IoT, life of IOT, performance certificate etc.

Part II shall be named “Financial Bid” and shall comprise

- (i) Form of Financial Bid.
- (ii) Priced Bill of Quantities for items specified in Section 7 and shall be submitted online only.
- (iii) Technical and Financial Bid shall be uploaded online.

Hard copy of uploaded Tender Document, all the relevant papers, Earnest Money, Cost of Tender Document may be submitted by the bidders in the Office of Executive Engineer, P.H. Mech Division, Patna on or before schedule time as per NIT.

- 12.2 Deleted

12.3 Following documents, which are not submitted with the Bid will be deemed to be part of the bid.

Sl. No.	Particulars
1	Invitation for Bids (IFB)
2	Instructions to Bidders
3	Securities and other forms
4	General Condition of Contract
5	Contract Data
6	Special Condition of Contract
7	Technical Specifications
8	Drawings (submitted by the bidder)

13. **Bid Prices**

13.1 The contractor shall bid for the whole work as described in Sub-Clause 1.1 based on the priced Bill of Quantities submitted by the Bidder.

13.1.1 The Bidders shall adopt the percentage rate method as specified in the appendix to ITB, only the same option is allowed to all the Bidders. Percentage rate method requires the Bidder to quote a percentage above/below/at per of the schedule of rates (both in figures and words) specified in the appendix to ITB.

Corrections, if any, shall be made by crossing out, initialing, dating and rewriting.

13.1.1 All duties, taxes and other levies payable by the contractor under the contract or for any other clause shall be included in the rates, prices and total Bid Price submitted by the Bidder.

13.2 The rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions clause 10CA & 10CC of Conditions of Contract.

13.3 The rate should include the cost of all seen and unseen expenditure. No claim, whatsoever, will be entertained due to non-inclusion of any such event necessary for the completion of the item of work and the whole work as it is a Turnkey job.

14. Currencies of Bid and Payment

- 14.1 The units rates and the prices shall be quoted by the bidder entirely in Indian Rupees. All payments shall be made in Indian Rupees.

15. Bid Validity

- 15.1 Bids shall remain valid for a period of 180 days after the deadline date for bid submission specified in clause 20. A bid valid for a shorter period shall be rejected by the Employer as non-responsive. In case of discrepancy in bid validity period between that given in the undertaking pursuant to Clause 12.1 (v) and the Form of Bid submitted by the bidder, the Later shall be deemed to stand corrected in accordance with the former and the bidder has to provide for any additional security that is required.
- 15.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid.

16. Bid Security/Earnest Money

- 16.1 The Bidder shall furnish, as part of his Bid, a Bid security in the amount as shown in column of the table of tender notice given in IFB. This bid security shall be in favour of Employer as mentioned in the Bihar Financial Rules, and shall be in any of the following forms.
- (a) In e-tendering/e-procurement system, the amount required to be deposited as earnest money for this tender can be paid either through internet payment gateway (credit/debit card), Net banking, NEFT/RTGS or Physical mode/Manual Payment system. Earnest money can be paid through internet payment gateway (credit/debit card), Net banking, NEFT/RTGS in online mode.
- (b) In case of physical mode /Manual payment system the EMD should be in unconditional bank guarantee (B.G.) from any scheduled Indian bank issued within the state in the **format** attached. (If issued from any bank outside state will be converted to any bank within the state before executing the agreement), Such B.G. duly pledged in favour of the Executive Engineer, P. H. Mechanical Division, Patna and B.G. valid till 180 + 45 days = 225 days.

- 16.2 Unconditional bank guarantees (and other instruments having fixed validity) issued as Bid Security for the bid shall be valid for 45 days beyond the validity of the bid.
- 16.3 Any bid not accompanied by an acceptable Bid Security and not secured as indicated in Sub-Clauses 16.1 and 16.2 above shall be rejected by the Employer as non-responsive.
- 16.4 The Earnest money of unsuccessful bidders will be returned within 28 days after the end of the bid validity period specified in Sub-Clause 15.1
- 16.5 The Earnest money of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.
- 16.6 The Earnest money may be forfeited
- (a) if the Bidder withdraws the Bid after Bid opening during the period of Bid validity;
 - (b) if the Bidder does not accept the correction of the Bid Price, pursuant to Clause 26; or
 - (c) in the case of a successful Bidder, if the Bidder fails within the specified time limit to
 - (i) Sign the Agreement; or
 - (ii) Furnish the required Performance Security.

17. Alternative Proposals by Bidder

- 17.1 Bidders shall submit offers that fully comply with the requirements of the bidding documents, including the conditions of contract (including mobilization advance or time for completion), basic technical design as indicated in the drawing and specifications. Conditional offer or alternative offers will not be considered further in the process of tender evaluation.
- 17.2 Conditional tender will be rejected forthwith.

18. Format and Signing of Bid

- 18.1 The Successful Bidder shall submit hard copy of all original documents, affidavits & BG, etc essentially before the agreement as per RCD, Govt. of Bihar Memo No. – 163(E), dt – 10-01-2024
- 18.2 The Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder, pursuant to Sub-Clause 4.3. All pages of the bid where entries or amendments have been made shall be initialed by the person or persons signing the bid and a certificate of corrections must be given by the employer.

- 18.3 The Bid shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.

D. SUBMISSION OF BIDS

19. Bid Description

Not Applicable in e-tendering.

20. Deadline for Submission of the Bids As per NIT

- 20.1 Complete Bids must be received by the Employer at the address specified above not later than the date indicated in appendix. In the event of the specified date for the submission of bids have declared a holiday for the Employer, the Bids will be received up to the appointed time on the next working day.

- 20.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

21. Late Bids

- 21.1 Any Bid received by the Employer after the deadline prescribed in Clause 20 will be returned unopened to the bidder.

E. BID OPENING AND EVALUATION

22. Bid Opening

- 22.1 to 22.3 N/A in e-tendering.

- 22.4 (i) Subject to confirmation of the bid security by the issuing Bank, the bids accompanied with valid security will be taken up for evaluation with respect to the Qualification Information and other information furnished in Part I of the bid pursuant to Clause 12.1

(ii) After receipt of confirmation of the bid security, the bidder will be asked in writing (usually within 10 days of opening of the Technical Bid) to clarify or modify his technical bid, if necessary, with respect to any **rectifiable defeats**.

(iii) The bidders will respond in not more than 7 days of issue of the clarification letter.

(iv) Immediately (usually within 3 to 4 days), on receipt of these clarifications the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration.

22.5. At the time of opening of "Financial Bid", the names of the bidders found responsive in accordance with Clause 22.4(iv) will be announced online or through letter. The bids of only these bidders will be opened. The responsive Bidders' names, the Bid prices, the total amount of each bid, any discounts, Bid modifications and withdrawals, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening. Any Bid price or discount, which is not read out and recorded, will not be taken into account in Bid Evaluation.

22.6 N/A

23. Process to be Confidential

23.1 Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not official concerned with such process until the award to the successful Bidder has been announced. Any effort by a Bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his Bid.

24. Clarification of Financial Bids

24.1 To assist in the examination, evaluation and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdowns of unit rates. The request for clarification and the response shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids in accordance with Clause 26.

24.2 Subject to sub-clause 24.1, no Bidder shall contact the Employer on any matter relating to his bid from the time of the Bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer, it should do so in writing.

24.3 Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, Bid comparison or contract award decisions may result in the rejection of the Bidders' bid.

25. Examination of Bids and Determination of Responsiveness

- 25.1 During detailed evaluation of “Technical Bids”, the Employer will determine whether each Bid (a) meets the eligibility criteria defined in Clause 3 and 4; (b) has been properly signed; (c) is accompanied by the required securities and; (d) is substantially responsive to the requirements of the Bidding documents. During the detailed evaluation of the “Financial Bid”, the responsiveness of the Bids will be further determined with respect to the remaining bid condition, i.e., priced bill of quantities, technical specifications and drawings.
- 25.2 A substantially responsive “Financial Bid” is one which conforms to all the terms, conditions, and specifications of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality or performance of the Works; (b) which limits in any substantial way, inconsistent with the Bidding documents, the Employer’s rights or the Bidder’s obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.
- 25.3 If a “Financial Bid” is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

26. Correction of Errors

- 26.1 “Financial Bids” Determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:
- (a) where there is a discrepancy between the rates in figures and in words, the rate in words will govern; and
 - (b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity the unit rate as quoted will govern. (if applicable)
- 26.2 The amount stated in the “Financial Bid” will be corrected by the Employer in accordance with the above procedure and the bid amount adjusted with the concurrence of the Bidder in the following manner.

- (a) If the Bid price increases as a result of these corrections, the amount as stated in the Bid will be the 'bid price' and the increase will be treated as rebate;
- (b) If the bid price decreases as a result of the corrections, the decreased amount will be treated as the 'bid price';

Such adjusted bid price shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount the Bid will be rejected, and the Earnest money may be forfeited in accordance with Sub-Clause 16.6(b).

27. Evaluation and Comparison of Financial Bids

- 27.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Sub-Clause 25.2.
- 27.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:
 - (a) Making any correction for errors pursuant to Clause 26; or
 - (b) Making an appropriate adjustment for any other acceptable variations, deviations.
- 27.3 The Employer reserves the right to accept or reject any variation or deviation. Variations and deviations and other factors, which are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in Bid evaluation.
- 27.4 If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analysis, the Employer may require that the amount of the performance security set forth in Clause 31 be increased at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

- 27.5 A bid, in the opinion of employee which contains several items in the Bill of Quantities which are unrealistically priced low and which cannot be substantiated satisfactorily by the bidder, may be rejected as non-responsive.



F. AWARD OF CONTRACT

28. Award Criteria

28.1 Subject to Clause 29, the Employer will award the Contract to the Bidder whose Bid has been determined

- (i) to be substantially responsive to the Bidding documents and who has offered the lowest evaluated Bid Price, and
- (ii) To be within the available Bid capacity adjusted to account for his Bid price which is evaluated the lowest in any of the packages opened earlier than the one under consideration.

In no case, the contract shall be awarded to any bidder whose available bid capacity is less than the evaluated bid price, even if the said bid is the lowest evaluated bid. The contract will in such cases will be awarded to the next lowest bidder at his evaluated bid price.

29. Employer's Right to accept any Bid and to reject any or all Bids

Notwithstanding Clause 28, the Employer reserves the right to accept or reject any Bid, and to cancel the Bidding process and reject all Bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the ground for the Employer's action.

30. Notification of Award and Signing of Agreement

30.1 The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by letter. This letter (hereinafter and in the General Conditions of Contract called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").

30.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of the performance security in accordance with the provisions of Clause 31.

30.3 The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and the successful Bidder, after the performance security is furnished.

31. **Performance Security**

- 31.1 Within 10 (ten) days of receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in any of the forms given below for an amount equivalent 2% of the Contract price including earnest money plus additional security for unbalanced Bids in accordance with the Clause 29.5 of ITB and the provisions of Bihar Financial Rules.
- 31.2 If the performance security is provided by the successful Bidder in the form of a Bank Guarantee receipts in the name of Employer, it shall be issued either (a) at the Bidder's option, by a Nationalized/Scheduled Indian bank within state or (b) acceptable to the Employer.
- 31.3 Failure of the successful Bidder to comply with the requirements of Sub-Clause 31.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security.

32. **Advance Payment and Security (Not Applicable)**

33. **Corrupt or Fraudulent Practices**

- 33.1 The Employer will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question and will declare the firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract with PHED and any other agencies, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for the contractor, or in execution.
- 33.2 Furthermore, Bidders shall be aware of the provision stated in Sub-Clause and Sub-Clause 14 of the General Conditions of Contract.

G. APPENDIX to ITB

Clause Reference with respect to Section-I.

1. Name of the Employer Executive Engineer, P.H. Mechanical Division Patna [CI. 1.1]

2. The last five years means for this tender

2020__2021

2021__2022

2022__2023

2023__2024

2024__2025

3. The required annual financial turn over amount is Rs. 515.125 Lakh (50 %) [CI. 4.5A (a)]

Attach relevant documents with UDIN no.

4. Experience for Value of work is Rs. 103.03 Lakh (10 % similar work) [CI. 4.5A (b)]

5. Experience in amount for executing quantities as per table. [CI. 4.5A (c)]

Attach relevant documents

Minimum quantity of work done as prime contractor in any one year during last five years.	ITB Cl. 4.5 A (C)	Nature of successful execution of work needed for experience	Requirements
		Fabrication experience of tanker / tanks /large container etc	Not less then 35 nos.
		S/I/C of IOT Controller/ Automation system.	The contractor/agency should have sufficient work experience in any one of the last five years in Supply & installation of Automation system / IOT controller, the total cost of which is minimum Rs. 50 lakh or more.

6. Liquid assets is Rs. 257.56 Lakh (25%) and availability of credit facilities is Rs. 103.03 Lakh (10%)

[CI. 4.5B(c)]

7. Price level of the financial year 2024-25 [CI. 4.7]

8. The pre-bid meeting will take place in the office of Zonal Chief Engineer, P.H. E.D, Patna Zone Patna [CI. 9.1.2]

on 02.04.2026 at 3.00 P.M.

9. The technical bid will be opened on website www.eproc2.bihar.gov.in on 09.04.2026 at 15.30 P.M.

10. Address of the Employer Executive Engineer, P.H. Mechanical Division, Patna,
LBS Nagar, Qr No. 741 to 744 Patna

11. Identification [CI. 19.2(b)]

Fabrication and supply of 130 nos 3600 lit (800 gallon) capacity SS304 grade stainless steel sheet body water tanker mounted on two wheel steel chasis trolley with IOT controller for alternate arrangements of additional water supply in different districts of Bihar state under PHED for the year 2025-2026 via “Sukhhad and aapda yojna” under PH Mech Division ,Patna.

Bid Ref. No. 04/2025-26

Do not open before dt.- 09.04.2026 at 15.30 P.M

12. Bids should be submitted only by **Percentage rate method.**

13. Schedule of rate applicable for Percentage Rate method is as mentioned in BOQ.

14. The bid should be uploaded latest by as per NIT. [CI. 20.1(a)]

15. The bid will be opened on prescribed in NIT on www.eproc2.bihar.gov.in [CI. 22]

16. The Bank Guarantee/ on time made in favour of
Executive Engineer, P.H. Mech. Division, Patna and Payable at Patna.

17. Bids will be submitted in percentage rate basis.

Annexure I

List of Key Plant & Equipment to be deployed on Mechanical Fabrication Works

Sl No.	Type of Equipment/ Maximum age No. Required	Nos.	Max. Age (In years)
1	Welding Machine	5	4
2	Rolling Machine	5	4
3	Grinder	5	5
4	Gas cutting Machine	5	5
5	Digital Micrometer for thickness measuring in mm (IN&OUT)	5	2
6	Generator/D.G set in appropriate KVA	1	8
7	Tractor (break hourse Power 35 HP)	5	6
8	Crane	1	6

Annexure II

List of Key Personnel to be deployed on Contract Work									
[Reference Cl. 4.5(B) (b)]									
Sl. No	Personnel	Qualification	Contract Package Size						
			Rs.5-30 lacs	Rs30-70 lacs	Rs70 Lacs to 2 Crores	Rs.2-10 Crores	Rs10-30 Crores	Rs30-50 Crores	More than 50 Crores
1	Project Manager	B.E. Mech. + 10 Years Exp.	-	-	-	-	1	-	-
2	Site Engineer	B.E. Mech. + 07 Years Exp.	-	-	-	-	2	-	-
3	Plant Engineer	B.E. Mech. + 07 Years Exp.	-	-	-	-	4	-	-
3	Site Supervisor	B.E. Mech. + 05 Years Exp. Or Dip. Mech./Civil + 07 years Exp.]	-	-	-	-	4	-	-
4	Surveyor	B.E. Mech + 03 Years Exp. Or Dip. Civil + 05 years Exp.	-	-	-	-	-	-	-
	Total		-	-	-	-	11	-	-

* The Actual Number of equipments to be decided by the Concerned Public Health division/circle/Zone/Department before floating the tender.

**** On the basis of nature of work list of key plant & equipments will be decided.**

SECTION 2
QUALIFICATION INFORMATION
(To be filled in by Bidder)



QUALIFICATION INFORMATION

The Information to be filled in by the Bidder in the following pages will be used for purposes of post qualification as provided for in clause 4 of the Instructions to Bidders. This information will be incorporated in the Contract.

1. For individual Bidders

1.1 Constitution or legal status of Bidder

(Attach copy)

Place of registration:

Principal place of business:

Power of attorney of signatory of Bid

(Attach)

1.2 Total value of Mechanical Engineering

Work performed in the last 5 (Five) years** 2020--2021

(In Rs. Crore) 2021--2022

2022--2023

2023--2024

2024--2025

1.3.1 Work performed as prime contractor, work performed in the past as a nominated sub-contractor will also be considered provided the sub-contract involved execution of all main items of work described in the bid document, provided further that all other qualification criteria are satisfied (in the same name) on works of a similar nature over the last five years.**

Project Name	Name of the Employer*	Description of work	Contract No.	Value of Contract (Rs. In Crore)	Date of issue of work order	Stipulated period of completion	Actual date of completion *	Remarks explaining reasons for delay & work completed)

- * Attach certificate (s) from the Engineer (s)-in-Charge
 ** Immediately preceding the financial year in which bids are received.
 ß Attach certificate from Chartered Accountant.

1.3.2 Quantities of Work executed as prime contractor, work performed in the past as a nominated sub-contractor will also be considered provided the sub-contract involved execution of all main items of work described in the bid document provided further that all other qualification criteria are satisfied (in the same name and style) in the last five years:

Year	Name of the work	Name of the Employer	Quantity of work performed		Remarks (indicate contract Ref)
			Fabrication works of tankers /tanks /large container etc.	IOT Controller/ Automation system works.	
2020-21					
2021-22					
2022-23					
2023-24					
2024-25					

1.4 Information of Bid Capacity (works for which bids have been submitted and works which are yet to be completed) as on the date of this bid.

(A) Existing commitments and on-going works:

Description of works	Place & State	Contract No.	Name & Address of Employer	Value of Contract (Rs. In Crore)	Stipulated Period of Completion	Value of works remaining to be completion (Rs. In Crore)	Anticipated completed
1	2	3	4	5	6	7	8

(B) Works for which bids already submitted:

Description of works	Place & State	Name & Address of Employer	Estimated value of works (Rs. Crore)	Stipulated date of Completion	Date when decision is expected	Remarks, if any
1	2	3	4	5	6	7

- 1.5** Availability of key items of Contractor's Equipment essential for carrying out the Works [Ref. Clause 4.5 (B) (a)]. The Bidder should list all the information requested below. Refer also to Sub Clause 4.3 (d) of the Instruction to Bidders.

Description of works	Requirement		Availability proposals			Remarks (from whom to be purchased)
	No.	Capacity	Owned/Leased to be procured	Nos./Capacity	Age/Condition	
1	2	3	4	5	6	7

- 1.6** Qualification and experience of key personnel required for administration and execution of the contract [Ref. Clause 4.5 (B) (b)].

Position	Name	Qualification	Year of Experience (General)	Years of experience in the proposed position
Project Manager				

Etc.				

1.7 Project sub-contracts and firms involved. [Refer ITB Clause 4.3(k)]

Section of the works	Value of Sub-contract	Sub-Contractor (Name &Address)	Experience in similar work
1	2	3	4

- 1.8** Financial reports for the last five years: balance sheets, profit and loss statements, auditors' reports (in case of companies/corporation), etc. List them below and attach copies.
- 1.9** Evidence of access to financial resources to meet the qualification requirements; cash in hand, lines of credit, etc. List them below and attach copies of support documents.
- 1.10** Name, address and telephone, telex, email id and fax numbers of the Bidders' bankers who may provide references if contacted by the Employer.
- 1.11** Information on litigation history in which the Bidder is involved.

Other Party (ies)	Employer	Cause of Dispute	Amount involved	Remakes showing Present Status

1.12 Statement of compliance under the requirements of Sub Clause 3.2 of the instructions to Bidders. (Name of consultant engaged for project preparation is

**
.....
.....
.....)

1.13 Proposed work method and schedule. The Bidder should attach description, drawing and charts as necessary to comply with the requirements of the Bidding documents. [Refer ITB Clause 4.1 & 4.3 (1)]

1.14 Programme

1.15 Quality Assurance Programme

2. Additional Requirements

2.1 Bidders should provide any additional information required to fulfill the requirements of Instructions to the Bidders, if applicable.

- (i) Affidavit
- (ii) Undertaking
- (iii) Update of original prequalification application ***
- (iv) Copy of original prequalification application.***
- (v) Copy of prequalification letter.***

*** Delete if prequalification has not been carried out.

SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT FACILITIES

(CLAUSE 4.2 (i) OF ITB)

BANK CERTIFICATE

This is to certify that M/s _____ is a
reputed company with a good financial standing.

If the contract for the work, namely _____
is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of
Rs. _____ to meet their working capital
requirements for executing to the above contract during the contract period.

(Signature)

Name of Bank

Senior Bank Manager

Address of the Bank

AFFIDAVIT

1. I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.
2. The undersigned also hereby certifies that neither our firm M/s
_____ has been blacklisted nor has
_____ abandoned any work in any government department, in India nor any contract awarded to us for such works have been rescinded, during last five years prior to the date of this bid.
3. The undersigned hereby authorizes and request(s) any bank, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding my (our) competence and general reputation.
4. The undersigned understand and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the Department Project implementing agency.

(Signed by an Authorized Officer of the Firm)

Title of Officer

Name of Firm

DATE

UNDERTAKING

I, the undersigned do hereby undertake that our firm M/s. _____
_____ would invest minimum cash up to 25% of the value of the work during
implementation of the Contract.

(Signed by an Authorized Officer of the Firm)

Title of Officer

Name of Firm

DATE

SECTION 3

GENERAL CONDITIONS OF CONTRACT



GOVERNMENT OF BIHAR
PUBLIC HEALTH ENGINEERING
DEPARTMENT

General Rules & Directions

1. All work proposed for execution by contract will be notified in a form of invitation to tender pasted in public places and signed by the officer inviting tender or by publication in News papers and the internet as the case may be.

This form will state the work to be carried out, as well as the date for submitting and opening tenders and the time allowed for carrying out the work, also the amount of earnest money to be deposited with the tender, and the amount of the security deposit to be deposited by the successful tenderer and the percentage, if any, to be deducted from bills. Copies of the specifications, designs and drawings and any other documents required in connection with the work signed for the purpose of identification by the officer inviting tender shall also be open for inspection by the contractor at the office inviting tender during office hours.

2. In the event of the tender being submitted by a firm, it must be signed separately either by one or all the partners or person duly authorized by the partners, it must be signed on behalf of the firm by a person holding the requisite authorizations, such authorizations to be produced with the tender, and it must disclose that the firm is duly registered under the Indian Partnership Act, 1952.
3. Receipts for payment on account of work done, when executed by a firm, must also be signed by one or all the partners or a duly authorized signatory of the firm.

4. NA

- 4A. In case of Percentage Rate Tenders, tenderer shall fill up the usual printed form, stating at what percentage below/above (in figures as well as in words) the total estimated cost given in Schedule of Quantities at Schedule- A, he will be willing to execute the work Tenders, which propose any alteration in the work specified in the said form of invitation tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort, will be liable to rejection. No single tender shall include more than one work but contractors who wish

to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelope.

If for any special reasons, the contract provides for the payments for work done to be made at a specified percentage below or above the rates entered in the sanctioned estimate of the work (or the Scheduled of Rates), it should be stated in clear terms in the contract that the deductions or additions, as the case may be of the percentage, will be calculated on the gross, and not the net amounts of the bills for work done and in fixing the percentage it should be borne in mind that the calculations will be made.

5. The officer inviting tender or his duly Authorized Officer will open tenders in the presence of any intending contractors who may be present at the time and will enter the amount of several tenders in a comparative statements in a suitable form. In the event of a tender being accepted, a receipt for the earnest money forwarded there with shall thereupon be given to the contractor who shall thereupon for the purpose of identification sign copies of the specifications and other documents mentioned in Rule-I. In the event of a tender being rejected, the earnest money forwarded with such unaccepted tender shall thereupon be returned to the contractor remitting the same, without any interest.
6. The Competent Authority inviting tenders shall have the right of rejecting all or any of the tenders and will not be bound to accept the lowest or any other tender.
7. The receipt of an accountant or clerk for any money paid by the contractor will not be considered as an acknowledgment or payment to the officer inviting tender and the contractors shall be responsible for seeing that he procures a receipt signed by the office inviting tender or a duly authorized person.
8. The memorandum of work tendered for and the schedule of materials to be supplied by the department, if any and their issue rates shall be filled and completed in the office of the officer inviting tender before the tender form is issued. If a form is issued to an intending tenderer without having been so filled in and incomplete, he shall request the competent authority to have this done before he completes and delivers his tender.
9. For works of sensitive nature the tenderers shall sign a declaration under the Official Secrets Act 1923, for maintaining secrecy of the tender documents drawing or other records connected with the work given to them. The unsuccessful tenderers shall return all the drawing given to them.

10. NA

10A. In case of Percentage Rate Tenders only percentage quoted shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the contractor in percentage rate tender shall be accurately filled in figures and words, so that there is no discrepancy. However if the contractor has worked out the amount of the tender and if any discrepancy is found in the percentage quoted in words and figures, the percentage which corresponds with the amount worked out by the contractor shall, unless otherwise proved, be taken as correct. If the amount of the tender is not worked out by the contractor or it does not correspond with the percentage written either in figures or in words then the percentage quoted by the contractor in words shall be taken as correct. Where the percentage quoted by the contractor in figures and in words tally but the amount is not worked out correctly, the percentage quoted by the contractor will, unless otherwise proved, be taken as correct and not the amount.

11. In the case of any tender where unit rates of any item/items appear unrealistic, such tender will be considered as unbalanced and in case the tenderer is unable to provide satisfactory explanation such a tender is liable to be disqualified and rejected.

12. Not Applicable

12A. In Percentage Rate Tender, the tenderer shall quote percentage below/above (in figures as well as in words) at which he will be willing to execute the work. He shall also work out the total amount of his offer and the same should be written in figures as well as in words in such a way that no interpolation is possible. In case of figures, the word 'Rs' should be written before the figure of rupees and word P after the decimal figures, e.g. 'Rs 2.15 P' and in case of words, the word 'Rupees' should precede and the word 'paise' should be written at the end.

13. (i) The contractor whose tender is accepted, will be required to furnish performance guarantee of 2 (two percent) including earnest money of the tendered amount within specified period. This guarantee shall be in the form of Govt. Securities or fixed deposit receipt of any scheduled bank, guarantee bonds of any scheduled bank or State Bank of India or Bank guarantee from any schedule bank in the State.

(ii) The contractor whose tender is accepted will also be required to furnish by way of Security Deposit for the fulfillment of his contract, an amount equal to 8% of the tendered value of the work. The security deposit will be collected by deductions from the running bills including final bill of the contractor at the rates mentioned above.

14. On acceptance of the tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instructions from the Engineer-in-Charge shall be communicated in writing to the Engineer-in-Charge.
15. (i) GST, Royalty, Labour Cess or any other Tax/ Duty on material in respect of this Contract shall be payable by the Contractor and Government will not entertain any claim whatsoever in respect of the same.
- 15 (ii) TDS for GST/IT/any other tax admissible as per law will be made.
16. The Contractor shall give a list of both Gazetted and Non-Gazetted PHED employees related to him posted in the division, if any.
17. The tender for the work shall not be witnessed by a contractor or contractors who himself/ themselves has/have tendered or who may and has/have tendered for the same work. Failure to observe this condition would render, tenders of the contractors tendering, as well as witnessing the tender, liable to summary rejection.
18. The tender for composite work includes in addition to fabrication of water tankers all other works such as IOT installation, other electrical works etc. The tenderer apart from being a registered contractor (PHED) of appropriate class, must associate himself with agencies of appropriate class which are eligible to tender for other works in the composite tender.
19. The contractor shall submit list of works which are in hand (progress) in the following form:-

Name of work	Name and Particular of Div. where work is	Value of work	Position of work in Progress	Remarks
1	2	3	4	5

20. The contractor shall comply with the provisions of the Apprentices Act 1961, and the rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the contract and the Superintending Engineer/Executive Engineer may in his discretion without prejudice to any other right or remedy available in law cancel the contract.

The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

CONDITIONS OF CONTRACT

Definitions:

1. The contract means the document forming the tender and acceptances thereof and the formal agreement executed between the competent authority on behalf of the Governor of Bihar and the Contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings, and instructions issued from time to time from one contract and shall be complementary to one another.
2. In the contract, the following expressions shall, unless the context otherwise requires have the meanings, hereby respectively assigned to them: -
 - i) The expression works or work shall, unless there be something either in the subject or context repugnant to such construction, be construed 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.
 - ii) The site shall mean the land/or other places on, into or through which work is to be executed under the contract or any adjacent land, path or street through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.
 - iii) The Contractor/Operator shall mean the individual, firm, or company, whether incorporate or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm of company.
 - iv) The Engineer-in-Charge means the Engineer/ officer who shall supervise and be in-charge of the work and who shall sign the contract on behalf of the Governor of Bihar as mentioned in Schedule 'F' hereunder.
 - v) Government or Government of Bihar shall mean the Governor of Bihar.

- vi) Excepted Risk are risks due to riots (other than those on account of contractor employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, any act of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, and other causes over which the contractor has no control and accepted as such by the Accepting Authority Provided that the contractor is also to show that he has taken all due precautions to avoid /minimize any adverse effect / damage from the above or causes solely due to use or occupation by Government of the part of the works in respect of which a certificate of completion has been issued or a caused solely due to Government's faulty design of works.
- vii) Bill of quantity means the price and completed Bill of Quantities form forming part of the Bid.
- viii) The Defect liability certificate is the certificate issued by Engineer-in-Charge after defect liability period has ended and upon correction of defects by the contractor.
- ix) The defect liability period will be 60 (Sixty) months after successful completion of Trial Run or 61 (Sixty-one) months after completion of construction of whole Scheme, whichever is more. The Trial Run period will be 01 (One) months after completion of Whole fabrication work with IoT installation and Comprehensive Maintenance period will be 60 (Sixty) calander months after successful completion of Trial Run period.
- x) The intended completion date is the time intended to complete the work by the contractor.
- xi) The start date is given in the contract data. It is the date when the contractor shall commence execution of the works. It does not necessarily coincide with any of the site possession date. A sub contractor is a person or corporate body who has a contract with the contractor to carry out a part of the construction work in the contract, which includes work on the site.
- xii) A sub contractor is a person or corporate body who has a contract with the contractor to carry out a part of the construction work in the contract, which includes the work on site.
- xiii) Temporary works are works designed, constructed, installed, and removed by the contractor that are needed for construction or installation of the works.

- xiv) Market Rate shall be the rate as decided by the competent authority on the basis of the cost of materials and labor at the site where the work is to be executed plus the percentage mentioned in Schedule 'F' to cover, all overheads and profits.
- xv) Schedule(s) referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard Schedule of Government mentioned in Schedule 'F' hereunder, with the amendments thereto issued up to date of receipt of the tender.
- xvi) Department/Owner means PHED, Government of Bihar, which invite tenders on behalf of Governor of Bihar as specified in schedule 'F'
- xvii) Specification means the specifications followed by PHED Bihar mention in bids documents.
- xviii) Tender value means the value of the entire work as stipulated in the letter award.

Scope and Performance

- 3. Where the context so requires, words imparting the singular only also include the plural and vice versa. Any reference to masculine gender shall whenever required include feminine gender and vice versa.
- 4. Heading and Marginal notes to these General Conditions of Contract shall not be deemed to form part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.
- 5. The contractor shall be furnished, free of cost one certified copy of the contract documents except standard specifications, Schedule of Rates, and such other printed and published documents, together with all drawings as may be forming part of the tender papers, none of these documents shall be used for any purpose other than that of this contract.

Works to be carried out

- 6. The work to be carried out under the Contract shall, except as otherwise provided these conditions, all labor, materials, tools, plants, equipment, and transport which may be required in preparation of and for and in the full and entire execution and completion of the works. The descriptions given in the Schedule of Quantities (Schedule-A) shall unless otherwise stated, be held to include wastage on materials, carriage, and cartage, carrying and return of empties, hoisting, setting, fitting, and fixing in position and all other labors necessary in and

for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognized principles.

Sufficiency of Tender

7. The contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the works.

Discrepancies and adjustment of Errors

8. The several documents forming the contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scale and special conditions in preference to General Conditions.
- 8.1 In the case of discrepancy between the schedule of Quantities, the Specifications and/or the Drawings, the following order of preference shall be observed: -
- i) Description of Schedule of Quantities.
 - ii) Particular Specification and Special Condition, if any
 - iii) Drawings.
 - iv) PHED/ CPHEEO specification.
 - v) Indian Standard Specifications of B.I.S.
- 8.2 If there are varying or conflicting provisions made in any one document forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor.
- 8.3 Any error in description, quantity, or rate in Schedule of Quantities of any omission there from shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract.

Signing of Contract

9. The successful tenderer/contractor, after submitting the performance guarantee i.e., within 07 (Seven) days of receipt of letter of acceptance shall attend the office of the Engineer-in-Charge for authentication signing and completion of the contractor document and execute the agreement consisting of: -

- i) the notice inviting tender, all the documents including drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.
- ii) Standard P.W.D. Form as mentioned in Schedule 'F' consisting of:
Various standard clauses with corrections up to the date stipulated in Schedule 'F' along with annexure thereto.
- iii) Drawings.

CLAUSE OF CONTRACT

CLAUSE - 1

Performance Guarantee

- (i) The contractor shall submit an irrevocable PERFORMANCE GUARANTEE of 2% (Two Percent) of the tendered amount including earnest money in the shape as mentioned in the Bihar Financial Rules or Bank Guarantee, (work costing more than One Crore) or any other deposits mentioned for this proper performance of the contract agreement, (not withstanding and/or without prejudice to any there provisions in the contract) within period specified in scheduled 'F' from the date of issue of letter of acceptance. This period can be further extended by the Engineer-in-Charge up to a maximum period as specified in schedule 'F' on written request of the contractor stating the reason for delays in procuring the Bank Guarantee, to the satisfaction of the Engineer-in-Charge. This guarantee shall be in the form of NSC of Post office/ pledged in favour of department, D.D. of any Scheduled Bank or State Bank of India or Bank Guarantee (for work costing more than Rupees one Crore).
- (ii) The performance Guarantee shall be valid up to 28 days beyond the Defect liability Period (DLP).

- (iii) The Engineer-in-Charge shall not make a claim under the Performance guarantee except for amounts to which the Governor of Bihar is entitled under the contract (notwithstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:
- (a) Failure by the contractor to extend the validity of the performance Guarantee as described here in above, in which event the Engineer-In- charge make claim the full amount the performance Guarantee.
 - (b) Failure by the contractor to pay Governor of Bihar any amount due, either as agreed by the contractor or determined under any of the Clauses/Conditions of the agreement within 30 days of the service of notice to this effect by Engineer-in-Charge.
 - (c) Failure by the contractor to rectify any defects as defined in the defect liability clause in the schedule - F of contract data to the satisfaction of the Engineer-in-Charge.
- (iv) In the event of the contract being determined or rescinded under provisions of any of the clause/condition of the agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of the Governor of Bihar.

Additional Performance Guarantee

If the lowest bid of the contractor is below the estimated value of the works, then the additional performance guarantee at the following rates (on cumulative basis) will be given by the contractor.

a. Rates below 0 -5 % of the estimated value	0.25 % per percent below
b. Rates below 5 -15 % of the estimated value	0.50 % per percent below
c. Rates below 15 -20 % of the estimated value	1.00 % per percent below
d. Rates below 20 % of the estimated value	2.00 % per percent below

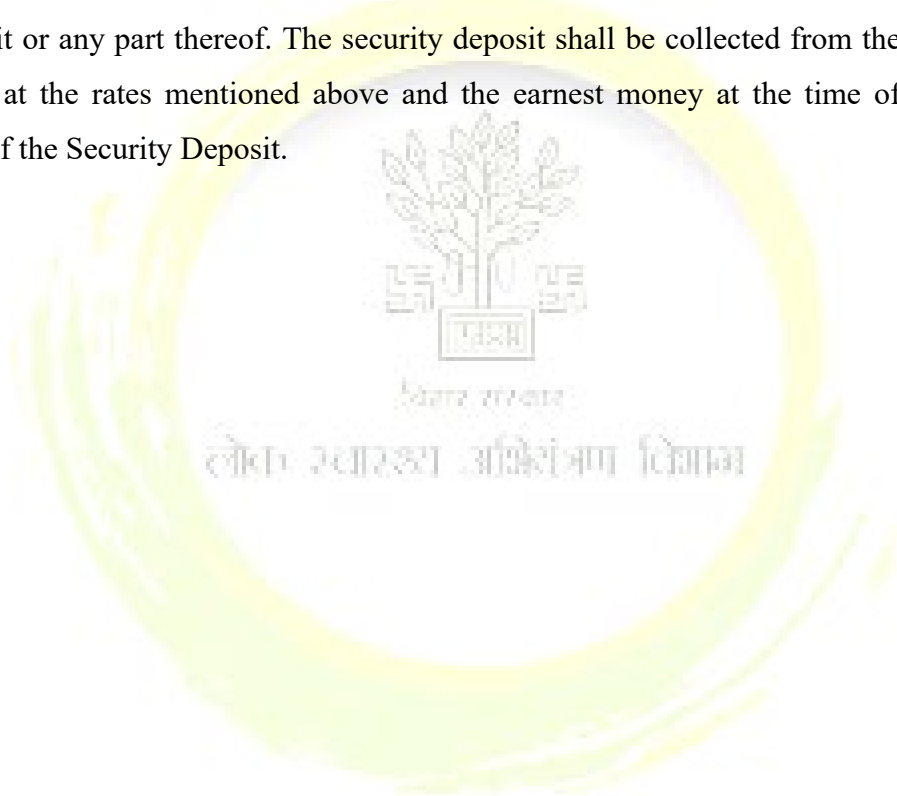
CLAUSE - 1A

Recovery of Security Deposit

The person/persons whose tender(s) may be accepted (hereinafter called the contractor) shall permit Government at the time of making any payment to him for work done under the contract to deduct a sum at 8% (eight percent) from the gross amount of each running bill including final bill till full amount of security deposit 10% (ten percent) of agreement value or value of work (whichever is

higher) is reached. If value of work exceeds the agreement value, security deposit (10%) will be recovered for the exceeded work.

All compensations or the other sums of money payable by the contractor under the terms of this contract may be deduced from, or paid by the sale of a sufficient part of his security deposit or from the interest arising there from, or from any sums which may be due to or may become due to the contractor by Government on any account whatsoever and in the event of his Security Deposit being reduced by reason of any such deductions or sale as aforesaid, the contractor shall within 10 days make good in cash or fixed deposit receipt tendered by the State Bank of India or by Scheduled Banks or Government Securities (if deposited for more than 12 months) endorsed in favour of the Engineer-in-Charge, any sum or sums which may have been deducted from, or raised by sale of his security deposit or any part thereof. The security deposit shall be collected from the running bills of the contractor at the rates mentioned above and the earnest money at the time of tenders will be treated a part of the Security Deposit.



CLAUSE - 2

Compensation for Delay (Liquidated Damage)

If the contractor fails to maintain the required progress in terms of clause 5 or to complete the work and clear the site on or before the contract or extended date of completion, he shall without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the Superintending Engineer (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day/month (as applicable) that the progress remains below that specified in Clause 5 or that the work remains incomplete. This will also apply to items or group of items for which a separate period of completion has been specified.

i) Compensation for delay of work @ 2 % per month of delay to be computed on per Day basis.

Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the Tendered Value of work or to the Tendered Value of the item or group of items of work for which a separate period of completion is originally given.

The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the Government. In case, the contractor does not achieve a particular milestone mentioned in schedule-F, or the rescheduled milestone(s) in terms of Clause 5.4, the amount shown against that milestone shall be withheld, to be adjusted against the compensation levied at the final grant of extension of time. Withholding of the amount on failure to achieve a milestone, shall be automatic without any notice to the contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest, whatsoever, shall be payable on such withheld amount.

The Contractor is required to submit time schedule for completion of work. It will form part of the agreement.

CLAUSE - 2A

Incentive for early completion

In case, the contractor completes the work ahead of scheduled completion time, a bonus @ 1% (one percent) of the tendered value per month computed on per day basis, shall be payable to the contractor, subject to a maximum limit of 5% (five percent) of the tendered value. The amount of bonus, if payable shall be paid along with final bill after completion of work. Provided always that provision of the Clause 2A shall be applicable only when so provided in 'Schedule F'

CLAUSE - 3

When Contract can be Determined/ Rescined

Subject to the other provisions contained in this clause the Engineer-in-Charge may without prejudice to his any other rights or remedy against the contractor in respect of any delay inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:

- i) If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or ill workmanship like manner shall omit to comply with the requirement of such notice for a period of seven days thereafter.
- ii) If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wind up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.
- iii) If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the work by the date of completion and continues to do so after a notice in writing of seven days from the Engineer-in-Charge.
- iv) If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge.

- v) If the contractor persistently neglects to carry out his obligations under the contract and/or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge.
- vi) If the contractor commits any acts mentioned in Clause - 21 hereof:
- vii) If the work is not started by the contractor within 1/8th of the stipulated time subject to the maximum of 45 days.

When the Contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge on behalf of the Governor of Bihar shall have powers:

- a) To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the contractor under the hand of Engineer-in-Charge shall be conclusive evidence). Upon such determination or rescission, the Earnest Money Deposit, Security Deposit already recovered and Performance Guarantee under the contract shall be liable to be forfeited and shall be absolutely at the disposal of the Government.
- b) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof as shall be un-executed out of his hands and to give it to another contractor to complete the work. The contractor, whose contract is determined or rescinded as above, shall not be allowed to participate in the tendering process for the balance work.

In the event of above course(s) being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid the contractor shall not be entitled to recover or be paid any sum for any work there of or actually performed under this contract unless and until the Engineer-in-Charge has 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.

CLAUSE 3A

In case, the work cannot be started due to reasons not within the control of the contractor as decided by Chief Engineer within 1/4th of the stipulated time for completion of work, either party may close the contract. In such eventuality, the Earnest Money deposit and the performance Guarantee of the contractor shall be refunded, but no payment on account of interest, loss of profit or

damages etc. shall be payable at all. the reasons shall be examined by the Superintending Engineer and his decision shall be final and binding.

CLAUSE - 4

Contractor liable to pay compensation even if action not taken under Clause 3

In any case in which any of the powers conferred upon the Engineer-in-Charge by Clause-3 thereof, shall have become exercisable and the same are not exercised the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case a default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work, or any part thereof, paying or allowing for the same in account at the contract rates or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale be final and conclusive against the contractor.

CLAUSE - 5

Time and Extension for delay

The time allowed for execution of the Works as specified in the Schedule 'F' or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as mentioned in letter of acceptance. If the Contractor commits default in commencing the execution of the work as aforesaid, Government shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the security deposit absolutely.

5.1 As soon as possible after the contract is concluded the Contractor shall submit a Time & Progress Chart and get it approved by the Department. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the work. It shall indicate the forecast of the dates of commencement and completion of various trades or sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and Contractor within the limitations of time imposed in the contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per milestone given in schedule 'F'

5.2 If the work(s) be delayed by.

- i) Force majeure, or
- ii) Serious loss or damage by fire, or Civil commotion, local.
- iii) Delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract, or
- iv) Non-availability of stores, which are the responsibility of Government to supply, or
- v) Non-availability or break down of tools and Plant to be supplied or supplied by Government, or
- v) Any other cause which, in the absolute discretion of the authority mentioned in Schedule 'F' is beyond the Contractor's control.

then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

5.3 Request for the rescheduling of Milestones and extension of time, to be eligible for consideration, shall be made by the contractor in writing within fourteen days of the happening of the hindering event causing delay on the prescribed form. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

5.4 In any such case the authority mentioned in Schedule 'F' may give a fair and reasonable extension of time and reschedule the milestones for completion of work. Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing, within 3 months of the date of receipt of such request. Non application by the contractor for extension of time shall not be a bar for

giving a fair and reasonable extension by the Engineer-in-Charge and this shall be binding on the contractor.

5.5 The basic centerlines, reference points and benchmarks will be fixed by the department. The contractor shall establish at his own cost at suitable points, additional reference lines and bench marks as may be necessary and instructed by the engineer-in-charge. The contractor shall remain responsible for the sufficiency and accuracy of all the bench marks and reference lines.

CLAUSE 5 - A

Minutes of Meeting

The Engineer may require the contractor to attend a progress review meeting during execution of work. The Engineer shall record the minutes of the meeting and provide a copy to the Contractor for compliance. These minutes will be a part of evidence in case of any request for extension of time or impunities action against the contractor.

CLAUSE - 6

Measurement of Work Done

Engineer-in-Charge shall, except as otherwise provided, ascertain, and determine measurement and the value in accordance with the contract of work done.

All measurement of all items having financial value shall be entered in Measurement Book and/or level field book so that a complete record is obtained of all works perform under the contract.

All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the contractor or his authorized representative at least once in a month during the progress of the work and such measurements shall be signed and dated by the Engineer-in-Charge and the contractor or their representatives in token their acceptance. If the contractor objects to any of the measurements recorded, a note shall be made to that effect with and signed by both the parties.

If for any reason the contractor or his authorized representative is not available and the work of recording measurements is suspended by the Engineer-in-Charge or his representative, the Engineer-in-Charge and the Department shall not entertain any claim from contractor for any loss or damages on this account. If the contractor or his authorized representative does not remain present at the time of such measurements after the contractor or his authorized representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week

from the date of the measurement, then such measurements recorded in his absence by the Engineer-in-Charge or his representative shall be deemed to be accepted by the Contractor.

The contractor shall, without extra charge, provide all assistance with every appliance labor and other things necessary for measurements and recording levels.

Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of India Standards and if for any item no such standard is available then a mutually agreed method as approved by the department shall be followed.

The contractor shall give not less than seven days notice to the Engineer-in-Charge or his authorized representative 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 dimension thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurement without such notice having been given or the Engineer-in-Charge's consent being obtained in writing 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 the materials with which the same was executed.

Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the department to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.

It is also a term of this contract that recording of measurements of any item of work in the measurement book and/or its payment in the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the contractor from liabilities from any over measurement defects noticed till completion of the defect's liability period.

CLAUSE – 7

No payment shall be made for work for less than the estimated work of Rs. 2.5 lacs till the whole of the work shall have been completed and certificate of completion given. For works estimated to cost over Rs. 2.5 lacs the interim or running account bill shall be submitted by the contractor for the work executed on the basis of such recorded measurements on the format of the Department in triplicate on or before the date of every month fixed for the same by the Engineer-in-Charge. The contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment is less than the amount specified in Schedule 'F', in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved. The Engineer- in-Charge shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurements of the work. In the event of the failure of the contractor to submit the bills, Engineer-in-Charge shall prepare or cause to be prepared such bills in which event no claims whatsoever due to delays on payment including that of interest shall be payable to the contractor. Payment on account of amount admissible shall be made by the Engineer-in-Charge certifying the sum to which the contractor is considered entitled by way of interim payment at such rates as decided by the Engineer-in-Charge. The amount admissible shall be paid by 10th working day after the day of presentation of the bill by the Contractor to the Engineer-in-Charge or his Assistant Engineer together with the account of the material issued by the department, or dismantled materials, if any. In the case of works outside the headquarters of the Engineer-in-Charge the period of ten working days will be extended to fifteen working days.

All such interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Engineer-in-Charge relating to the work done or materials delivered forming part of such payment may be modified or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the contract and specifications. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Engineer-in-Charge under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.

Pending consideration of extension of date of completion interim payments shall continue to be made as herein provided as per clause - 2, without prejudice to the right of the

department to take action under the terms of this contract for delay in the completion of work, if the extension of date of completion is not granted by the competent authority

CLAUSE - 8

Completion Certificate and Completion Plans

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within fifteen days of the receipt of such notice the Engineer-in-Charge shall Inspect the work and if there is no defect in the work shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of execution thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirements of this clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid 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 materials and rubbish etc. and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of the scaffolding or surplus materials aforesaid except for any sum actually released by the sale thereof.

CLAUSE - 8 A NA

CLAUSE - 8 B

Completion plans to be Submitted by the Contractor

The contractor shall submit completion plan as required vide General Specifications for Electrical works (Part-I internal) 1972 and (Par-II External) 1974 as applicable within thirty days of the completion of the work.

In case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to a ceiling of Rs. 15,000 (Rs. Fifteen thousand only) as may be fixed by the Superintending Engineer concerned and in this respect the decision of the Superintending Engineer shall be final and binding on the contractor.

CLAUSE - 9

Payment of Final Bill

The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-Charge whichever is earlier. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer-in-Charge, will, as far as possible be made within the period specified herein under, the period being reckoned from the date of receipt of the bill by the Engineer-in-Charge or his authorized Assistant Engineer, complete with account of materials issued by the Department and dismantled materials.

- i) If the Tendered value of work is upto Rs. 1 crore : 2 months
- ii) If the Tendered value of work exceeds Rs. 1 crore : 4 months

CLAUSE - 9A

Payment of Contractor's Bill to Banks

Payments due to the contractor may, if so desired by him, be made to his bank instead of direct to him provided that the contractor furnishes to the Engineer-in-Charge (1) an authorization in the form of a legally valid document such as a power of attorney conferring authority on the bank to

receive payments and (2) his own acceptance of the correctness of the amount made out as being due to him by Government or his signature on the bill or other claim preferred against Government before settlement by the Engineer-in-Charge of the account or claim by payment to the bank. While the receipt given by such banks shall constitute a full and sufficient discharge for the payment, the contractor shall wherever possible present his bills duly receipted and discharges through his bankers.

Nothing herein contained shall operate to create in favor of the bank any rights or equities vis-a-vis the Governor of Bihar.

CLAUSE - 10

Materials supplied by Government

Materials which Government will supply in rare case are shown in schedule 'B' which also stipulates quantum, place of issue and rate(s) to be charged in respect thereof. The contractor shall be bound to procure them from the Engineer-in-Charge. As soon as the work is awarded, the contractor shall finalize the programme for the completion of work as per clause 5 of this contract and shall give his estimates of materials required on the basis of drawings/or schedule of quantities of the work. The Contractor shall give in writing his requirement to the Engineer-in-Charge which shall be issued to him keeping in view the progress of work as assessed by the Engineer-in-Charge, in accordance with the agreed phased programme of work indicating monthly requirements of various materials. The contractor shall place his indent in writing for issue of such materials at least 7 days in advance of his requirement.

Such materials shall be supplied for the purpose of the contract only and the value of the materials so supplied at the rates specified in the aforesaid schedule shall be set off or deducted, as and when materials are consumed in items of work (including normal wastage) for which payment is being made to the contractor, from any sum then due or which may therefore become due to the contractor under the contract or otherwise or from the security deposit. At the time of submission of bills the contractor shall certify that balance of materials supplied is available at site in original good condition.

The contractor shall submit along with every running bill (on account or interim bill) material wise reconciliation statements supported by complete calculations reconciling total issue, total consumption and certified balance (diameter/section-wise in the case of steel) and resulting

variations and reasons therefore. Engineer-in-Charge shall (whose decision shall be final and binding on the contractor) be within his rights to follow the procedure of recovery in clause 42 at any stage of the work if reconciliation is not found to be satisfactory.

The contractor shall bear the cost of getting the material issued, loading, transporting to site, unloading, storing under cover as required, cutting assembling and joining the several parts together as directed by the engineer-in-charge. Notwithstanding anything to the contrary contained in any other clause of the contract and (or the PWD Code) all stores/materials so supplied to the contractor or procured with the assistance of the Government shall remain the absolute property of Government and the contractor shall be the trustee of the stores/materials, and the said stores/materials shall not be removed/disposed off from the site of the work on any account and shall be at all times open to inspection by the Engineer-in-Charge or his authorized agent. Any such stores/materials remaining unused shall be returned to the Engineer-in-Charge in as good a condition in which they were originally supplied at a require, but in case it is decided not to take back the stores/materials the contractor shall have no claim for compensation on any account of such stores/materials so supplied to him as aforesaid and not used by him or for any wastage in or damage to in such stores/materials.

On being required to return the stores/materials, the contractor shall hand over the stores/materials on being paid or credited such price as the Engineer-in-Charge shall determine, having due regard to the condition of the stores/materials. The price allowed for credit to the contractor, however, shall be at the prevailing market rate not exceeding the amount charged to him, excluding the storage charge, if any. The decision of the Engineer-in-Charge shall be final and conclusive. In the event of breach of the aforesaid condition, the contractor shall in addition to the throwing himself open to account for contravention of the terms of the licences or permit and/or for criminal breach of trust, be liable to Government for all advantages or profits resulting or which in the usual course would have resulted to him by reason or such breach. Provided that the contractor shall in no case be entitled to any compensation or damages on account of any delay in supply or non-supply thereof all or any such materials and stores provided further that the contractor shall be bound to execute the entire work if the materials are supplied by the Government within the original scheduled time for completion of the work plus 50% thereof or schedule time plus 6 months whichever is more if the time of completion of work exceeds 12 months but if a part of the materials only has been supplied within the aforesaid period then the contractor shall be bound to do so much of the work as may be possible with the materials and stores supplied in the aforesaid period. For the completion of the rest of the

work, the contractor shall be entitled to such extension of time as may be determined by the Engineer-in-Charge whose decision in this regard shall be final and binding on the contractor.

The contractor shall see that only the required quantities of materials are got issued. Any such material remaining unused and in perfectly good/original condition at the time of completion or determination of the contract shall be returned to the Engineer-in-Charge at the stores from which it was issued or at a place directed by him by a notice in writing. The contractor shall not be entitled for loading, transporting, unloading and stacking of such unused material except for the extra lead, if any involved, beyond the original place of issue. Quantities issued in excess of requirement with respect to work done and not returned back to the department, recovery will be made of double of issue rate.

CLAUSE - 10 A

Materials to be provided by the Contractor

The contractor shall, at his own expense, provide all materials, required for the works other than those which are stipulated to be supplied by the Govt. The contractor shall, at his own expense and without delay, supply to the Engineer-in-Charge samples of materials to be used on the work and shall get these approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract. The contractor shall, if requested by the Engineer-in-Charge furnish proof, to the satisfaction of the Engineer-in Charge that the materials so comply. The Engineer-in-Charge shall within fifteen days of supply of samples or within such further period as he may require intimate to the Contractor in writing whether sample are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the Engineer-in-Charge for his approval fresh samples complying with the specifications laid down in the contract. When materials are required to be tested in accordance with specifications, approval of the Engineer-in-Charge shall be issued after the test results are received.

The Contractor shall at his risk and cost submit the samples of materials to be tested or analyzed and shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by the Engineer-in-Charge. The Contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of materials.

The contractor shall, at his risk and cost, make all arrangements and shall provide all facilities as the Engineer-in-Charge may require for collecting, and preparing the required number of samples

for such tests at such time and to such place or places as may be directed by the Engineer-in-Charge and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The Engineer-in-Charge or his authorized representative shall at all time have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the contractor shall afford every facility and every assistance in obtaining the right to such access.

The Engineer-in-Charge shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default the Engineer-in-Charge shall be at liberty to employ at the expense of the contractor, other persons to remove the same without being answerable or accountable for any loss for damage that may happen or arise to such materials. The Engineer-in-Charge shall also have full powers to require other proper materials to be substituted thereof and in case of default the Engineer- In-Charge may cause the same to be supplied and all costs which may attend such removal and substitution shall borne by the Contractor.

CLAUSE - 10 B (NOT APPLICABLE)

Secured Advance on Non- perishable Materials

i) The contractor, on signing an indenture in the form to be specified by the Engineer-in-Charge, shall be entitled to be paid during the progress of the execution of the work up to 75% of the assessed value of any materials which are in the opinion of the Superintending Engineer nonperishable, non-fragile and non combustible and are in accordance with the contract and on the site in connection therewith and are adequately stored and/or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which advance has been made under this sub-clause are incorporated in the work the amount of such advance shall be recovered/deducted from the next payment made under any or the clause or clauses of this contract.

Mobilization Advance

ii) Deleted

Mobilization advance not exceeding 10% of the tendered value may be given, if requested by the contractor in writing within one month of the order to commence the work. In such a case the contractor shall execute a Bank Guarantee/ Bond from a Scheduled Nationalised Bank as specified by the Engineer-in-Charge for the full amount of such advance before it is released. Such advance shall be in two or more installments to be determined by the Engineer-In-

charge at his absolute discretion. The first installment of such advance before shall be released by the Engineer-in- Charge to the contractor on a request made by the contractor to the Engineer-in- Charge in this behalf. The second and subsequent installment shall be released by the Engineer-in-Charge only after the contractor furnishes a proof of the satisfactory utilization of the earlier installment to the entire satisfaction of the Engineer-In-Charge.

Plants & Machinery & Shuttering Material Advance

iii) Deleted

An advance for plant machinery required for the work and brought to site by the Contractor may be given if requested by the contractor in writing within one month of bringing such plant and machinery to site. Such advance shall be given on such plant and machinery which in the opinion of the Engineer-in-Charge will add to the expeditious execution of work and improve the quality of work. The amount of advance shall be restricted to 5% of the tender value. In the case of new plant and equipment to be purchased for the work the advance shall be restricted to 85% of the price of such new plant and equipment paid by the contractor for which the contractor shall produce evidence satisfactory to the Engineer-in-Charge and approval from Engineer-in-Charge. In the case of second hand and used plants and equipment, the amount of such advance shall be limited to 50% of the depreciated value of plant and equipment as may be decided by the Engineer-in-Charge. The contractor shall, if so required by the Engineer-in-Charge, submit the statement value of such old plant and equipment duly approved by a Registered Valuer recognized by the Central Board of Direct Taxes under the Income-Tax Act, 1961. No such advance shall be paid on any plant and equipment of perishable nature and on the plant and equipment of a value less than Rs. 50,000/- Seventy five percent of such amount of advance shall be paid after the plant & equipment is brought to site and balance twenty five percent on successfully commissioning the same only after approval from Engineer-in-Charge.

Leasing of equipment shall be considered at par with purchase of equipment and shall be covered by tripartite agreement with the following:

1. Leasing company which gives certificate of agreeing to lease equipment to the contractor.
2. Engineer in Charge, and
3. The contractor.

This advance shall further be subject to the condition that such plant and equipment (a) are considered by the Engineer-in-Charge to be necessary for the works; (b) and are in and are maintained in working order; (c) hypothecated to the Government as specified by the Engineer-in-Charge before the payment of advance is released. The contractor shall not be permitted to remove from the site such hypothecated plant and equipment without the prior written permission of the Engineer-in-Charge. The contractor shall be responsible for maintaining such plant and equipment in good working order during the entire period of hypothecation falling which such advance shall be entirely recovered in lump sum. For this purpose steel scaffolding and from work shall be treated as plant and equipment.

The contractor shall insure the Plant and Machinery for which mobilization advance is sought and given, for a sum sufficient to provide for their replacement at site. Any amounts not recovered from the insurer will be borne by the contractor.

Interest & Recovery

iv) The mobilization advance and plant and machinery advance in (ii) & (iii) above bear simple interest and should be equal to the prevailing rate of interest charged by the bank as mentioned in contract date schedule 'F' and shall be calculated from the date of payment to the date of recovery both days inclusive, on the outstanding amount of advance; Recovery of such sums advanced shall be made by the deduction from the contractor's bills commencing after first ten percent of the gross value of the work is executed and paid, on pro-rate percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered by the time eighty percent of the gross value of the contract is executed and paid together with interest due on the entire outstanding amount up to the date of the installment.

v) If the circumstances are considered reasonable by the Engineer-in-Charge, the period mentioned in (ii) and (iii) for request by the contractor in writing for grant of mobilization advance and plant and equipment advance may be extended in the discretion of the Chief Engineer.

vi) The said bank guarantee for advances shall initially be made for the full amount and valid for the contract period, and be kept renewed from time to time to cover the balance amount and likely period of complete recovery together with interest.

vii) Any materials including tools, plants, equipments etc brought to the site shall not be removed from the sites without the written permission of the Engineer-in-Charge.

CLAUSE - 10 C (NOT APPLICABLE)

Payment on Account of increase in prices/ Wages due to Statutory Order(s)

If after submission of the tender the price of any material incorporated in the works (not being a material supplied from the Engineer-in-Charge's stores in accordance with clause 10 thereof) and/or wages of labor increases as a direct result of the coming into force of any fresh law, or statutory rule or order (but not due to any changes in sales tax) and such increase in the price and/or wages prevailing at the time of the last stipulated date for receipt of the tenders including extensions if any for the work, and the contractor thereupon necessarily and properly pays in respect of that material (incorporated in the works) such increased price and / or in respect of labor engaged on the execution of the work such increased wages, then the amount of the contract shall accordingly be varied and provided further that any such increase shall not be payable if such increase has become operative after the stipulated date of completion of the work in question.

If after submission of the tender, the price of any material incorporated in the works (not being a material supplied from the Engineer-in-Charge's stores in accordance with clause 10 thereof) and/or wages of labor is decreased as a direct result of the coming not force of any law or statutory rules or order (but not due to any changes in sales tax) and such decrease in the prices and/or wages prevailing at the time of receipt of the tender for the work. The government shall in respect of materials incorporated in the works (not being materials supplied from the Engineer-in-Charge's stores in accordance with Clause-10 hereof) and / or labor engaged on the execution of the work after the date of coming into force of such law statutory rule or order be entitled to deduct from the dues of the contractor such amount as shall be equivalent to the difference between the prices of the materials and/or wages as prevailed at the time of the last stipulated date for receipt of tenders including extensions if any for the work and the price of materials and/or wages of labor on the coming into force of such law, statutory rule or order.

The contractor shall, for purpose of this condition, keep such books of account and other documents as are necessary to show the amount of any increase claimed or reduction available and shall allow inspection of the same by a duly authorized representative of the Government, and further shall, at the request of the Engineer-in-Charge may require any documents so kept and such other information as the Engineer-in-Charge may require.

The contractor shall, within a reasonable time of his becoming aware of any alteration in the price of any such material and/or wages of labor, give notice thereof to the Engineer-in-Charge stating that the same is given pursuant to this condition together with all information relating thereto which he may be in position to supply.

CLAUSE - 10 CA (NOT APPLICABLE)

Payment on Account of increase/ decrease in Prices of Construction materials after receipt of tender

If after submission of the tender, the price of cement or steel reinforcement bars incorporated in the works (not being a material supplied from the Engineer-in-Charge's stores in accordance with Clause 10 thereof) increase(s) beyond the price(s) prevailing at the time of the last stipulated date for receipt of tenders (including extensions, if any) for the work, then the amount of the contract shall accordingly be varied and provided further that any such increase shall not be payable if such increase has become operative after the stipulated date of completion of work in question.

If after submission of the tender, the prices of cement and/or steel reinforcement bars/bitumen incorporated in the works (not being a material stipulated from the Engineer-in-Charge's stores in accordance with the clause 10 thereof) is decreased. Government shall in respect of these materials incorporated in the works (not being materials supplied from the Engineer-in-Charge's stores in accordance with Clause 10 thereof) be entitled to deduct from the dues of the contractor such amount as shall be equivalent to the difference between the prices of Cement and/or Steel reinforcement bars/bitumen as prevailed at the time of last stipulated date for receipt of tenders including extensions if any for the work and prices of these materials on the coming into force of such base price of cement and/or steel reinforcement bars/bitumen issued under authority of Schedule of Rate Committee.

The increase/decrease in prices shall be determined by the All-India Wholesale Price Indices for Cement and Steel (bars and rods) as published by Economic Advisor to Government of India, Ministry of Commerce and Industry and base price for cement and/or steel reinforcement bars/bitumen as issued under authority of Scheduled of Rates Committee as valid on the last stipulated date of receipt of tender, including extension if any and for the period under consideration.

The amount of the contract shall accordingly be varied for cement or steel reinforcement bars/bitumen will be worked out as per the formula given below: –

Adjustment for cement component

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

$$V_0 = 0.85 \times P_0 / 100 \times R \times (C_1 - C_0) / C_0$$

V_0 = increase or decrease in the cost of work during the month under consideration due to changes in rates for cement.

R = Value of the work.

C_0 = The all-India wholesale price index for cement on 28 days preceding the date of opening of Bids as published by the Ministry of Industrial Development, Government of India, New Delhi.

C_1 = The all-India average wholesale price index for cement for the month under consideration as published by Ministry of Industrial Development, Government of India, New Delhi.

P_0 = Percentage of cement component of the work.

Adjustment for Steel Component

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

$$V_s = 0.85 \times P_s / 100 \times R \times (S_1 - S_0) / S_0$$

V_s = Increase or decrease in the cost of work during the month under consideration due to changes in the rates for steel.

R = Value of the work

S_0 = The all-India wholesale price index for steel (Bars and Rods) on 25 days preceding the date of opening of Bids as published by the Ministry of Industrial Development, Government of India, New Delhi.

S_1 = The all-India average wholesale price index for steel (Bars 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 chosen to represent steel group.

Adjustment of Bitumen component

- (iii) Price adjustment for increase or decrease in the cost of Bitumen shall be paid in accordance with the following formula:

$$V_b = 0.85 \times P_b / 100 \times R \times (B_1 - B_0) / B_0$$

V_b = Increase or decrease in the cost of work during the month under consideration due to changes in the rates for Bitumen.

B_0 = The official retail price of Bitumen at the IOC depot at nearest centre on the 28 days prior to date of opening of Bids.

B_1 = The official retail price of Bitumen at the IOC depot at nearest centre for the 15th day of the month under consideration.

P_b = Percentage of bitumen component of the work.

CLAUSE - 10 CC (NOT APPLICABLE)

Payment due to increase/ decrease in Price/Wages after receipt of tender (Time of completion more than 18 Months)

Contract price shall be adjusted for increase or decrease in rates and price of labor, materials, fuels, and lubricants in accordance with the following principles and procedures and as per formula given in the contract data:

- (a) The price adjustment shall apply for the work done from the start date given in the contract data up to end of the initial intended completion date of extensions granted by the Engineer and shall not apply to the work carried out beyond the stipulated time for reasons attributable to the contractor.
- (b) Following expressions and meanings are assigned to the work done during each month.

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.

- (c) 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 formulas (e) for adjustment of prices are:

Adjustment for labor component

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

$$V_L = 0.85 \times P_1 / 100 \times R \times (L_1 - L_0) / L_0$$

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

R = Value of the work

L_0 = the consumer price index for industrial workers for the State on 28 days preceding the date of opening of Bids as published by labor Bureau, Ministry of Labor, Government of India.

L_1 = The consumer price index for industrial workers for the State for the under consideration as published by labor Bureau, Ministry of labor, Government of India.

P_1 = Percentage of labor component of the work.

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:

$$V_0 = 0.85 \times P_0 / 100 \times R \times (C_1 - C_0) / C_0$$

V_0 = increase or decrease in the cost of work during the month under consideration due to changes in rates for cement.

R = Value of the work

C_0 = The all-India wholesale price index for cement on 28 days preceding the date of opening of Bids as published by the Ministry of industrial Development, Government of India, New Delhi.

C_1 = The all-India average wholesale price index for cement for the month under consideration as published by Ministry of Industrial Development, Government 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:

$$V_s = 0.85 \times P_s / 100 \times R \times (S_1 - S_0) / S_0$$

V_s = Increase or decrease in the cost of work during the month under consideration due to changes in the rates for steel.

R = Value of the work

S_0 = The all-India wholesale price index for steel (Bars and Rods) on 25 days preceding the date of opening of Bids as published by the Ministry of Industrial Development, Government of India, New Delhi.

S_1 = The all-India average wholesale price index for steel (Bars and Rods) for the month under consideration as published by Ministry of industrial Development, New Delhi.

P_1 = Percentage of labor component of the work.

Note: For the application of the clause, Index of Bars and Rods has been chosen to represent steel group.

Adjustment of POL (fuel and lubricant) component

- (iv) Price adjustment for increase or decrease in the cost of POL (fuel and lubricant) shall be paid in accordance with the following formula:

$$V_1 = 0.85 \times P_1 / 100 \times R \times (F_1 - F_0) / F_0$$

V_1 = Increase or decrease in the cost of work during the month under consideration due to changes in rates for fuel and lubricants.

R = Value of the work

F_0 = The official retail price of High-Speed Diesel (HSD) at the existing consumer pumps of IOC at nearest center on the day 28 days prior to the date of opening of Bids.

F_1 = The official retail price of HSD at the existing consumer pumps of IOC at nearest center for the 15th day of month of the under consideration.

P_1 = 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 for Plant and Machinery Spares component

- (v) Price adjustment for increase or decrease in the cost of plant and machinery spares procured by the Contractor shall be paid in accordance with the following formula:

$$V_p = 0.85 \times P_p / 100 \times R \times (P_1 - P_0) / P_0$$

V_p = Increase or decrease in the cost of work during the month under consideration due to changes in rates for plant and machinery spares.

R = Value of the work

P_0 = The all-India wholesale price Index for heavy machinery and parts on 28 days preceding the date of opening of Bids as published by the Ministry of Industrial Development, Government of India, New Delhi.

P_1 = The all-India average wholesale price index for heavy machinery and parts for the month under consideration as published by Ministry of Industrial Development, Government of India, New Delhi.

P_1 = Percentage of plant and machinery spares component of the work.

Note: For the application of this clause, Index of Heavy machinery and Parts has been chosen to represent the Plant and Machinery Spares group.

Adjustment of other materials component

(vi) Price adjustment for Increase or decrease in cost of local materials other than cement, steel, bitumen, and POL procured by the contractor shall be paid in accordance with the following formula:

$$V_m = 0.85 \times P_m / 100 \times R \times (M_1 - M_0) / M_0$$

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.

R = Value of the work

M_0 = The all-India wholesale price index (all commodities) on 28 days preceding the date of opening of Bids, as published by the Ministry of Industrial Development, Government of India, New Delhi.

M_1 = The all-India wholesale price index (all commodities) for the month under consideration as published by

Ministry of Industrial Development, Government of India, New Delhi.

P_1 = 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:

1.	labor – P_1	25%
2.	Cement – P_c	5%
3.	Steel – P_s	5%
4.	Bitumen P_b	10%
4.	POL – P_1	5%
5.	Plant & Machinery Spares – P_p	5%
6.	Other materials – P_m	45%
		<hr/> Total – 100%

(vii) In contract where clause 10CA is applicable, this clause 10CC will not be applicable and in contract where this clause 10CC is applicable previous clause 10CA will not be applicable.

CLAUSE - 10 D **N/A**

Dismantled Material Govt. Property

The contractor shall treat all materials obtained during dismantling of structure, excavation of the site for a work, etc. as Government's property and such materials shall be disposed off to the best advantage of Government according to the PWD codal provision.

CLAUSE - 11

Work to be Executed in Accordance with Specifications, Drawings, Orders etc.

The contractor shall execute the whole and every part of the work in the most substantial and workman like manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer-in-Charge and the

contractor shall be furnished free of charge one copy of the contract documents together with specification, designs, drawings and instruction as are not included in the standard specifications of Public Health Engineering Department specified in Schedule 'F' or in any Bureau of Indian Standard or any other, published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the contract.

The contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labor and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability, and safety of all the works and methods of construction.

CLAUSE - 12

Deviation/ Variations Extent and Pricing

The Engineer-in-Charge (As per codal provision) shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge after approval from competent authority and such alterations omissions additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.

12.1 The time for completion of the works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered be extended, if requested by the contractor, as follows:

i) In the proportion which the additional cost of the altered, additional, or substituted work, bears to the original tendered value plus.

ii) 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge after approval from competent authority.

Deviation, extra items and Pricing

12.2 In the case of extra item(s) the contractor may within fifteen days of receipt of order or occurrence of the item(s) claim rates, supported by proper analysis, for the work and the Engineer-in-Charge after approval from competent authority shall within one month of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates as per power delegated in PWD Code and on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

Deviation Substituted items, Pricing

In the case of substituted items, the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the aforesaid Para.

(a) If the market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted) the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

b) If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted) the rate payable to the contractor for the substituted item shall be rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

Deviation, Deviated Quantities, Pricing

In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in Schedule F, the contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis, for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities the Engineer-in-Charge shall within one month of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates as per power delegated in PWD Code and on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

12.3 The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in Schedule 'F' and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of receipt of the notice,

revise the rates as per power delegated in PWD Code for the work in question within one month of expiry of the said period of fifteen days having regard to the market rates or current schedule of rate.

12.4 The contractor shall send to the Engineer-in-Charge once every three months an up-to-date account giving complete details of all claims for additional payments to which the contractor may consider himself entitled and of all additional work ordered by the Engineer-in-Charge after approval from competent authority which he has executed during the preceding quarter failing which the contractor shall be deemed to have waived his right. However, the Superintending Engineer is authorized for consideration of such claims on merits.

12.5 For the purpose of operation of Schedule 'F' the following works shall be treated as works relating to foundation:

- i) For buildings, compound walls plinth level or 1.2 meters (4 feet) above ground level whichever is lower excluding items of flooring and D.P.C. but including base concrete below the floors.
- ii) For abutments, piers, retaining walls of culverts and bridges, walls of water reservoirs the bed of floor level.
- iii) For retaining walls where floor level is not determinate 1.2 meters above the average ground level or bed level.
- iv) For Roads all items of excavation and filling including treatment of sub-base.

12.6 Any operation incidental to or necessarily has to be in contemplation of tenderer while filing tender, or necessary for proper execution of the item included in the Schedule of quantities or in the schedule of rates mentioned above, whether or not, specifically indicated in the description of the item and the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or the rate given in the said schedule of rates, as the case may be. Nothing extra shall be admissible for such operations.

CLAUSE - 13

Foreclosure of Contract due to Abandonment or Reduction in Scope of Work

If at any time after acceptance of the tender Government shall decide to abandon or reduce the scope of the works for any reason whatsoever and hence not require the whole or any part of the works to be carried out, the Engineer-in-Charge shall give notice in writing to that effect to the contractor and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage

which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.

The contractor shall be paid at contract rates for works executed at site only.

CLAUSE - 14

Cancellation of contract in full or part

If the contractor:

- (i) At any time makes default in proceeding with works or any part of the work with due diligence and continues to do so after a notice in writing of 7 days from the Engineer-in-Charge; or
- ii) Commits default to comply with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge; or
- iii) Fails to Complete the works or items of work with individual dates of completion, on or before the date(s) of completion, and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge; or
- iv) Shall offer or give or agree to give to any person in Government service or to any other person on his behalf any gift or consideration of any kind an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract for Government; or
- v) Shall enter into a contract with Government in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Accepting Authority/Engineer-in-Charge; or
- vi) Shall obtain a contract with Government as a result of wrong tendering or other non-bonafide methods of competitive tendering; or
- vii) Being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time

being in force for the sequestration of his estate or if a trust deed be executed by him for benefit or his creditors; or

viii) Being a company, shall pass a resolution or the Court shall make an order for the winding up of the company, or a receiver or manager on behalf of the debenture holders or otherwise shall be appointed or circumstances shall arise which entitle the Court or debenture holders to appoint a receiver or manager; or

ix) Shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days; or

x) Assigns, transfers, sublets (engagement of labor on a piece-work basis or of labor with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Competent Authority;

The Competent Authority may, without prejudice to any other right or remedy which shall have accrued or shall accrues hereafter to Government, by a notice in writing to cancel the contract as whole or only such items of work in default from the Contract.

The Engineer-in-Charge shall on such cancellation by the Competent Authority have powers to:

(a) Take possession of the site and any materials, constructional plant, implements stores, etc, thereon; and/or

(b) Carry out the incomplete work by any means at the risk and cost of the contractor.

On cancellation of the contract in full or in part, the Engineer-in-Charge shall determine what amount, if any, is recoverable from the contractor for completion of the works or part of the works or in case the works or part of the works is not to be completed, the loss of damage suffered by Government. In determining the amount, credit shall be given to the contractor for the value of the work executed by him up to the time of cancellation, the value or contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor.

Any excess expenditure incurred or to be incurred by Government in completing the works or part of the works or the excess loss or damages suffered or which may be suffered by Government as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to Government in law be recovered from any moneys due to the contractor on any account, and if such moneys are not sufficient the contractor shall be called upon in writing and shall be liable to pay the same within 31 days.

If the contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractors unused materials, constructional plant, implements, temporary buildings, etc. and apply the proceeds of sale thereof towards the satisfaction of any sums due from the contractor under the contract and if thereafter there be any balance is outstanding from the contractor, it shall be recovered in accordance with the provisions of the contract.

Any sums in excess of the amounts due to Government and unsold materials, constructional plant, etc. shall be returned to the contractor, provided always that if cost or anticipated cost of completion by Government of the works or part of the works is less than the amount which the contractor would have been paid had he completed the works or part of the works, such benefit shall not accrue to the contractor.

CLAUSE - 15

Suspension of work

i) The contractor shall, on receipt of the order in writing of the Engineer-in-Charge (whose decision shall be final and binding on the contractor) suspend the progress of the works or any part thereof for such time and in such manner as the Engineer-in-Charge may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof, for any of the following reasons:

- a) On account of any default on the part of the contractor or;
- b) For proper execution of the works or part thereof for reasons other than the default of the contractor; or
- c) for safety of the works or part thereof.

The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-Charge.

- ii) If the suspension is ordered for reasons (b) and (c) in sub-Para (i) above, the contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25% for completion of the item or group of items of work for which a separate period of completion is specified in the contract and of which the suspended work forms a part, and;

CLAUSE - 16

Action in case Work not done as per Specifications

All works under or in course of execution or executed in pursuance of the contract shall at all times be open and accessible to the inspection and supervision of the Engineer-in-Charge, his authorized subordinates in charge of the work and all the superior officers, officer of the Quality Control Organization of the Department and of the Cabinet (Technical) Vigilance, and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either 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.

If it shall appear to the Engineer-in-Charge or his higher authority or his authorized subordinates in charge of the work or to the Cabinet (Technical) Vigilance or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or article provides by him for the execution of the work which are unsound or if a quality inferior to that contracted or otherwise not in accordance with the contract the contractor shall, on demand in writing which shall be made within the period specified in schedule – F of contract data from the Engineer-in-Charge specify in the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the contractor failing to do so within a period specified by the Engineer-in-Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under clause 2 of the contract (for non-completion of the work in time) for this default.

In such case the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the competent authority may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure and incidental items rectified, or removed and re-executed at the risk and cost of contractor. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same will be final and binding on the contractor.

CLAUSE - 17

Contractor Liable for Damages, defects during maintenance period

If the contractor or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road curb, fence enclosure, water pipe, cables, drains, electric or telephone post or wired, trees, grass or grassland, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within defect liability period after a certificate final or otherwise of its completion shall have been given by the Engineer-in-Charge as aforesaid arising out of defect or improper materials or workmanship the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Engineer-in-Charge cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his security deposit the proceeds of sale thereof or of a sufficient portion thereof. The security deposit of the contractor shall not be refunded before the expiry of defect liability period after the issue of the certificate final or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later. In case of maintenance of operation work of electrical and mechanical services the security deposits deducted from contractors shall be refunded within one month from the date of final payments or within one month from the date of completion of the maintenance contract whichever is earlier.

CLAUSE - 18

Contractor to Supply tools & Plants etc

The contractor shall provide at his own cost all 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 required for the proper execution of the work, whether original, altered or substituted and whether included in the specification or other document 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 requirements 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, weighting and assisting the measurement for examination 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 cost to the contractor, under this contract or otherwise and/or from his security deposit or the proceeds of sale thereof, or of sufficient portions thereof.

CLAUSE - 18 A

Recovery of Compensation paid to Workman

In every case in which by virtue of the provisions sub-section (1) of Section 12, of the Workmen's Compensations Act, 1923, Government is obliged to pay compensation to a workman 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 the Government under sub-section (2) of section 12, 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 Government to the contractor whether under this contract or otherwise. Government shall not be bound to contest any claim made against it under sub-section (1) Section 12, of the said Act, except on the written request of the contractor and upon his giving to Government full security for all costs for which Government might become liable in consequence of contesting such claim.

CLAUSE - 18 B

Ensuring payment and Amenities to Workers if Contractor fails

In every case in which by virtue of the provisions of the Contract labor (Regulation and Abolition) Act, 1970, and of the Contract labor (Regulation and Abolition) Central Rules, 1971, Government is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under Clause 19 H or under the P.W.D. Contractor's labor Regulations, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by P.W.D. Contractors, Government will recover from the contractor the amount of wages so paid or the amount of expenditure so incurred; and without prejudice to the rights of the Government under sub-section (2) of Section 20, and sub-section (4) of Section 21, of the Contract labor (Regulation and Abolition) Act, 1970, Government shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by Government to the contractor whether under this contract or otherwise Government shall not be bound to contest any claim made against it under sub-section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request

of the contractor and upon his giving to the Government full security for all costs for which Government might become liable in contesting such claim.

CLAUSE - 19

Labor Laws to be complied by the Contractor

The contractor shall obtain a valid license under the State labor Act, and the Contract labor (Regulation and Abolition) Central rules 1971, before the commencement of the work, and continue to have a valid license until the completion of the work. The contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, 1986.

The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.

Any failure to fulfill these requirements shall attract the penal provisions of the contract arising out of the resultant non-execution of the work.

CLAUSE - 19 A

No labor below the prescribed age shall be employed on the work.

CLAUSE - 19 B

Payment of Wages

i) The contractor shall pay to labor employed by him either directly or through sub-contractors, wages no less than fair wages as defined in P.W.D. Contractor's labor Regulations or as per the provisions of the Contract labor (Regulation and Abolition) Act 1970 and the contract labor (Regulation and Abolition) Central Rules, 1971 wherever applicable.

ii) The contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wage to labor indirectly engaged on the work including any labor engaged by his sub-contractors in connection with the said work, as if the labor had been immediately employed by him.

iii) In respect of all labor directly or indirectly employed in the works for performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with the Public Works Department contractor's labor Regulations made by Government from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorized made, maintenance of wage books or wage slips, publication of scale of

wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract labor (Regulation and Abolition) Act, 1970, and the Contract labor (Regulation and Abolition) Central Rules, 1971, wherever applicable.

iv) a) The Engineer-in-Charge concerned shall have the right to deduct from the moneys 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 fulfillment of the conditions of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the contract or non-observance of the Regulations.

b) Under the provision of Minimum Wages (Central) Rules 1950, the contractor is bound to allow to the labors directly or indirectly employed in the works one day rest for 6 days continuous work and pay wages at same rate as for duty. In the event of default, the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labors and pay the same to the persons entitled thereto from any money due to the contractor by the Engineer-in-Charge concerned.

v) The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Act, 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.

vi) The contractor shall indemnify and keep indemnified Government against payments to be made under and for the observance of the laws aforesaid and the P.W.D. Contractor's labor Regulations without prejudice to his right to claim indemnity from his sub-contractors.

vii) The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.

viii) Whatever is the minimum wage for the time being, or if the wage-payable higher than such wage, such wage shall be paid by the contractor to the workmen directly without the intervention of Jamadar and that Jamadar shall not be entitled to deduct or recover any amount from the minimum wage payable to the workmen as and by way of commission or otherwise.

ix) The contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by the Jamadar from the wage of workmen.

CLAUSE -19 C

In respect of all labor directly or indirectly employed in the work for the performance of the contractor's part of this contract, the contractor shall at his own expense arrange for the safety provisions as per P.W.D. Safety Code framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the contractor fails to make arrangement and provide necessary facilities as aforesaid he shall be liable to pay a penalty of Rs. 200/- for each default and in addition the Engineer-in-Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

CLAUSE - 20

Minimum wages Act to be complied with

The contractor shall at least pay and comply with all the provisions of the Minimum wages Acts and rules framed there under other labor laws related to contract labor.

CLAUSE - 21

Work not to be sublet, Action in case of insolvency

The contract shall not be assigned or sublet without the written approval of the Engineer-in-Charge. And if the contractor shall assign or sublet his contract or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised 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 Engineer-in-Charge on behalf of the Governor of Bihar shall have power to adopt the courses specified in Clause 3 hereof in the interest of Government and in the event of such course being adopted the consequences specified in the said Clause 3 shall ensure.

CLAUSE - 22

Compensation

All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of Government without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

CLAUSE - 23

Changes in firm's Constitution to be intimated

Where the contractor is a partnership firm, the previous approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concern such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby undertaken by the contractor. If previous approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of Clause 21 thereof and the same action may be taken, and the same consequences shall ensue as provided in the said Clause 21.

CLAUSE - 24

Approval of Engineer in Charge

As works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Engineer-in-Charge 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 on.

CLAUSE - 25

Settlement of Disputes & Arbitration

Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in-before mentioned and as to the quality of workmanship or materials 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 contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter.

i) If the contractor considered any work demanded of him to be outside the requirements of the contract, or dispute any drawings, record or decision given in writing by the Engineer-in-Charge on any matter in connection with or arising out of the contract or carrying out of the contract or carrying out of the work, to be unacceptable, he shall promptly within 7 days request the Superintending Engineer in writing for written instruction of decision. Thereupon, the

Superintending Engineer shall give his written instructions of decision within a period of fifteen days from the receipt of the contractor's letter. If the Superintending Engineer fails to give his instructions or decision in writing within the aforesaid period or if the contractor is dissatisfied with the instructions or decision of the Superintending Engineer, the contractor may, within 15 days of the receipt of Superintending Engineer's decision, appeal to the Chief Engineer who shall afford an opportunity to the contractor to be heard, if the later so desires, and to offer evidence in support of his appeal. The Chief Engineer shall give his decision within 30 days of receipt of contractor's appeal. If the contractor is dissatisfied with this decision, the contractor shall within a period of 30 days from receipt of the decision, give notice to the Chief Engineer for appointment of arbitrator failing which the said decision shall be final binding and conclusive and not referable to adjudication by the arbitrator.

ii) Except where the decision has become final, binding, and conclusive in terms of Sub Para (i) above disputes or difference shall be referred for adjudication through arbitrator appointed by Engineer-in-Chief or the administrative head of the said PHED. If the arbitrator so appointed is unable or unwilling to act or resign his appointment or vacates his office due to any reason whatsoever another sole arbitrator shall be appointed in the manner aforesaid. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the rejection by the Chief Engineer of the appeal.

It is also a term of this contract that no person other than a person appointed by such Engineer-in-Chief or the administrative head of the department as aforesaid should act as arbitrator and if for any reason that is not possible, the matter shall not be referred to arbitrator at all. It is also a term of this contract that if the contractor does not make any demand for appointment of arbitrator in respect of any claims in writing as aforesaid within 45 days of receiving the intimation from the Engineer-in-Charge that the final bill is ready for payment, the claim of the contractor shall be deemed to have been waived and absolutely barred and the Government shall be discharged and released of all liabilities under the contract in respect of these claims.

The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 (26 of 1996) or any statutory modifications or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.

It is also a term of the contract that if any fees are payable to the arbitrator these shall be paid equally by both the parties.

It is also a term of the contract that the arbitrator shall be deemed to have entered on the reference on the date the issues notice to both the parties calling them to submit their statement of claims and counter statement of claims. The venue of the arbitration shall be such place as may be fixed by the arbitrator in his sole discretion. The fees, if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any, of the arbitrator) shall be in the discretion of the arbitrator who may direct to any by whom and in what manner such costs or any part thereof shall be paid and fix or settle the amount of costs to be so paid.

All arbitration shall be held at PATNA and at no other place.

CLAUSE - 26

Contractor to indemnify Govt. against Patent Rights

The contractor shall fully indemnify and keep indemnified the Governor of Bihar against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article of part thereof included in the contract. In the event of any claims made under the action brought against Government in respect of any such matter as aforesaid the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify the Governor of Bihar if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Engineer-in-Charge in this behalf.

CLAUSE - 27

Lump sum Provisions in Tender

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

CLAUSE - 28

Action where no specifications are specified

In the case of any class of work for which there is no such specifications as referred to in Clause 11, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications, Indian Road Congress for road works and Indian Building Congress for building works or any central government agency. In case there are no such specifications in above codes/manuals the work shall be carried out as per manufacturers specifications. If not available then as per department specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-Charge.

CLAUSE - 29

With -holding and lien in respect of sums due from contractor

i) Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, the Engineer-in-Charge or the Government shall be entitled to with hold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the contractor and for the purpose aforesaid, the Engineer-in-Charge of the Government shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or if no security has been taken from the contractor, the Engineer-in-Charge or the Government shall be entitled to withhold and have a lien to retain to the extent of payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with the Engineer-in-Charge of the Government or any contracting person through the Engineer-in-Charge pending finalization of adjudication of any such claim.

It is an agreed term of contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or Government will be kept withheld or retained as such by the Engineer-in-Charge or Government till the claim arising out of or under the contract is determined by the arbitrator (if the contract is governed by the arbitration clause) or by the competent court, as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the

contractor is a partnership firm or a limited company, the Engineer-in-Charge or the Government shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company as the case may be, whether in his individual capacity or otherwise.

ii) 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, abstract etc., to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for Government to recover the same from him in the manner prescribed in sub-clause (i) of this clause or in any other manner legally permissible; 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, without any interest thereon whatsoever.

CLAUSE - 29 A

Lien in respect of claims in other contracts

Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or the Government or any other contracting person or persons through Engineer-in-Charge against any claim of the Engineer-in-Charge or Government or such other person or persons in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Engineer-in-Charge of the Government or with such other person or persons.

It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-in-Charge of the Government will be kept withheld or retained as such by the Engineer-in-Charge or the Government till his claim arising out of the same contract or any other contract is either mutually settled or determined by the arbitration clause or by the competent court, as the case may be and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

CLAUSE - 30

Unfiltered water supply

The contractor(s) shall make his/their own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following conditions.

- i) That the water used by the contractor(s) shall be fit for construction purposes to the satisfaction of the Engineer-in-Charge.
- ii) The Engineer-in-Charge shall make alternative arrangements for supply of water at the risk and cost of contractor(s) if the arrangements made by the contractor(s) for procurement of water are in the opinion of the Engineer-in-Charge, unsatisfactory.

CLAUSE - 31

Return of Surplus Material

Notwithstanding anything contained to the contrary in this contract, where any materials for the execution of the contract are procured with the assistance of Government either by issue from Government stocks or purchase made under orders or permits or licenses issued by Government the contractor shall hold the said materials economically and solely for the purpose of the contract and not dispose of them without the written permission of the Government and return, if required by the Engineer-in-Charge, all surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination for any reason whatsoever on being paid or credited such price as the Engineer-in-Charge shall determine having due regard to the condition of the materials. The price allowed to the contractor however shall not exceed the amount charged to him excluding the element of storage charges. The decision of the Engineer-in-Charge shall be final and conclusive. In the event of breach of the aforesaid condition the contractor shall in addition to throwing himself open to action for contravention of the term of the license or permit and/or for criminal breach of trust, be liable to Government for all moneys, advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach.

CLAUSE - 32

Hire of Plant & Machinery

- i) The contractor shall arrange at his own expense all tools, plant, machinery, and equipment (hereinafter referred to as T & P) required for execution of the work except for the Plant & Machinery listed in Schedule 'C' and stipulated for issue to the contractor. If the contractor requires any item of T & P on hire from the T & P available will, if such item is available, hire it to the contractor at rates to be agreed upon between him and the Engineer-in-Charge. In such a case all

the conditions hereunder for issue of T & P shall also be applicable to such T & P as is agreed to be issued.

ii) Plant and Machinery when supplied on hire charges in Schedule 'C' shall be made over and taken back at the departmental equipment yard/shed shown in Schedule 'C' and the contractor shall bear the cost of carriage from the place of issue to the site of work and back. The contractor shall be responsible to return the plant and machinery in the condition in which it was handed over to him, and he shall be responsible for all damage caused to the said plant and machinery at the site of work or elsewhere in operation and otherwise during transit including damage to or loss of plant and for all losses due to his failure to return the same soon after the completion of the work for which it was issued. The Divisional Engineer shall be the sole judge to determine the liability of the contractor and its extent in this regard and his decision shall be final and binding on the contractor.

iii) The plant and machinery as stipulated above will be issued as and when available and if required by the contractor. The contractor shall arrange his programme of work according to the availability of the plant and machinery and no claim, whatsoever, will be entertained from him for any delay in supply by the Department.

iv) The hire charges shall be recovered at the prescribed rates from and inclusive of the date the plant and machinery made over up to and inclusive of the date of the return in good order even though the same may not have been working for any cause except major breakdown due to no fault of the contractor or faulty use requiring more than three working days continuously (excluding intervening holidays and Sundays) for bringing the plant in order. The contractor shall immediately intimate in writing to the Engineer-in-Charge when any plant or machinery gets out of order requiring major repairs as aforesaid. The Engineer-in-Charge shall record the date and time of receipt of such intimation in the log sheet of the plant or machinery. Based on this if the breakdown occurs before lunch period or major breakdown will be computed considering half a day's breakdown on the day of complaint. If the breakdown occurs in the post lunch period of major breakdown will be computed starting from the next working day. In case of any dispute under this clause the decision of the Superintending Engineer shall be final and binding on the contractor.

v) The hire charges shown above are for each day of 8 hours (inclusive of the one-hour lunch break) or part thereof.

vi) Hire charges will include service of operating staff as required and also supply of lubricating oil and stores for cleaning purposes. Power fuel of approved type, firewood, kerosene oil etc. for running the plant and machinery and also the full time chowkidar for guarding the plant and

machinery against any loss or damage shall be arranged by the contractor who shall be fully responsible for the safeguard and security of plant and machinery. The contractor shall on or before the supply of plant and machinery sign an agreement indemnifying the Department against any loss or damage caused to the plant and machinery either during transit or at site of work.

vii) Ordinarily, no plant and machinery shall work for more than 8 hours a day inclusive of one hour lunch break. In case of an urgent work however, the Engineer-in-Charge may, at his discretion, allow the plant and machinery to be worked for more than normal period or 8 hours a day, in that case the hourly hire charges for overtime to charge (1/8th of the daily charges) subject to a minimum of half day's normal charges on any particular day. For working out hire charges for over time a period of half an hour and above will be charged as one hour and a period of less than half an hour will be ignored.

viii) The contractor shall release the plant and machinery every seventh day for periodical servicing and/or wash out which may take about three to four hours or more. Hire charges for full day shall be recovered from the contractor for the day of servicing/wash out irrespective of the period employed in servicing.

ix) The plant and machinery once issued to the contractor shall not be returned by him on account of lack of arrangements of labor and materials, etc. on his part, the same will be returned only when they are required for major repairs or when in the opinion of the Engineer-in-Charge the work or a portion of work for which the same was issued is completed.

x) Log Book for recording the hours of daily work for each of the plant and machinery supplied to the contractor will be maintained by the Department and will be countersigned by the contractor or his authorized agent daily. In case the contractor contests the correctness of the entries and/or fails to sign the Log Book the decision of the Engineer-in-Charge shall be final and binding on him. Hire charges will be calculated according to the entries in the Log Book and will be binding on the contractor. Recovery on account of hire charges for road – rollers shall be made for the minimum number of days works out on the assumption that a roller can consolidate per day and maximum quantity of materials or area surfacing as noted against each in the annexed statement (see attached annexure).

xi) In the case of concrete mixers, the contractors shall arrange to get the hopper cleaned and the drum washed at the close of the work each day or each occasion.

a) In case rollers for consolidation are employed by the contractor himself, log book for such rollers shall be maintained in the same manner as is done in case of departmental rollers, maximum

quantity of any item to be consolidated for each roller day shall also be same as in Annexure to Clause 34(x). For less use of rollers recovery for the less roller days shall be made at the stipulated issue rate.

xii) The contractor shall be responsible to return the plant and machinery in the condition in which it was handed over to him and he shall be responsible for all damage caused to the said plant and machinery at the site of work or elsewhere in operation or otherwise or during transit including damage to or loss of parts, and for all losses due to him failure to return the same soon after the completion of the work for which it was issued. The Divisional Engineer shall be the sole judge to determine the liability of the contractor and its extent in this regard and his decision shall be final and binding on the contractor.

xiii) The contractor will be exempted for levy of any hire charges for the number of days he is called upon in writing by the Engineer-in-Charge to suspend execution of the work provided Government plant and machinery in question have, in fact remained idle with the contractor because of the suspension.

xiv) In the event of the contractor not requiring any item of plant and machinery issued by Government though not stipulated for issue in Schedule 'C' any time after taking delivery at the place of issue, he may return it after two days written notice or at any time without notice if he agrees to pay hire charges for two additional days without in any way affecting the right of the Engineer-in-Charge to use the said plant and machinery during the said period of two days as he likes including hiring out to a third party.

CLAUSE - 33

Employment of Technical Staff and employees

Contractors Superintendence, Supervision, Technical Staff & Employees

i) The contractor shall provide all necessary superintendence during execution of the work and as along thereafter as may be necessary for proper fulfilling of the obligations under the contract.

The contractor along with bidding of the tender, intimate in writing to the Engineer-in-Charge the name, qualifications, experience, age, address, and other particulars along with certificates, of the technical representative to be in charge of the work. If there is any change then the new incumbents' qualifications and experience shall not be lower than specified in Schedule in I.T.B. (Annexure-2). The Engineer-in-Charge shall within 15 days of issue of letter of acceptance intimate in writing his approval or otherwise it is deemed to be approved. Any such approval may at any time be withdrawn

and in case of such withdrawal the contractor shall appoint another such representative according to the provisions of this clause. Decision of the tender accepting authority/Superintending Engineer shall be final and binding on the contractor in this respect. Technical staff shall be available at site within fifteen days of start of work.

If the contractor (or any partner in case of firm/company) himself has such qualifications, it will not be necessary for the said contractor to appoint such a principal technical representative but the contractor shall designate and appoint a responsible agent to represent him and to be present at the work whenever the contractor is not in a position to be so present. All the provisions applicable to the principal technical representative under the Clause will also be applicable in such a case to contractor or his responsible agent. The principal technical representative and/or the contractor or his responsible authorized agent shall be actually available at site at least two working days every week, these days shall be determined in advance and also during recording of measurement of works and whenever so required by the Engineer-in-Charge by a notice as aforesaid and shall also note down instructions conveyed by the Engineer-in-Charge or his designated representative in the site order book and in token of acceptance of measurements. There shall be no objection if the representative/agent looks after more than one work and not more than three works in the same station provided these details are disclosed to the Engineer-in-Charge and he shall be satisfied that the provisions and the purpose of the clause are fulfilled satisfactorily.

If the Engineer-in-Charge, whose decision in this respect is final and binding on the contractor, is convinced that no such technical representative or agent is effectively appointed or is effectively attending or fulfilling the provision of this clause, a recovery shall be effected from the contractor as specified in Schedule 'F' and the decision of the Engineer-in-Charge as recorded in the site order book and measurement recorded in Measurement Books shall be final and binding on the contractor. Further if the contractor fails to appoint a suitable technical representative or responsible agent and if such appointed persons are not effectively present or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the work until such date as a suitable agent is appointed and the contractor shall submit a certificate of employment of the technical representative/responsible agent along with every on account bill/fixed bill and shall produce evidence if at any time so required by the Engineer-in-Charge.

ii) The contractor shall provide and employ on the site only such technical assistants as are skilled and experienced in their respective fields and such foremen and supervisory staff as are competent to give proper supervision to the work. The contractor shall provide and employ skilled,

semiskilled and unskilled labour as is necessary for proper and timely execution of the work. The Engineer-in-Charge shall be at liberty to object to and require the contractor to remove from the works any person who in his opinion misconducts himself, or is incompetent or negligent in the performance of his duties of whose employment is otherwise considered by the Engineer-in-Charge to be undesirable. Such person shall not be employed again at works site without the written permission of the Engineer-in-Charge and the persons so removed shall be replaced as soon as possible by competent substitutes.

CLAUSE - 34

Levy/Taxes/Duties by Contractor

- i) GST or any other taxes, duties etc. on materials in respect of this contract shall be payable by the contractor according to law in effect.
- ii) The contractor shall deposit royalty and obtain necessary permit for supply of the red earth, moorum, sand, chips, bajri, stone, kankar and pea gravels etc. from local authorities.
- iii) If pursuant to or under any law, notification or order any royalty, cess of the hike becomes payable to the Government of India and does not at any time become payable by the contractor to the State Government / Local authorities in respect of any material used by the contractor in the works then in such a case, it shall be lawful to the Government of India and it will have the right and be entitled to recover the amount paid in the circumstances as aforesaid from the dues of the contractor.

CLAUSE - 35

Conditions for reimbursement of levy / taxes if levied after receipt of tenders

- i) All tendered rates shall be inclusive of all taxes/duties and levies payable under respective statutes. However, pursuant to the Constitution (46th Amendment) Act. 1982, if any further tax or levy is imposed by Statute, after the last stipulated date for the receipt of tender including extensions if any and the contractor thereupon necessarily and properly pays such taxes / levies the contractor shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of the Chief Engineer (whose decision shall be final and binding on the contractor) attributable to delay in execution of work within the control of the contractor.
- ii) The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly

authorized representative of the Government and/or the Engineer-in-Charge and further shall furnish such other information/document as the Engineer-in-Charge may require from time to time.

iii) The contractor shall, within a period of 30 days of the imposition of any such further tax or levy, pursuant to the Constitution (Forty Sixth Amendment) Act 1982, give a written notice thereof to the Engineer-in-Charge that the same is given pursuant to this condition, together with all necessary information relating thereto.

CLAUSE - 36

Termination of Contract in case of imprisonment of Contractor

If the contractor is imprisoned, becomes insolvent compound with his creditors, has a receiving order made against him or carries on business under a receiver for the benefit of the creditors or any of them, or being a partnership firm becomes dissolved, or being a company or corporations goes into liquidation or commences to be wound up no being a voluntary winding up for the purpose only of amalgamation or reconstitution the department shall be at liberty.

(a) To give such liquidator, receiver, or other person in whom the contract may become vested, the option of carrying out the contract or a portion there of to be determined by the department, subject to his providing an appropriate guarantee for the performance of such contractor.

(b) To terminate the contract, forthwith by notice in writing to the contractor, the liquidator, the receiver or person in whom the contract may become vested and take further action as provided in the relevant clauses of the contract.

CLAUSE - 37

Termination of Contract on death of Contractor

Without prejudice to any of the rights or remedies under this contract if the contractor dies, the Divisional Officer on behalf of the Governor of Bihar shall have the option of terminating the contract without compensation to the contractor after the affidavit of his/ their legal heir/heirs that they are not going to be in this profession in future.

CLAUSE - 38

If relation working in any work Deptt. then the Contractor not allowed to tender

The contractor shall not be permitted to tender for works in the Concerned Division (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 the Superintending Engineer and Assistant Engineer (both inclusive). He shall also intimate the names of persons who are working

with him in any capacity or are subsequently employed by him and who are near relatives to any Gazetted Officer in the Any Work & Deptt. or in the concerned department. Any breach of this condition by the contractors of this Department shall lead to blacklisting. If the contractor is registered in any other department, he shall be debarred from tendering in P.H.E.D. for any breach of this condition.

Note: By the term “near relatives” is meant wife, husband, parents and grandparents, children and grandchildren, brothers and sisters, uncles, aunts and cousins and their corresponding in law.

CLAUSE - 39

No -Gazetted –Engineer to work as Contractor within two years of retirement

No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering of Administrative duties in an Engineering Department of the Government of Bihar shall work as a Contractor or employees of a contractor for a period of two years after his retirement, from Government Service without the previous permission of State Government in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained said permission prior to engagement in the contractor's service, as the case may be.

CLAUSE - 40 (NOT APPLICABLE)

Return of material and recovery for excess material issued

i) After completion of the work and also at any intermediate stage in the event of non reconciliation of materials issued, consumed and in balance (see Clause 10) theoretical quantity of materials issued by the Government for use in the work shall be calculated on the basis and method given hereunder.

- a) Quantity of cement & bitumen shall be calculated on the basis of quantity of cement & bitumen required different items of work as shown in the Schedule of Rates mentioned in-Schedule ‘F’. In case any item is executed for which standard constants for the consumption of cement & bitumen are not available in the above-mentioned schedule/statement or cannot be derived from the same shall be calculated on the basis of standard formula to be laid down by the Engineer-in-Charge.
- b) Theoretical quantity of steel reinforcement of structural steel sections shall be taken as the quantity required as per design or as authorized by Engineer-in-Charge,

including authorized lappages, chairs etc., plus 3% wastage due to cutting into pieces, such theoretical quantity being determined and compared with the actual issues each diameter wise, section wise and category wise separately.

c) For any other material as per actual requirements.

ii) Over the theoretical quantities of materials so computed a variation shall be allowed as specified in Schedule 'F'. The difference in the net quantities of material actually issued to the contractor and the theoretical quantities including such authorized variation, if not returned by the contractor or if not fully reconciled to the satisfaction of the Engineer-in-Charge within fifteen days of the issue of written notice by the Engineer-in-Charge to this effect shall be recovered at the rates specified in Schedule 'F' without prejudice to the provision of the relevant conditions regarding return of materials governing the contract. Decision of Engineer-in-Charge in regard to theoretical quantities of materials, which should have been actually used as per the Annexure of the standard schedule of rates and recovery at rates specified in Schedule 'F', shall be final & binding on the contractor. For non scheduled items, the decision of the Superintending Engineer regarding theoretical quantities of materials, which should have been actually used, shall be final and binding on the contractor.

viii) The said action under this clause is without prejudice to the right of the Government to take action against the contractor under any other conditions of contract for not doing the work according to the prescribed specifications.

Clause - 41

Release of Security Deposit

On completion of the whole of the construction work, half of the total amount of security or additional performance security if any shall be repaid to the contractor after six months of completion of construction. However, the balance half of the total amount of security or additional performance security will be returned after completion of defect liability period and after the Engineer has certified that all defects notified by him to the contractor before the end of this period have been corrected and also after recovery of any dues.

Clause - 42

Responsibilities of Technical Staff and Employees

Technical officers / staff deployed by the Contractor at any construction site will also be responsible for inferior quality/poor performance of any work and his name will be circulated to all

works division of the P.H.E.D. to debar from any other site, if his name is being proposed by other contractor.

Clause - 43

Contractor's Risks

All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

Clause - 44

Insurance

The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles stated in the Contract Data for the following events which are due to the Contractor's risks:

- (a) loss of or damage to the Works, Plant and Materials;
- (b) loss of or damage to Equipment;
- (c) loss of or damage of property (except the Works, Plant, Materials and Equipment) in connection with the Contract; and
- (d) personal injury or death.

Policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the start date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

Alteration to the terms of an insurance shall not be made without the approval of the Engineer.

Both parties shall comply with any conditions of the insurance policies.

CLAUSE - 45

Cash flow Estimate to be submitted

The Contractor shall, within the time stated in special Conditions of contract after the date of the Letter of Acceptance, provide to the Engineer for his information a detailed cash flow estimate, in quarterly periods, of all payments to which the Contractor will be entitled under the Contract and the Contractor shall subsequently supply revised cash flow estimates at quarterly intervals, if required to do so by the Engineer-in-Charge.

CLAUSE - 46

Safety, Security, and protection of the Environment

The Contractor shall, throughout the execution and completion of the Works and the remedying of any defects therein:

- (a) have full regard for the safety of all persons entitled to be upon the Site and keep the Site (so far as the same is under his control) and the Works (so far as the same are not completed or occupied by the Employer) in an orderly state appropriate to the avoidance of danger to such persons.
- (b) Provide and maintain at his own cost all lights, guards, fencing, warning signs and watchmen and where necessary or required by the Engineer or by any duly constituted authority, for the protection of the Works or for the safety and convenience of the public or others, and
- (c) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.

CLAUSE - 47

Cost of Samples

All samples shall be supplied by the Contractor at his own cost if the supply thereof is clearly intended by or provided for in the Contract.

CLAUSE - 48

Cost of Tests

The cost of making any test shall be borne by the Contractor if such test is :

- (a) Clearly intended by or provided for in the Contract, or

(b) particularized in the Contract (in case only of a test under load or of a test to ascertain whether the design of any finished or partially finished work is appropriate for the purposes which it was intended to fulfill) in sufficient detail to enable the Contractor to price or allow for the same in his Tender.

CLAUSE - 49

Cost of Tests not provided for

If any test required by the Engineer which is

(a) Not so intended by or provided for,

(b) (in the cases above mentioned) not so particularized, or

(c) (though so intended or provided for) required by the Engineer to be carried out at any place other than the Site or the place of manufacture, fabrication or preparation of the materials or Plant tested shows the materials, Plant, or workmanship not to be in accordance with the provision of the Contract to the satisfaction of the Engineer, then the cost of such test shall be borne by the Contractor, but in any other case also the contractor will bear the cost.

CLAUSE - 50

Commencement of works

The contractor shall commence the Works as soon as is reasonably possible after the receipt by him of a notice to this effect from the Engineer, which notice shall be issued within the time stated in the appendix to Tender after the date of the Letter of Acceptance. Thereafter, the Contractor shall proceed with the Works with due expedition and without delay.

CLAUSE - 51

Substantial Completion of Parts

If any part of the Permanent Works has been substantially completed and has satisfactorily passed any Test on Completion prescribed by the Contract, the Engineer may issue a Taking- Over Certificate in respect of that part of the Permanent Works before completion of the Works and, upon the issue of such certificate, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work in that part of the Permanent Works during the Defects Liability Period.

CLAUSE - 52

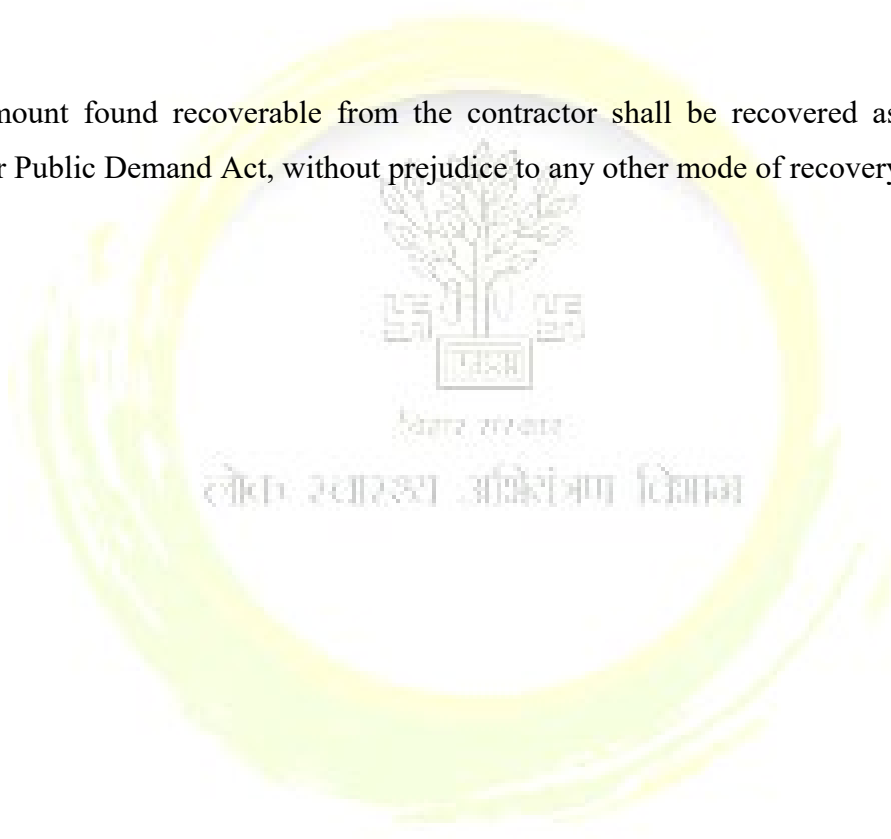
Force Majeure

Neither party shall be liable to the other for any loss or damage occasioned by or arising out of acts of GOD such as Unprecedented flood, Volcanic eruption, Earthquake or other convulsion of nature and other acts such as general/partial strikes by a section of government employees/invasion, the act of foreign countries/hostilities or war like operations before or after declaration of war, rebellion/military or usurped power which prevent performance of the contract and which could not have been foreseen or avoided by a prudent person.

CLAUSE - 53

Recovery

Any amount found recoverable from the contractor shall be recovered as public demand under the Bihar Public Demand Act, without prejudice to any other mode of recovery.



SECTION 4

CONTRACT DATA

(PERFORMA OF SCHEDULES)



PERFORMA OF SCHEDULES

(Operative schedules to be supplied separately to each intending bidder)

SCHEDULE 'A'

Schedule of Quantities

S.I No	Description of item (with brief specification and reference to book of specification	BILL OF QUANTITY				Amount
		Quantity	Unit	Rate		
				In figure	In words	
1	2	3	4	5	6	7
	Attached as Bill of Quantity					
	Section-7					
	Bill of Quantity should be downloaded by bidder from the website https://eproc2.bihar.gov.in/					

Schedule B

Schedule of materials to be issued to the contractor NIL

Schedule C

Tools and plants to be hired to the contractor NIL

Schedule D

Extra schedule for specific requirement /document for the work , If any NIL

Schedule E

Schedule of component of Cement, Steel, other Materials, labor etc. for price escalation

Not Applicable

Clause 10cc

Not Applicable

Schedule F

Reference to general condition of contract

Name of work	:	As per NIT
Estimated cost of work	:	1030.25 lakh
i) Earnest money	:	20.31 lakh
ii) Performance guarantee	:	As per norms applicable of Govt. of Bihar.
iii) Security Deposit	:	8% of tendered value
iv) Defect Liability Period	:	The defect liability period will be 60 (Sixty) months after successful completion of Trial Run or 61(sixty one) months after completion of DB whichever is more. The Trial run period will be of 1(one) month after completion of DB . (according to Trial Run SOP prescribed)
v) Rate of Interest	:	As per applicable by bank.

GENERAL RULES AND DIRECTIONS

Office inviting tender
Executive Engineer, P.H. Mechanical
Division, Patna
Maximum percentage for quantity of
Items of work to be executed beyond
Which rates are to be determined in
Accordance with clause 12.2 & 12.3.

Definitions:

Engineer-in-Charge	Executive Engineer P. H. Mechanical Division, Patna
Percentage on cost of materials and labor to cover all overheads and profits	15% (refers to TA of this work)
Standard Schedule of Rates	Percentage rates
Department & Employer	PHED, BIHAR Executive Engineer P. H. Mechanical Division, Patna

Clause 1

- i) Time allowed for submission of
Performance Guarantee from the date
of issue of letter of acceptance in days 07 days

Clause 2

Authority for fixing compensation Superintending Engineer
under clause 2.

Clause 2A

Whether Clause 2A shall be applicable No

Clause 5

Number of days from the date of issue of notice to start. 07 days

Mile stone(s) as table given below

As per clause of contract para 5.1, the firm may submit the time and progress chart as indicated below in “A” otherwise milestone shown in “B” will be treated as applicable

“A”

Sl. No.	Description of Milestone (Physical)	Time allowed in days (from date of start)	Amount to be with-held in case of non achievement of milestone
1.			
2.			
3.			
4.			

Or “B”

Sl. No.	Financial Progress	Time allowed (from date of start)	Amount to be with-held in case of non achievement of milestone
1.	1/8 TH (of whole work)	1/4 th of whole work	In the event of not achieving the necessary progress as assessed from the running payments 1% of the tendered value of work will be withheld for failure of each milestone.
2.	3/8 TH (of whole work)	1/2 th of whole work	
3.	3/4 TH (of whole work)	3/4 th of whole work	
4.	Full	Full	

Time allowed for execution of work

65 months (04DB+01TR+60CM)

Authority to give fair and reasonable

as per PWD code or Govt. Circular

Extension of time for completion of work.

Clause - 7 Gross work to be done together with net payment/ adjustment of advances for material collected, if any, since the last such payment for being eligible to Interim payment

NOT APPLICABLE

Clause - 10CC Clause 10CC to be applicable in contracts with Stipulated period of completion exceeding the Period shown in next column

NOT APPLICABLE

Clause - 11 Specifications to be followed for Execution of work

Tender document and as
Per PWD, PHED and GoB.

Clause - 12 Deviation, variation
Extent and pricing.

As per P.W.D. codes

Clause - 16 Competent Authority for
Deciding reduced rates

As per P.W.D. Codes
And other govt circulars.

- All Documents concerning with Works forms, part of the contract from tender up to defect liability period
- The law, which applies to the contract is The Law of Union of India
- The court of jurisdiction Patna
- The Language of contract document English
- The limit of sub-contracting As per WRD letter no. 536 dt. 13.06.2013 & 686 dt. 19.08.2014 (attached)
 - The Currency of the Contract is Indian Rupees

SECTION-5

SPECIAL CONDITION OF CONTRACT



SECTION-5

SPECIAL CONDITIONS OF CONTRACT

SCOPE OF WORK:-

Name of Work: - Fabrication, supply, Installation, Testing and Commissioning of 130 nos. of 3600 liters (800 gallon) capacity SS304 grade stainless steel sheet body water tanker mounted on two wheel steel chasis trolley with IOT controller for alternate arrangements of additional water supply in different districts of Bihar state under PHED for the year 2025-2026 under PH Mech. Division, Patna on turn-key basis with 01 month Trial Run Period and Comprehensive Maintenance of 60 months. .

1. **PAYMENT OF WORKS:** In this regards, it is to intimate that total payment will be done prospectively in three parts of the work. The first 70% payment will be done against the fabrication of water tankers with IOT based system (called as DB part of the work), the second 10% part of the payment will be done against successful completion of TRIAL RUN PERIOD and the rest 20% payment will be done against comprehensive maintenance of water tankers with IOT system for a period of 60 (Sixty) calendar months as per following schedule : -

- (i) For the first 12 Months = @2% of the agreement value shall be paid to the respective Contractor/Agency
- (ii) For the next 12 Months = @3% of the agreement value shall be paid to the respective Contractor/Agency
- (iii) For the next 12 Months = @4% of the agreement value shall be paid to the respective Contractor/Agency
- (iv) For the next 12 Months = @5% of the agreement value shall be paid to the respective Contractor/Agency
- (v) For the next 12 Months = @6% of the agreement value shall be paid to the respective Contractor/Agency

DB part payment of the work : - This will be called first section of the payment. In this part 70% Payment of fabrication of water tanker (with IOT based system) i.e. DB parts of work will be done in accordance with the following formula given below:-

Formula “A” -

$$A = N \times E \times 70\%$$

Where A = Amount to be paid in running bill against N nos of completed tankers as per approved estimated drawings
 N = Total nos of tankers fabricated with IOT based system as per Agreement
 E = Approved rate per Unit water tanker body with IOT based system.

TRIAL RUN payment of the Work: - In this section 10% payment of the agreement value will be done against successful completion of Trial Run period of the said work.

This TRIAL RUN PERIOD is broadly divided in two different cases as described below: -

Condition (i)

When the tankers has to be supplied in P. H. Mech. Division, Patna

After completion of fabrication of all the 130 Nos. of water tankers with IOT based system the Contractor/Agency must develop an IOT monitor based review system (at most 03 nos of dashboard system) at his own cost and risk under the P.H. Mech. Division, Patna to monitor 24*7 real time position of fabricated water tankers. After this all fabricated tankers with IOT will undergo for a Trial Run operation as per prescribed SOP mentioned below as directed by the Engineer – In – Charge/Competent authority. A TRIAL RUN CERTIFICATE will be issued by the competent authority after successful completion of the prescribed TRIAL RUN PERIOD (Standard format given in the BID DOCUMENT as ANNEXURE). The 10% of the work agreement value will be paid after the successful completion of TRIAL RUN OPERATION as per prescribed SOP. The Standard Operating Procedure (SOP) conditions for the TRIAL RUN PERIOD are as per follows:

- (i) The commencement of the TRIAL RUN PERIOD shall begin after complete and satisfactorily fabrication of 130th tanker with IOT based system (referred as last tanker of the contract) as per the date decided by Engineer – In – Charge.
- (ii) The contractor/agency has to set up charging points/ sockets having minimum 24 nos. of ports for charging purpose of IOT system which may vary as per direction of Engineer in charge etc. The work shall be completed by the contractor/agency at his own cost and risk.
- (iii) All types of necessary arrangements like internet, broadband services, sims, data storage facility, etc. required for the work shall be arranged by the contractor at his own cost and risk as per direction of Engineer in charge.
- (iv) As per the directions of the Engineer-in-Charge, each fabricated water tanker must cover a minimum running distance of 50 km with its full load capacity.

- (v) For each fabricated water tanker, data related to the tanker's mobilization and the Quality and quantity stored in it must be presented with evidence in the IOT Monitoring System installed in the control room before the Engineer-in-Charge/Competent authority, through the IOT devices installed as per the technical specifications mentioned in the estimate.
- (vi) The total time period for the above mentioned TRIAL RUN PERIOD shall be 01 (One) months within which the contractor is bound to complete all its running parameters satisfactorily as per direction given by Engineer – In – Charge.
- (vii) All types of expenditures such as hiring of tractors, fuels, lubricants, etc incurred during whole of TRIAL RUN PERIOD will be borne by Contractor/Agency itself at his own cost and risk.

Condition (ii) –

When all the tankers has to be supplied/distributed/handed over in various P. H. Divisions, Bihar subjected to the departmental approval.

After completion of fabrication of all the 130 Nos. of water tankers with IOT based system, it will be the responsibility of contractor to transport all the aforesaid water tankers to respective P H Divisions Bihar at his own cost and risk as per direction of Engineer In Charge. The Contractor/Agency must develop IOT monitor based review system (at most 16 nos. of dashboard systems) at his own cost and risk in the respective various P. H. Divisions, Bihar along with P. H. Mech. Division, Patna to monitor 24*7 real time position of fabricated water tankers. After handing over all these fabricated water tankers with IOT will undergo for a Trial Run operation as per prescribed SOP mentioned below as directed by the Concerned Executive Engineer, P. H. Divisions, Bihar. A TRIAL RUN CERTIFICATE will be issued by the concerned Executive Engineer, P H Division, Bihar after successful completion of the prescribed TRIAL RUN PERIOD (Standard format given in the BID DOCUMENT as ANNEXURE). The 10% of the work agreement value will be paid after the successful completion of TRIAL RUN OPERATION as per prescribed SOP.

The Standard Operating Procedure (SOP) conditions for the TRIAL RUN PERIOD are as per follows:

- (i) The commencement of the TRIAL RUN PERIOD shall begin after complete and satisfactorily fabrication and handing over of 130th tanker (referred as last tanker of the contract) to the respective P. H. Division, Bihar. The TRIAL RUN OPERATION will be completed by concerned Executive Engineer, P. H. Divisions, Bihar after taking over

of aforesaid water tankers with IOT based system as per the date **intimated by the Executive Engineer P H Mech. Division, Patna.**

- (ii) The contractor/agency has to set up charging ports/sockets having 02 nos. of ports in respective P. H. Division, Bihar for charging purpose of IOT system etc. required for the work shall be arranged by the contractor at his own cost and risk.
- (iii) All types of necessary arrangements like internet, broadband services, sim, data storage, etc. required for the work shall be arranged by the contractor at his own cost and risk.
- (iv) As per the directions of the concerned Executive Engineer, P. H. Divisions, Bihar, each fabricated water tanker must cover a minimum running distance of 50 km with its full load capacity.
- (v) For each fabricated water tanker, data related to the tanker's mobilization and the water quality and quantity stored in it must be presented with evidences in the IOT Monitoring System installed in the office control room of related Executive Engineer, P. H. Divisions, Bihar before the concerned Executive Engineer, P. H. Division, Bihar, through the IOT devices installed as per the technical specifications mentioned in the estimate .
- (vi) The total time period for the above mentioned TRIAL RUN PERIOD shall be 01 (One) months within which the contractor is bound to complete all its running parameters satisfactorily as per direction given by concerned Executive Engineer, P. H. Division, Bihar.
- (vii) All types of expenditures incurred during whole of TRIAL RUN PERIOD will be borne by Contractor/Agency itself at his own cost and risk.

Payments against Comprehensive maintenance of the work: - In this section the whole of the 130 Nos. of water tankers with installed IOT based system will undergo for comprehensive maintainence for a period of 60 calendar months after successful completion of trial run period of 130th water tanker. During this the contractor has to establish a centralize information centre via which the contractor has to receive all informations regarding repair and maintenance work related with the said tankers. The respective contractor/agency has to maintain sufficient and efficient manpower with the proper availability of inventory of spare parts to meet out maintenance activity related with the aforesaid water tankers.

2. DEWATERING:

Dewatering has to be done as per requirement at work site station/workshop for maintaining proper hygienic condition.

3. PAYMENT OF ROYALTIES:

Royalty will be deducted as per latest circular from Mining Dept./WRD, Govt. of Bihar,

4. EVENTS REGARDING COMPLETION OF WORK

The tender specification has been drawn to facilitate the tenderers to quote firm rate (on percentage basis) for full completion of the work and that the rates quoted must contain the costs of all the events related to complete work direct as well as indirect including all incidental events not shown or specified but reasonably implied or necessary for the completion of the work. It is understood that if the Bidder has any doubt, he shall get it clarified before submitting his tender. Therefore, there should be no scope for any doubt or ambiguity regarding non-inclusion of any event in the completion of the aforesaid work in the rate quoted by the contractor. No claim, whatsoever, will be entertained due to non-inclusion of any such event necessary for the completion of this work.

5. WORKSHOP ESTABLISHMENT, CAMP SITE AND REGULATIONS

The type of work and the plans and specifications for the building to be erected in the contractor's camp nearby the worksite shall be subjected to the approval of the Engineer-in-charge. In this connection, it is to bring in kind notice that the required fabrication work with the installation of IOT based monitoring system for the aforesaid work must be carried out in the work site station / workshop established as per the standard norms of the SBD in Urban area or around its periphery at Patna District only as per the expertise of Contractor/Agency whose inspection could be carried on regular basis by Engineer – In – Charge. So that frequent supervision regarding quality of the work must be carried out in a regular, routine and robust way. All the expenditures in this regard shall be borne by the Contractor / agency itself at his own cost and risk.

The contractor shall provide, maintain and operate under competent direction, such camps and facilities convenient to the work as necessary for the housing, feeding and accommodation of their employees at his own cost. The location, construction and maintenance of such camps shall be subject to the approval and guidance by the Engineer-in-charge but the department shall not bear any cost whatsoever under any circumstances.

Proper and adequate sanitation and water supply arrangement shall have to be made by the contractor himself at his own cost. It will also be the responsibility of the contractor to maintain properly the drainage in their camp in order to prevent unhygienic condition.

The contractors shall be responsible for maintaining good order in their camps and at worksites and for these purposes he shall employ such officers, watchmen, or other persons as may be required. All regulations shall be subject to the approval of the Engineer-in-charge.

Contractor will have to make his own arrangement for land for labour sheds, stack yards, store, godowns materials, P&M etc. near work site at his own cost.

6. QUALITY CONTROL TESTING FACILITY

6.1 All materials to be used in work relevant to IS code Specifications or such recognized specifications acceptable to the Engineer-in-charge or in the absence of such authorized specifications, such requirements, tests and analysis as may be specified by the Engineer-in-charge shall have to be carried out by departmental officers while the labour for conducting the same & collecting the samples shall be provided by the contractor free of cost at site and field laboratory.

6.2 The contractor shall at his own risk and cost make all arrangements and provide for all such facilities as the Engineer-in-charge directs for collecting, preparing and forwarding required number of samples for test and analysis at such times and at such places as may be directed by the Engineer-in-charge. No extra payment will be made on this account to the contractor.

6.3 The contractor shall, if and when required, submit samples of materials to be tested or analyzed and if so directed shall not make use of or consume in the work any materials represented by the samples until the required tests or analysis have been carried out and the materials accepted by the Engineer-in-charge. The contractor shall not be entitled for any claim whatsoever on account of stoppage of work to facilitate the required tests.

6.4 The JE/AE/EE may inspect the Contractor's progressive work frequently and other higher officers as per the need time to time under provisions via the departmental letter no.- 121 dt 27.01.2026 and notify the contractor/agency of any defect found during the process of fabrication for rectification. Such type of inspection shall not affect the contractor's/agency's responsibility of timely and qualitative completion of work. The competent authority may instruct the contractor/agency to uncover and test any work that might have a defect. Every time the notice of defect/defects will be given by competent authority and the contractor/agency should have to correct the notified defect/defects within the time specified by competent authority. The contractor will not be entitled for any claim or extension of time on this account.

6.5 The Contractor shall be responsible for the quality assurance. All necessary arrangements regarding quality control/tests like concerned labours, materials, equipment's, laboratories etc. will be arranged by Contractor on his own cost.

6.6 The Department, will also conduct various quality-tests regarding water stored in fabricated water tanker randomly in laboratory of Govt. of Bihar/PHED or in any other standard laboratory (NABL accredited) as per direction of competent authority.

6.7 Third Party Inspection: - The quality of all materials used for the fabrication work of water tanker must be inspected, tested and certified by IIT / NIT Patna/ CSIR /NABL accredited labs before fabrication/construction of water tankers. The sample selection of materials for inspection and testing will be on random basis by competent authority from every lot of materials that has been brought by contractor/agency during various stage of fabrication of water tankers. After proper vetting of sample sent by competent authority at the respective laboratory the fabrication work will start as per direction of Engineer – in – Charge.

The IOT based monitoring system must be checked randomly and verified properly from IIT/NIT Patna/CSIR/NABL accredited labs as per the technical specifications of the contract and a certificate regarding successfully installation and functioning must be obtained by the contractor/agency in this regard which will be produced by the contractor/agency to the competent authority. It is worth important to mention that all the expenditures in this regard shall be borne by the Contractor/Agency itself.

7. DISCREPANCIES AND ADJUSTMENT OF ERRORS

7.1The contract drawings read together with the contract specifications are intended to show and explain the manner of executing the work and to indicate the type and class of materials to be used.

7.2The contractor shall execute the whole and every part of the work in accordance with the drawings and specifications which form part of the contract and in accordance with such further drawings, details and instructions as may, from time to time, be given by the Engineer-in-charge.

7.3 It shall be the responsibility of the contractor to promptly bring to the notice of the Engineer-in-charge any error or discrepancy in the drawings, specifications, and contract documents and obtain his written order thereon. In case of any discrepancy between the description of items in the schedule of quantities and the specifications, the later shall prevail, In case any feature of the work is not fully described and set forth in the drawings and specification the contractor shall forthwith apply to the Engineer-in-charge for further instructions, drawings or specifications. The decision of the Engineer- in- charge regarding the true intent and meaning of the drawings and specifications shall be final and binding.

7.4An error in description, quantity or price in schedule of quantities and price or any omission, therefore shall not vitiate the contract to relieve the contractor from the execution of the whole or any part of the works comprised therein according to drawing and specifications or from any of his obligations under the contract.

7.5 No extra payment shall be admissible to contractor, consequent upon any alleged misunderstanding or miscalculation arising out of any other mistake or factor, not specifically provided for in this contract.

7.6 Detailed drawing shall be followed and figured dimension should be followed in preference to scaled dimension. However if any dimension indicated on a drawing differ from that obtained by scaling the drawings, the contractor shall bring the discrepancy to the notice of the Engineer-in-charge, whose decision in the matter shall be final and binding.

8. DEFECT LIABILITY PERIOD

8.1 Notwithstanding any certificate of acceptance issued by the Engineer-in-charge to the contractor for this work, the contractor shall be bound up to defect liability period. The defect liability period will be for a period of 60 months(sixty) after successful completion of trial run or 61(sixty one) months after completion of fabrication of whole work whichever is more. The comprehensive maintenance period will be for a period of 60 (Sixty) months after the date of successful completion of Trial run period of 130th tanker confirming with Trial run certificate under this contract to carry out any repair of damages therein. The contractor shall be bound also to carry out any improvement or adjustment to remove any defect in the work. Such repairs and maintenance shall be carried out by the contractor without any charge to the movement as directed by the Engineer-in-charge. The decision of the Engineer-in-charge, about the defects or damages to be made good shall be final and binding on the contractor.

Activities to be performed during Comprehensive Maintenance: -

- During this contract the contractor/agency has to establish a centralize information / service centre at Patna via which the contractor has to receive all informations regarding repair and maintenance work related with the said tankers with IOT based systems.
- The contractor has to furnish all its information regarding its manpower services, etc for providing services during maintenance period with proper documentary evidences/affidavit.
- The concerned contractor/agency shall maintain adequate and skilled manpower (minimum 1 mechanic, 1 welder, 1 IoT technician, 1 helper) and adequate availability of spare parts (at least 10% of the total number of components used in the manufacture of the 130 nos. of water tankers mentioned above) to carry out urgent maintenance activities related to the said water tankers as directed by the competent authority, at their own cost and risk. The contractor/agency shall have to fulfil all types of maintenance activities of all the tankers as per the requirement at their own cost to carry out the maintenance activities of the tankers.
- The contractor/agency has to release a 24*7 active Toll – free helpline number for attending its services regarding repair and maintenances for aforesaid tankers with IOT based systems.

- It will be mandatory to keep all types of online data related to tanker mobilization such as water quality (PH,TDS, Temp., battery status etc) and GPS location during the whole course of defect liability period.
- After receipt of complaints the contractor/agency will be bound to resolve the complaints as per details mentioned below: -
 - (a) For minor repairing of works - 24 hours.
 - (b) For major types of repairing of works – 48 hours
 - (c) **Penalty Provisions :-** It is worth important to mention that failing of above, the contractor/agency will be penalized @Rs. - 500/day (for minor repairing of works) @Rs. - 1000/day (for major repairing of works) until the complaint resolves.
- It will be compulsion for the respective Contractor/ Agency to also follow preventive maintenance apart from other type of maintenance during its Comprehensive Maintenance period (i.e 60 months) as per schedule given below :-

(A) Preventive Maintenance Chart

Frequency	Component	Action to be Taken
Weekly	IOT System & Battery	Check data synchronization on the IOT dashboard and verify battery voltage (100 AH).
Monthly	Tyres & Wheels	Check tyre pressure (7.50-16) and ensure all nuts and bolts are tightened.
	Solenoid Valve	Test the automatic water cut-off and ensure smooth operation of the valve.
Quarterly	Sensor Calibration	Check the accuracy of the flow sensor to ensure precise water accounting.
	Tank Cleaning	Open the drain plug (50mm) to clean out any silt or dirt accumulated inside the tank.
	Lubrication	Apply grease to the axle, hub, and moving parts via grease nipples.
	Painting &	Painting for slogan writing and full body polishing.

Yearly	Polishing	
	Battery Health Check	Measure battery backup capacity; replace the battery if capacity drops below 40%.
	Leakage Check	Inspect SS304 tank joints and outlet valves for any leaks
	Alignment	Wheel alignment of tankers.

(B) Important Instructions:

- **Logbook:** Maintenance log book must be generated.
- **Software Updates:** It is mandatory to update the IOT controller's firmware as per requirement.
- **Certification:** Obtaining a '**Satisfaction Certificate**' (format attached) from the competent authority of the PHED divisions after each Quarterly maintenance is required for payment processing during comprehensive maintenance period.

8.2 In case the contractor fails to make good the defects, the Engineer-in-charge may employ other person to make good such defects, and all expenses consequent thereof and incidental cost shall be borne by the contractor/ may be deducted from various running bills of the contractor.

8.3 After the end of maintenance period of 60 months all the water tankers must be in good running condition (physically and technically) at the end of agreement.

9. INSTRUCTIONS & NOTICES

9.1 First of all the contractor /agency must have to ensure fabrication of single model tanker with IOT based system after award of contract duly certified by all types of tests/inspection mentioned in the bid document before initiation of mass fabrication of other tankers. The further mass fabrication from 2nd number of tanker will start after the approval of competent authority/Engineer in charge.

9.2 All Instructions, notices and communications shall be deemed to have been duly received by the contractor if delivered to the contractor or his authorized agent or left at, or posted at the address given by the contractor or his authorized agent, and they shall be deemed to have been served, in the case of service by post, on the date when the same should have reached such address in ordinary course of transmission by post and in other cases, on the day on which the same were so delivered or left.

9.3 The contractor shall, when he is not personally present at the site of the work, invariably place and keep at site a qualified agent duly authorized to act on his behalf and to receive on his behalf all orders and instructions from the Engineer-in-charge in relation to such work, including all orders by the Chief Engineer, Superintending Engineer, Executive Engineer or any other authorized officer in writing during the inspection of work. All such orders and instructions given to, and all acts done by such agents or the contractor shall be binding on the contractor, as if such orders and instructions were given to him or such acts had been done by him and him alone.

9.4 The Engineer-in-Charge will be free to use the tankers made against the DB payment in the form of running bills for the fabricated tankers in case of emergency (such as extreme heat, drought, flood, etc.) before trial run. In this context, the contractor will be responsible for rectifying any technical fault in the tankers found before trial run. Despite the above provision, the contractor will not be free from the obligation of conducting trial runs of all the tankers.

9.5 Except in the case of emergencies (road accidents, storms, theft from custody, extraordinary events, or other emergencies), the contractor will undertake the repair, maintenance, and timely preventive maintenance of all tankers. The contractor will not be entitled to any additional claim for this work.

9.6 The custodian of the such fabricated water tankers with IOT during operation work will be P H Mechanical Division ,Patna. And in case the aforesaid fabricated water tankers with IOT will be handed over to different P H Divisions, Bihar the respective Executive Engineer P H Divisions, Bihar will be the final custodian.

10. LAY OUT

10.1 The Contractor shall be responsible for fixing Sign-Boards in good conditions of suitable prominent places of his work site showing Name of work, Name of Contractor, quantity of work, amount of work etc. as per direction of Engineer in charge for which no extra payment will be done. These should be maintained in good condition till completion of the work at contractor's cost.

10.2 The contractor shall be responsible for the correct layout of all works at his own cost. The contractor shall execute the work true to alignments, grades, levels as shown in the drawings and as directed by the Engineer-in-charge and shall check these alignments, grades, and levels at frequent intervals. The contractor shall provide free of cost all facilities, like labours, and instruments and shall always co-operate with the departmental authorities to check all

alignments, grades, levels and dimensions. Such checking shall not absolve the contractor of his own responsibility of maintaining the accuracy of the work under the contract.

11 SETTING OUT WORK

The contractor shall arrange without any additional charge, requisite number of persons with means and materials necessary for the purpose of setting out the works and counting, weighing and assisting in the measurement or examination at any from time to time of the work or materials for the purpose of checking by the Engineer-in-charge or his representative. Failure to do so, the same may be provided by the Engineer-in-charge at expenses of the contractor and the expenses may be deducted from any money due to the contractor under the contract.

12 SITE ORDER BOOK

12.1 Site order book with machine numbered pages bearing the certificates of the Executive Engineer for containing so many pages shall be maintained by the contractor at the work site and it will have to be produced before the Engineer-in-charge or other inspecting officers if they so desire, for noting down any observation/instruction consuming the work.

This shall be the property of the department and the contractor shall deposit the same with the Engineer-in-charge after completion of the work before the final measurement.

12.2 The Engineer-in-charge or the representative authorized by him shall communicate or confirm his instructions to the contractor in respect of the execution of the work in the site order book and the contractor or his authorized representative shall confirm receipt of such instructions by the relevant entries in this book. If required by the contractor he shall be furnished with a certified true copy of such instruction. Only the certified copies under the signature of the Engineer-in-charge shall be sent to the competent authority for his approval.

12.3 The contractor or their authorized agents shall have no right to write anything in the site order book.

12.4 The site order books shall be maintained in the following form:

FORM OF SITE ORDER BOOK

Name of work –

Date or period of completion –

S.I No.	Date	Order or orders of the inspecting officers, Engineer- in charge to the contractor (with) dated signature	Action taken over the order or order and by whom taken (With) dated signature)	Acknowledgement or contractor	Remarks
1	2	3	4	5	6

12.5 The order or instruction noted in the site order book shall be taken into consideration at the time of final measurement and making final payments to the contractor.

13 OVER AND UNDER PAYMENT

- (i) Whenever any claim whatsoever for the payment of a sum of money to the Department arises out of or under this contract against the contractor the same may be deducted by the Department from any sum then due or which at any time thereafter becomes due to the contractor under this contract and failing that under any other contract in this department under or other department or from his security deposit, or he shall pay the claim on demand.
- (ii) The department reserves the right to carry out post payment audit and technical examination of the final bill including all supporting vouchers, abstracts etc. The Department further reserves the right of recovery of any over payment from the contractor when detected.
- (iii) If as a result of such audit and technical examination, an over payment is discovered in respect of any work done by the contractor or alleged to have been done by him under the contract, it shall be recovered by the department from the contractor by any or all of the methods described above and if any under payment is discovered, the amount shall be duly paid to the contractor by the department.

14 MATERIALS

- 14.1 Any materials brought to site shall not be removed from work site without the written permission of the Engineer-in-charge.
- 14.2 It shall be clearly understood that the rates quoted by the Bidder shall include all losses, wastages and wash away of materials, equipment tools, and plants etc. either due to rains or storms or floods or earthquakes in the normal course of works or other causes whatsoever.
- 14.3 The contractor shall provide suitable storage arrangement for sheet piles and other materials to the satisfaction of the Engineer-in-charge who shall have the authority at all times to inspect the storage arrangements and the contractor shall provide all facilities for the inspection and checking of materials. The contractor shall at all times maintain proper record showing the details of every indent, receipt and utilization of materials and these shall remain open all times for inspection by the Engineer-in-charge or his authorized representative. Arrangements for storage shall be such as to ensure that the quality of materials does not deteriorate in any manner whatsoever at the time of the utilization of materials. Supply of SS304 sheets of specified Indian Standard Brand & quality, will be done by contractor after purchasing it from stockiest authorized by the manufacturer. Supply of steel of specified Indian standard Brand & Quality will be done by contractor after purchasing it from stockyards of Re-rolling company / steel manufacturing company approved by Indian Standard Institution.
- 14.4 Materials shall be stored by the contractor only at places approved by the Engineer-in-charge. The storage and safe custody of the materials for the work shall be the responsibility of the contractor and the Department shall entertain no claim or compensation.

15. MATTERS RELATED TO CONTRACT TO BE TREATED AS CONFIDENTIAL

The contractor shall consider all documents, correspondences, decisions and orders concerning the contract as confidential and/or restricted in nature and he shall not divulge or allow access to them by any unauthorized person. Any violation of the security of these confidential and restricted documents will attract penal and legal actions against the contractor in accordance with the existing law(s).

16. MEDICAL CARE

Providing medical care to all the employees, authorities and workmen is the sole responsibility of the contractor himself. The department shall not provide any medical facility for the treatment of the contractors or their employees. In nearby hospitals, medical facilities are available. The contractor shall therefore make arrangement for First-Aid at site of work as well as for the emergency medical treatment in any approved permanent hospital for his personnel, authority and worker injured during the execution of the work entirely at his own cost. All cases of

accident, injury etc. to the contractor's personnel shall be immediately brought to the notice of the concerned authorities by submitting the full report of the cause of accident, the nature of injury and the name of injured person. The Department shall not be responsible for any medical care.

17. MEDICAL SUPERVISION

The contractor shall employ only such person known to be free from contagious diseases. Any employee having such disease shall be removed as and when detected. The contractor shall remove such employee to approved medical hospital or permanently from the site of work or construction camps and colonies, whenever in the opinion of the Engineer-in-charge it is necessary for the protection of the Public health or health of such employee.

It shall be the sole responsibility of the contractor to arrange for medical care and supervision of his workmen and staff at his own cost.

18. OBSERVANCE OF LAWS, LOCAL REGULATIONS AND ATTACHMENTS

The Contractor shall conform to all laws of the land and the regulations and bye-laws of any local authority and power, water or lighting authorities related with the aforesaid work. He shall before make any variations from the drawings or specifications that may be necessitated for so conforming, give written notice to Engineer-in-charge for instruction thereon. The Contractor shall give all notice required by the said Acts. Regulation or bye-laws and pay all fees in connection therewith. He shall also ensure that no attachment is made against materials or works related to the contract. The contractor shall protect and Indemnify Government against all claims or liabilities arising for or based on the violation of such laws, ordinance, regulations, bye-laws, decree or attachments by him or by his employees.

19. OTHER CONTRACTORS

It may be required that several contractors under different contracts work at the same site simultaneously. When two or more contractors are engaged on work in the same vicinity each shall extend all possible and reasonable facilities to other in a spirit of active co-operation and mutual accommodation. The contractor shall not take or cause to be taken any step or action that may cause disruptions, discontentment or disturbances to the works, labour and arrangement of other contractors in the vicinity and in the project localities.

In case of any difficulty amongst the contractors the Engineer-in-charge shall direct manner in which each contractor shall conduct his work so far as it affects the other and his decision shall be binding upon all the contractors involved.

20. OTHER WORKMEN

The Engineer-in-charge shall have full authority to depute workmen on the work site to execute other work not included in this contract. The contractor shall afford every reasonable facility during working hours, to enable such workmen to carry out the other works provided that such works shall be carried out in such manner as not to impede the progress of the work included in the contract.

21. PREVENTION OF ACCIDENTS

The Contractor shall at all times exercise reasonable and proper precautions for the safety of the people employed on the work and shall comply with the provisions of the current safety laws on buildings and construction codes of the State Govt, as may be applicable to him. He shall also provide all necessary fencings and lights as required to protect cattle, livestock and the public from accident. All machinery or equipment and other sources of physical hazards shall be guarded in accordance with the regulations or laws of the State Govt. or the Govt. of India. The contractor shall be responsible for all risks to the lives and properties of the people from whatsoever cause, arising in connection with the execution of the works and during their progress although all reasonable and proper precautions may have been taken by the contractor. In case of Government (either alone or jointly with contractor) shall be called upon by the court of law to make good any such loss or losses or damages or to pay compensation including that payable under the provisions of the workmen's Compensation Act, Industrial Dispute Act etc, to any person or persons sustaining damage as aforesaid by reason of any act of negligence or omission on the part of the contractor the amount which the Govt, may be required to pay in respect thereof and the amount of any costs and charges (including legal costs and charges in connection with the legal proceedings) which Government may have to incur in these respects all these shall be recoverable from the contractor. Immediate reports of all accidents shall be submitted by the contractor to competent authorities according to statutory requirements giving such details as may be prescribed for that purpose.

The contractor shall at his own expense arrange for the safety operation as required including the provision in the safety manual published by the Government of Bihar /Central Water Commission, New Delhi (latest edition).

22. REMOVAL OF CONTRACTOR'S MEN

The contractor shall on the written direction of the Engineer-in-charge immediately remove from the work site, camps and colonies, any person employed thereon who may in the opinion of the Engineer-in-charge be incompetent or has misconduct himself. Such person shall not be employed again on the work without the written permission of the Engineer-in-charge.

23. SPECIFICATIONS

In case of any class of work for which there is no specification available, such work shall be carried out in all respect in accordance with the standards and requirements as prescribed by the competent authority.

24. TAXES, DUTIES, ROYALTIES, LEVIES etc.

24.1 If there is any variations statutory or otherwise, in the above taxes (excluding income tax) duties, levies etc. or fresh taxes, duties, levies etc. are affected by the Central or State Government or Local Bodies; then the difference between those existing on the date of submission of the Tender and actually paid by the contractor (based on the bill and payment vouchers to be produced to the Engineer-in-charge) shall be adjusted upwards or downwards for fresh levies, increase or decrease as the case may be.

25.2 INCOME TAX

Income tax at the prevailing rates on the gross value of work done under this contract by the contractor shall be deducted at source as per statutory provision by the Engineer-in-charge from every bill of the contractor.

26 USE AND CARE OF WORK SITE

26.1 The Bidders shall have to submit self-attested photocopy of up-to-date GST clearance, Pan-Card, Labour License etc. required for the aforesaid work in addition to other required documents..

27. WORK UNDER THE CONTRACTOR'S CHARGE

The comprehensive maintenance shall be under the contractor's charge from the date of commencement till defect liability period. After completion of DB part the contractor shall be fully responsible for maintenance, protections and making good all damages to the work occurring during course of maintenance of the fabricated water tankers or due to any reason whatsoever. Taking over the whole or part of the work by the Engineer-in-charge shall not waive or diminish the responsibility of the contractor to maintain, execute all repairs, amendments, reconstructions, rectifications, expenses of the of the contractor.

28 (i). In case of any printing error in either in quantity or amount, the same will be corrected per sanctioned estimate.

(ii). The department shall not be responsible for any inconvenience or delay caused due to failure of power supply and no compensation for such failure or delay in works on this account can be claimed by the Bidder. In case of non-availability or failure of power the bidder shall make his own necessary arrangements like diesel generator sets etc. at his own cost so that progress of

work is not affected and Employer shall in no case be responsible for any delay in works because of non-availability of power.

(iii). The Bidder shall employ competent and skilled workmen, fully experienced and capable of performing duties assigned to them. When local laws require, the employee shall be required to acquire certificates of company for his work from the competent authority.

29. If any dispute arises in interpretation of clauses/specifications of section 5 in that case the decision of the competent authority of PHED Government of Bihar will be final and binding to the contractor /agency.



SECTION 6

TECHNICAL SPECIFICATION



1.0 (A) TECHNICAL SPECIFICATION OF SS304 GRADE TWO WHEEL WATER TANKER:-

Design codes -

The equipments shall be designed in accordance with the following standards except otherwise detailed. The latest editions at the time of design shall be used in each case. Equivalent standards of bidders country may be followed. In this event copies of the relevant standards shall be submitted along with design calculations.

List of codes of BIS and descriptions

IS 4063: - Indian standard MIG (Metal inert gas) welding.

IS 6911: - Indian standard SS 304 (Plates, sheets and strips)

IS 17875 : - Indian standard stainless steel seamless pipes and tubes

IS 11269: - Indian standard axle assembly

IS 2848 : - Indian standard for temperature sensor

IS 63664 : - Indian standard for NDT

IS 10500 : - Indian standard for permissible and acceptable limits of drinking water

i Chassis:

The Chassis shall be fabricated of SS304 grade Stainless steel channel as per standard practice to mount the SS304 graded stainless steel Tank. The entire joint shall be welded with gusset plate, wherever required as per standard practice.

The SS304 steel chassis frame shall have two longitudinal members and 4 cross members of channel section of size 125 x 65 mm (ISMC)

The overall dimensions of water tanker trolley chassis shall be as under:-

S.No.	Approx. Cap.	Length	Width
1	3600 liters	3.15 meter	0.97 meter

ii Draw bar:

Draw bar shall be centrally fitted in Triangular V shape welded together made out of SS304 grade steel channel 125X65 mm with eye hook made of solid 40mm dia SS 304 solid bar.

iii **Axle assembly:**

Axle shall be made from 65X65mm square solid grade bar of 1.44 m length with both the end machined and threaded and provided with iron hubs and SS304 steel hexagonal lock nut, fitted with twin taper roller bearings, and provided with grease nipples for greasing the moving parts.

iv **Tyres, Tubes & Wheel Assembly:-**

Two number tyres of 7.50 - 16 and tubes of standard make (MRF, CEAT, JK, Apollo, Bridgestone, etc. of standard make) shall be provided with double plated rims 5mm thick with 08 nos. holes.

v **Vessel of Water Tanker :-**

The Water Tanker should have capacity of 3600 liters manufactured in elliptical shape. The size of Water Tanker are as follows:-

S1

No	Capacity	Major Axis	Minor Axis	Length
1	3600 liters	1.37 Mtrs	1.08 mtrs.	3.10 mtrs.

The water tank mounted on the chassis & will be welded construction and fabricated & made out of 4 mm thick SS Sheet of grade SS304, and end plates of 4 mm thick SS plate. End plate should be in maximum one piece.

The Tank body shall be rest on chassis by means of eight no of SS 304 steel guide made out of 100 mm x 50 mm x 5 mm channel section at suitable distance on both side.

vi **Manhole:**

One man hole of 450 mm dia with hinged cover shall be provided at the top of the tank. The cover of tank shall be fabricated from 4 mm thick SS sheet of grade SS 304. The collar of the cover and manhole shall be made out of 4 mm SS304 graded steel strip. Locking arrangement for cover shall also be provided. The man hole covers shall be fabricated in such a way that no foreign material may enter into the tank.

Specification:-

A	Major Axis :-	1.37 meter
B	Minor Axis :-	1.08 meter
C	Length of Vessel :-	3.10 meter
D	Length of Chassis :-	3.15 meter
E	Length of Axle :-	1.44 meter
F	Stand :-	0.50 meter
G	Size of Tyre :-	7.50-16
H	Draw bar centrally fitted :-	1.60 meter
I	Mud Guard :-	1.22 mtr x 0.30 mtr x 0.004 mtr

(B) GENERAL REQUIREMENT OF TANKERS:-

I Outlet:

Outlet 40 mm SS304 steel nipple of 10 cm length (minimum) be provided at the rear of the tank along with required 40 mm GM ball valve, followed by another 20 cm length SS 304 grade steel nipple for connecting a hose pipe. A drain plug of 50 mm shall be provided at the bottom of the tank at suitable place. Additional 19 mm dia SS304 steel nipple with socket & bib cock in rear portion shall also be provided.

II Miscellaneous Work-

Holding bar shall be made from SS304 grade steel sheet of 25 mm dia tube and should be fixed with suitable size of SS 304 grade steel plate duly welded at equal distance on top of tank body. 2 nos climbing bar of SS304 grade steel rod of suitable diameter shall be fixed in front of tank body for the climbing purpose. Mud guard shall be made from 4 mm thick SS 304 stainless steel sheet & fitted on both side above wheel with reinforcing ribs & supported bracket.

III Painting & Finishing:

Doing complete tank body polishing except axle, hub, rim etc. Doing spray painting with two coat of synthetic enamel paint of all iron metallic structure as axle, hub rim etc. after rubbing cleaning & one coat of primer & writing of department name and required slogan on all side of tanker.

IV Welding Procedure :

The edges of the sheets to be joined by the welding shall be properly formed to suit the type of welding selected. Where sheets will be sheared, edges to be joined by welding shall be machined or chipped to sound metal. Where bending or forming of sheets are required, the sheets shall be bent by cold forming/rolling. Heating and hammering to correct bends will not

be permitted. SS304 weldings require special techniques to maintained corrosion resistance, leak proof and mechanical properties, etc. all complete.

Common welding techniques that will be followed during welding of SS304 sheets are as per follows: -

- (a) TIG (Tungsten inert gas) welding suitable for thin sheets for SS304 to get high quality and precise welds.
- (b) MIG (Metal inert gas) welding suitable for thicker sections of SS304 to get high quality of weld and faster welding speed.

Key considerations during above welding process: -

- (i) **Cleanliness** - ensures surfaces are clean and free of contaminants before welding
- (ii) **Shielding gases** – use argon or helium to protect the weld area from atmospheric gases.
- (iii) **Filler materials** : - choose compatible filler rods or wires (eg- ER308L or 308LSi)

In this context, it is important the manufacturer shall be responsible for the quality of the work performed by his welding staffs. All welders assigned to the work shall have passed qualification test for welders. If at any time the work of any welder appearable questionable, the welder shall be require to pass additional qualification test to determined his ability to performed the type of work in which he is engaged.

Tolerance:-

± 2% tolerance shall be provided to overall dimension of material as well as thickness of sheet & Sections.


NOTE: -

- (i) **All the SS304 grade sheets used for the aforesaid work must be of Indian grade origin (JINDAL/SAIL/any other standard IS grade) as per direction of Engineer – In Charge.**
- (ii) **If required minor deviation/amendments in specifications may be done after taking written approval of CE (Mech.), Bihar Patna.**

(B) WEIGHT ANALYSIS OF S S TANKER WITH S S CHANNEL

ELLIPSE & ITS Formulas :-

The following mathematical formula are used in this ellipse calculator to find the area , perimeter & volume of and ellipse

Ellipse & formulas-			
			2b= minor Axis
2a = Major Axis			
Area=	$\pi \times a \times b$		
2a=	1.37 meter		
	4.49 ft.		
2b=	1.08 meter		
	3.54 ft.		
Area=	1.16 m ²		
Perimeter=	$2\pi\sqrt{\frac{(a^2+b^2)}{2}}$		
	3.87 meter		
	12.69 ft.		
Length of Tank body(Vessel) =	3.10 meter		
WEIGHT ANALYSIS :-			
1	4000mm x 2000mmx 4mm =	2	sheet
	3000mm x 1500mmx 4mm =	1	sheet
a.	Weight of 4 mm sheet per m ² =	32	kg
i	Area of 4000 mm x 2000 mm x 4mm size =	8	m ²
	Total area of 2 nos 4000 mm x 2000 mm size sheet =	16	m ²
ii	Area of 3000 mm x 1500 mm x 4mm size sheet =	4.5	m ²
	Total area of sheet = (i+ii)	20.5	m ²
	Hence the weight of all sheets	656	kgs
b	Weight of 2 nos. x 1.22 mtr x 0.30 mtr x 4mm thick Mud Guard	$2 \times 1.22 \times 0.30 \times 8000 \text{ Kg/m}^3$	=23.424 kg
C	Weight of steel guide of size 100mm x 50mm x 5mm S S channel		
	Total nos. of guide =	8 nos.	

	Length of guide =	0.15mtr
	Total length 0.15 mtr x 8 nos.	1.20mtrs
	weight of channel per meter =	6.40 kgs
	Total weight of guide = 1.20mtrs x 6.4 kgs	7.68 kgs
d	weight of stand = 0.52mtr x 0.4mt x 0.004mtrs x 8000kg/m ³	6.656 kgs
e	25 mm Hollow tube (SS304) L.S per tanker 30ft = 9.146mtrs	
	weight of 25 mm hollow tube of 2 mm wall thickness weight=	1.17 kg/m
	Total weight of 30 ft SS304 grade tube = 9.146x 1.17 kgs = 10.70 kgs	10.70 kgs
A	Total weight of required sheet of vessel including tubular bar :- = a (ii) +b+c+d+e= (656+23.424+7.68+6.656+10.70) kgs=	704.46 kgs
f.	weight of 125 mm x 65mm x 6 mm thick SS304 grade channel per meter for chassis=	12.24 Kg/mtr
	Length of channel 3.15 meter	
	Width of channel 0.97 meter	
	Total length of channel {(L x2+(Wx2)x2 nos cross member)}	
	{(3.15 x2)+(0.97x2)+(2x0.97)} mtrs	10.18 mtrs
ii	Length of stand supporting channel 0.20 mtr x2 nos	0.40 mtrs.
ii	Total length of channel for Draw bar :- {(1.60 x 2) + 0.97} mtrs	4.17 mtrs.
i	Total length of 125 mm x 65 mm x 6 mm thick S.S channel = (i+ii+iii) =	14.75 mtrs
	Hence, Total weight of 125 mm x 65mm x 6mm thick S.S. channel (14.75x12.24)kg	180.54 kgs
g	Weight of Hitch of Tanker (Draw hook) cylindrical solid bar :-	
	Length = 0.60 mtrs & radius = 0.0188 mtr	
	Hence, weight of Hitch= $\frac{1}{2}\pi r^2 l = 22/7 \times 0.0188 \times 0.0188 \times 0.60 \times 8000 \text{ kg/m}^3$	5.33 kgs
B	Hence weight of 125 mm x 65mm x 6mm thick SS304 Grade channel :- = f (iii) + g =(180.54+5.33)kgs	185.87 kgs

C) TECHNICAL SPECIFICATION OF IOT SYSTEM INSTALLED ON S S 304 GRADE CHANNEL IN FRONT OF WATER TANKER:-

(I) SPECIFICATION OF IOT CONTROLLER INSTALLED ON SS304 GRADE COMPARTMENT

Sl. No.	Components required for the IOT based	Functioning Description of the components
---------	---------------------------------------	---

	system installed with water tankers	
i.	IOT Components	
	a) Controller	IOT based system.
	b) Power control	The power control for the IOT based system will be from 100AH,12V dry type battery.
	c) Sensors, connectivity , data logger and backup	<p><u>(a)The IOT system must contain following sensors for its functioning as mentioned below: -</u></p> <ul style="list-style-type: none"> (i) Temperature monitoring (ii) TDS monitoring (iii) PH monitoring (iv) Ultrasonic water level monitoring (v) Dry Battery status monitoring <p><u>(b) Connectivity regarding IOT based system shall contain following features: -</u></p> <ul style="list-style-type: none"> (i) GPRS/WIFI module for communication with backend web server. (ii) GPRS/WIFI module for real time water tanker location information. (iii) Uploading of water level and quality with battery charging status parameter data to the server (iv) Ability to backup data in case of connectivity Outages . <p><u>(c) Data logger</u></p> <ul style="list-style-type: none"> (i) Flash memory bank for logging sensor/dispensing data. (ii) Relay logged info to the server using communication channel GPRS/WIFI based connectivity with web based server system. (iii) GPS location system. iv) Relay unit for controlling water dispensing nozzles.

		v) Interface of temperature monitoring , TDS monitoring , PH monitoring, Ultrasonic water level monitoring, Battery status monitoring , GPS location monitoring etc. as per direction of E/I.
	d) Solenoid valve	This system must possess IOT based control in order to dispense water properly.
	e) Flow sensor	It must displays the quantity of water dispensed in a day.
	f) Button panel	On /off button in green color.
ii.	Dispensing components	
	a) Dispensing pump flow	20L-40 LPM as per need (Provision to suitable control it may be modified as per requirement with the direction of E/I)
	b) Dispensing pipe material	Silicon pipe
	c) Dispensing Nozzle	Food Grade
iii.	Power section	
	a) 100 AH , 12 V Dry type Battery	
	b) Charging socket (water proof) on the outside of the cage (so components are secured and battery can be charged outside only)	
	_No. of components 1 dimensions (Height x width x Depth) :- (450mm x 1000mm x450mm)	
	Materials :- Outside metal SS304 the sheet of Box should not be less than 4mm thick with antitheft locking arrangement	
	Internal :- Wooden water resistant	
iv	a) 1" Water inlet pipe line will need to be laid from the tank outlet till the IOT Box	
	b) All the Components IOT Box, Dispensing pipe & Nozzle and battery would be placed inside a metal cage with solid base. Total size of cage- 450mm (Depth) x 1000mm (width) x 450mm (Height)	
	c) Cage would be able to withstand the weight of dry battery and other components	

	(Approximately 38 Kgs)
	d) The 100 AH dry battery charging socket will be installed outside this compartment. (Socket size 3" x 3" x3" water proof)

Technical Specification: IoT Data Management & Dashboard

<u>Feature</u>	<u>Technical Requirement</u>
Data Storage Duration	During comprehensive maintenance period of rolling historical data stored on a secure Cloud Server.
Data Logging Frequency	Real-time transmission of GPS location and water dispensing volume (every 5- 10 minutes or per transaction).
Cloud Infrastructure	Hosted on MeitY Govt. of India empanelled cloud service providers (like AWS, Azure, or NIC) to ensure data security.
Digital Dashboard	A web-based GIS Dashboard accessible via login for PHED officials to monitor all 130 tankers simultaneously.
Reporting Tools	Automated generation of weekly, and monthly reports in PDF and Excel formats showing total water supplied per district.
Connectivity	Industrial-grade 4G/5G M2M SIM cards with an active data plan for uninterrupted transmission as well as TCP/IP/MQTT technique.
Local Backup	In case of network failure, the IoT Controller must have an SD Card/Internal Memory to store at least 30 days of data locally.
Alert System	SMS/Email alerts for low battery, unauthorized movement (Geo-fencing), or sensor tampering.
Security	Implementation of End-to-End Encryption for data transfer between the tanker IOT box and the central server/District level server.

Proposed System Flow:

1. Tanker Side:

Sensors collect data → IoT Controller processes it → GSM Module transmits to Cloud.

- 2. Server Side:** Data is time stamped and stored in a secure Database for comprehensive maintenance period.
- 3. User Side:** PHED Engineers access the Live Dashboard via application/software infrastructure (**responsibility of app installation and software infrastructure to be fulfilled by contractor /agency**) to verify alternate water supply arrangements in Bihar districts.

General Information regarding IOT Architecture :-

At its core, IOT architecture is a **framework or blueprint** that defines how different parts of an IoT ecosystem devices, networks, software and users interact with each other. It organizes the workflow of sensing, communicating, processing and acting in to structured layers.

Think of it like building a smart city:

Perception Layer = The sensors and devices installed on streets.

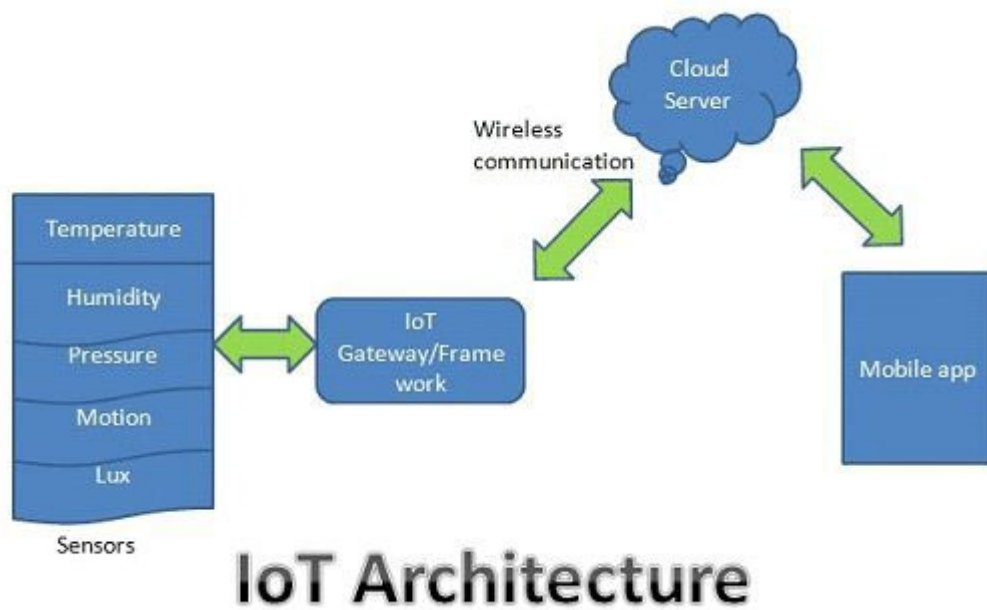
Network Layer = The roads and highways connecting the city.

Cloud Layer = The city hall that makes decisions.

Application Layer = The control room/dashboard used by city officials.

Each layer is essential, and they must work together seamlessly for IoT to deliver value.

Core Components of IoT Architecture



IoT is built on three essential components that work in unison to collect, transmit, and process data:

1. Sensors and Actuators

These are the “eyes” and “hands” of an IoT system.

Sensors detect changes in the environment like:

- Temperature
- Humidity
- Light intensity
- Motion
- Gas leakage

They convert this physical data into digital signals that a [computer](#) can understand.

Actuators perform physical actions based on decisions made by the system:

- Turn on a light
- Open a valve
- Rotate a motor

Analogy is like Think of a human body.

- Sensors are your senses (eyes, ears).
- Actuators are your muscles.

2. Connectivity

Sensors alone are not enough—they need a way to **send their data** to a processing unit (like a cloud server or Smartphone).

Different IoT applications use different connectivity methods:

Wi-Fi – Common in homes (e.g., smart TVs, Alexa)

Bluetooth/BLE – Used in wearables (smart watches, fitness bands)

LoRaWAN – Ideal for long-range, low-power communication (smart farming, logistics)

LTE/4G – Cellular networks for mobile and field-based devices

- **5G** – Next-gen high-speed, low-latency connectivity for critical IoT applications

3. People and Processes

Ultimately, IoT serves **human users**:

- Homeowners using a mobile [app](#) to monitor home temperature
- Factory managers monitoring machine health
- Doctors reviewing patient data remotely

IoT also supports automated processes:

- When temperature crosses 30°C, turn ON the fan
- If motion is detected at night, alert security

This is where business rules and logic are applied.

IoT Architecture Layers

The IoT architecture consists of **four structured layers**, with real-world analogies and use cases.

1. Perception Layer (Device Layer)

This layer **collects raw data** from the environment using physical devices:

- Sensors (temperature, motion, sound)
- Actuators (motors, valves)
- Cameras

Real-World Example:

A **smart irrigation system** in agriculture uses:

- Soil moisture sensor (to detect dryness)
- Temperature sensor (to detect weather conditions)

These sensors send readings for further processing.

Key Terms:

- **Embedded Devices** – Miniature systems with sensors and basic computing
- **Smart Objects** – Everyday items embedded with sensors and communication ability

2. Network Layer (Communication Layer)

This layer transmits data **from devices to processing units (cloud or edge servers)**. It ensures connectivity, routing, and communication.

It also includes:

- **IoT Gateways** – Devices that act as bridges between sensors and the internet
- **Communication Protocols** – Rules to structure the data (e.g., MQTT)

Real-World Example:

In a smart home:

- A Zigbee hub connects lights, thermostats, and security systems.
- It sends data to the cloud via Wi-Fi or 4G.

Key Technologies:

- **MQTT** – Lightweight protocol for reliable IoT messaging
- **LoRaWAN** – Low power, long-range for agriculture and city infrastructure
- **NB-IoT** – For cellular-based IoT (like smart meters)

3. Cloud Layer (Processing & Storage Layer)

The brain of the IoT system.

Here, data is:

- Stored
- Analyzed
- Interpreted
- Used to make intelligent decisions

Edge Computing:

Instead of sending all data to the cloud, edge devices (like Raspberry Pi, Jetson Nano) can process data locally, reducing delay and bandwidth usage.

4. Application Layer (User Interface Layer)

This is the visible face of the IoT system. It provides tools and dashboards for:

- Monitoring
- Control
- Visualization
- Notifications

Real-World Example:

You use the **Blynk mobile app** to:

- View the status of your devices
- Turn ON/OFF lights
- Get alerts about gas leakage

Key Tools:

- Web dashboards (e.g., Node-RED UI, Grafana)
- Mobile apps (e.g., Tuya, Blynk, Google Home)

This layer determines the **user experience (UX)** of your IoT system.

How does IoT Work -

To understand IoT architecture in action, let's walk through a real-world example: **a smart home security system.**

Step 1: Data Collection

Sensors are placed at doors and windows to detect:

- Motion
- Door opening/closing
- Glass breaking sounds

Each sensor constantly monitors its environment. For example, if a motion sensor detects movement near the front door, it captures that event and prepares to send the data.

Beginner Tip: These are raw signals that haven't been interpreted yet. They just say "motion detected" or "no motion."

Step 2: Data Transmission

Once the sensor detects motion, the signal is transmitted to a local hub (or IoT gateway). The gateway then sends this data to the cloud using:

- Wi-Fi
- Mobile LTE/5G
- LoRaWAN (for longer-range systems)

If you're using a smartphone app, the data may also travel through a secure server to your app in real-time.

Beginner Tip: Communication happens through protocols like MQTT or HTTP which structure the message for delivery.

Step 3: Data Processing & Storage

When the data reaches the cloud:

- It's stored securely in a database.
- AI/ML algorithms may analyze it (e.g., detect repeated motion at certain times).
- Rules/logic decide what should happen next.

Example:

- If motion is detected and you're not home, the system triggers an alert.

Beginner Tip: Data is processed centrally (cloud computing) or nearby (edge computing) depending on the system setup.

Step 4: Action & Response

Once the system understands the situation, it **takes action**:

- Sends a push notification to your phone
- Triggers an alarm
- Records video through a connected camera

All this happens in seconds, often without human intervention.

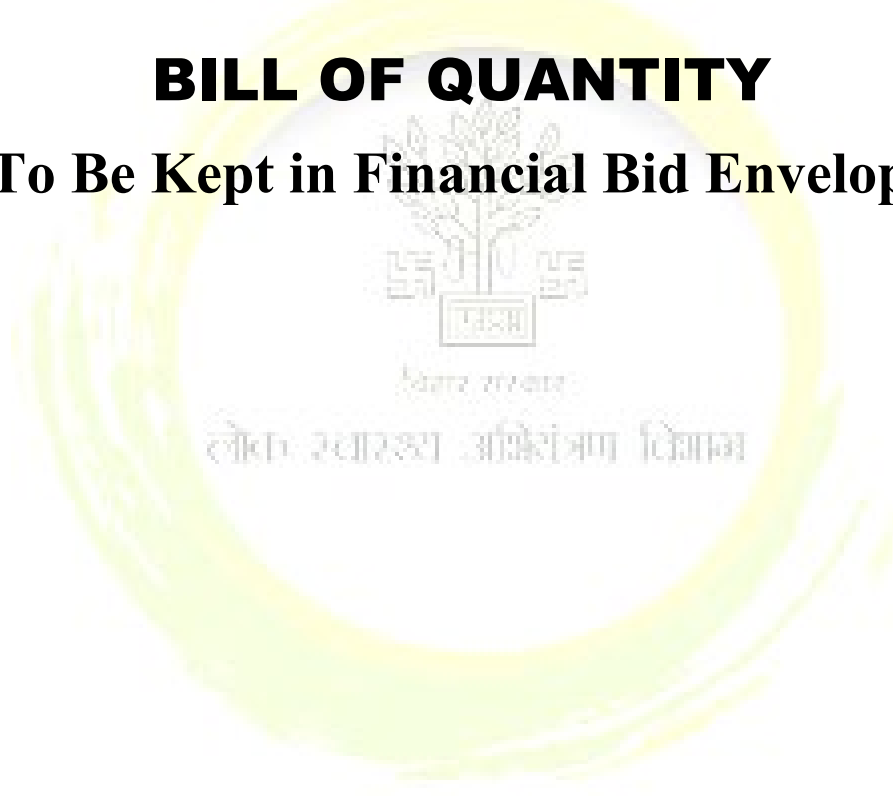
Real Life Analogy: Just like you quickly remove your hand when you touch something hot, IoT systems respond instantly based on data.

Key Components in IoT Architecture

To build a fully functional IoT system, you need more than just sensors and [apps](#). Below are the **essential components**, categorized by function:

Component	Function
Sensors	Collect real-time data from the environment.
Examples	Temperature sensors, gas detectors, light sensors, motion detectors.
IoT Gateways	Act as bridges between local devices and the internet/cloud.
Function	Filter, encrypt, and format data before it's sent to the cloud.
Cloud Platform	Stores and processes data using databases and AI/ML algorithms.
Examples	AWS IoT, Azure IoT Hub, Google Cloud IoT Core.
Edge Devices	Handle data processing closer to the source (low latency).
Examples	Raspberry Pi, Jetson Nano, BeagleBone Black.
Communication Protocols	Help devices speak to each other and transmit messages.
Examples	MQTT, CoAP, HTTP, LoRa, NB-IoT.
User Interface	Lets users monitor and control devices through apps or dashboards.
Examples	Mobile apps (e.g., Blynk), web dashboards (e.g., Grafana, Node-RED).

SECTION 7
BILL OF QUANTITY
(To Be Kept in Financial Bid Envelope)



BILL OF QUANTITIES

Preamble

1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, Conditions of Contract, Technical Specifications and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices tendered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.
3. The rates and prices tendered in the priced Bill of Quantities shall, except in so far as it is otherwise provided under the Contract, include all constructional plant, labour supervision, materials, erection, maintenance, insurance, Profit, taxes and duties, together with all general risks, liabilities and obligation set out or implied in the Contract.
4. The rates and prices shall be quoted entirely in Indian Currency.
5. A rate whole cost of complying with the provision of the contract shall be included in the items provided in the priced Bill of quantities, and where no item are provided the cost shall be deemed to be distributed among the rates and prices entered for the related items of work.
6. The whole cost of complying with the provisions of the Contract shall be include in the items provided in the priced Bill of Quantities, and where no Items are provided the cost shall be deemed to be distributed among the rates and prices entered for the related items of work.
7. General directions and descriptions of work and materials are not necessarily repeated or summarized in the Bill of Quantities. References to the relevant section of the contract documentation shall be made before entering rates or prices against each item in the Bill of Quantities.
8. The method of measurement of completed work for payment shall be in accordance with the specification issued by the department time to time.
9. Errors will be corrected by the Employer for any arithmetic errors pursuant to Clause 29 of the Instructions to Bidders.
10. Standard format of Technical sheet template and financial sheet template Attached as Annex. Named as Technical bid sheet and financial bid sheet at the end of the Section 8

Note - ** Bill of quantity should be downloaded by bidders from the website <https://eproc2.bihar.gov.in/>

SECTION 8

SECURITIES AND OTHER FORMS

(To be filled by Bidder/Employer)



BID SECURITY (BANK GUARANTEE UNCONDITIONAL)

WHEREAS, _____
[name of Bidder] (hereinafter called "the Bidder") has submitted his Bid dated _____ [date] for the construction of _____ [name of Contract hereinafter called "the Bid"].

KNOW ALL PEOPLE by these presents that We

[name of Bank] of _____ [name of country] having our registered office at

_____ (hereinafter called "the Bank") are bound unto _____ [name of Employer] (hereinafter called "the Employer") in the sum of _____

*for which payment well and truly to be made to the said Employer by the Bank itself, his successors and assigns by these presents.

Sealed with the Common seal of the said Bank this _____ day of _____ 20 _____

THE CONDITIONS of the obligation are:

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

OR

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

- (a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required or
- (b) fails or refuses to furnish the Performance Security in accordance with the Instruction to Bidders: or
- (c) does not accept the corrections of the Bid Price pursuant to Concerned Clause

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

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

DATE _____

SIGNATURE _____

WITNESS _____

SEAL _____

[Signature, name and address]

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

** 45 days after the end of the validity period of the Bid. Date should be inserted by the Employer before the Bidding documents are issued.

PERFORMANCE BANK GUARANTEE

To

_____ [name of Employer]
_____ [address of Employer]

WHEREAS _____ [name and address of Contractor] (here after called the Contractor”) has undertaken, in pursuance of Contract No. _____ dated _____ to execute _____ [name of Contract and brief description of Works] (hereinafter called “the Contract”).

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

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

NOW THEREFORE we have hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, up to a total of

_____ [amount of guarantee]*
_____ (in words), such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

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

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

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

Signature and Seal of the guarantor _____

Name of Bank _____

Address _____

Date _____

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



LETTER OF ACCEPTANCE

(Letterhead paper of the Employer)

_____ (Date)

To

_____ [Name and address of the Contractor]

Dear Sirs,

This is to notify you that your Bid dated _____ for execution of the _____ (name of the contractor and identification number, as given in the Instructions to Bidders) for the Contract Price of _____ Rupees (_____) (amount in words and figures), as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our agency.

You are hereby requested to furnish Performance Security, in the form detailed in Para 34.1 of ITB for an amount equivalent to Rs. _____ within 21 days of the receipt of this letter of acceptance valid up to 28 days from the date of expiry of defects Liability Period i.e. up to _____ and sign the contract, failing which action as stated in Para 34.3 of ITB will be taken.

Yours faithfully

Authorized Signature
Name and title of Signatory
Name of Agency

ISSUE OF NOTICE TO PROCEED WITH THE WORK

(Letterhead of the Employer)

_____ (Date)

To

_____ (Name and address of the Contractor)

Dear Sir

Pursuant to your furnishing the requisite security as stipulated in ITB Clause 34.1 and signing of the Contract for the construction of

_____ at a Bid Price of Rs

You are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully,

(Signature, name and title of signatory authorized
to sign on behalf of Employer)

AGREEMENT FORM

This agreement, made the _____ day of _____ between _____ (name and address of Employer) [hereinafter called “the (name and address of contractor) hereinafter called “the Contractor” of the other part.]

Whereas the Employer is desirous that the Contractor execute

_____ (name and identification number of Contract) (Hereinafter called “the Works”) and the Employer has accepted the Bid by the Contractor for the execution and completion of such works and the remedying of any defects therein, at a cost of Rs. _____

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to and they shall be deemed to from and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the works and remedy any defects therein in conformity in all aspects with the provisions of the contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the Execution and completion of the Works and the remedying the defects wherein Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.
4. The following documents shall be deemed to form and be ready and construed as part of this Agreement viz.

- (i) Letter of Acceptance
- (ii) Notice to proceed with the works
- (iii) Contractor’s Bid
- (iv) Condition of Contract: General and Special

- (v) Contract Data
- (vi) Additional condition
- (vii) Drawings
- (viii) Bill of Quantities and
- (ix) Any other documents listed in the Contract Data as forming part of the Contract.

In witnessed whereof the parties there to have caused this Agreement to be executed the day and year first before written

The Common Seal of

_____ was

hereunto affixed in the presence of :

Signed, Sealed and Delivered by the said

_____ in the presence of :

Binding Signature of Employer

Binding Signature of Contractor

UNDERTAKING

I, the undersigned do hereby undertake that our firm M/s

_____ agree to abide by this bid for a period _____ days for the date fixed for receiving the same and it shall be binding on us and may be accepted at any time before the expiration of that period.

(Signed by an Authorized Officer of the firm)

Title of Officer

Name of Firm

Date



Joint Bidding Agreement Format for project

(To be executed on Stamp paper of appropriate value)

THIS JOINT BIDDING AGREEMENT is entered into on this the..... day of20

AMONGST

1. {Limited, a company incorporated under the companies Act, 1956} and having its registered office at(hereinafter referred to as the **“First Part”** which expression shall, unless repugnant to the context include its successors and permitted assigns)

AND

2. {Limited, a company incorporated under the companies Act, 1956} and having its registered office at(hereinafter referred to as the **“Second Part”** which expression shall, unless repugnant to the context include its successors and permitted assigns)

AND

3. {Limited, a company incorporated under the companies Act, 1956} and having its registered office at(hereinafter referred to as the **“Third Part”** which expression shall, unless repugnant to the context include its successors and permitted assigns)}

AND

4. {Limited, a company incorporated under the companies Act, 1956} and having its registered office at(hereinafter referred to as the **“Fourth Part”** which expression shall, unless repugnant to the context include its successors and permitted assigns))*

The above mentioned parties of the FIRST, SECOND, {THIRD and FOURTH} PART are collectively referred to as the **“Parties”** and each is individually referred to as a **“Party”**

WHEREAS,

(A)[Government of Bihar / Appropriate Authority] represented by its _____ and having its principal office at _____] (hereinafter referred to as the “AUTHORITY” which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns) has invited applications (the “Applications”) by its Request for Qualification/ Proposal No..... dated..... (the “RFQ/RFP”) for pre-qualification and short- listing of bidders for development and operation/ maintenance of _____ (the “Project”) through public Private partnership on Design, Build, Finance Operate and Transfer (DBFOT) basis.

(B) The Parties are interested in jointly bidding for the Project as members of a Consortium and in accordance with the terms and conditions of the RFQ/RFP document and other bid documents in respect of the Project, and

(C) It is a necessary condition under the RFQ/RFP document that the members of the Consortium shall enter into a joint Bidding Agreement and furnish a copy thereof with the Application.

*The number of Parties will be shown here, as applicable, subject however to a maximum of 6 (six)

NOW IT IS HEREBY AGREED as follows:

1. Definitions and interpretations

In this Agreement, the capitalized terms shall, unless the context otherwise requires, have the meaning ascribed thereto under the RFQ/RFP.

2. Consortium

2.1 The Parties do hereby irrevocably constitute a consortium (the “Consortium”) for the purposes of jointly participating in the Bidding Process for the Project.

2.2 The parties hereby undertake to participate in the Bidding Process only through this Consortium and not individually and/ of through any other consortium constituted for this Project, either directly or indirectly or through any of their Associates.

3. Covenants

The Parties hereby undertake that in the event the Consortium is declared the selected Bidder and awarded the Project, it shall incorporate a special purpose vehicle (the “SPV”) **under the Indian Companies Act 1956** for entering into a Concession Agreement with the Authority and for performing all its obligations as the Concessionaire in terms of the Concession Agreement for the Project.

4. Role of the Parties

The Parties hereby undertake to perform the roles and responsibilities as described below⁺:

- (a) Party of the First Part shall be the Lead member of the Consortium and shall have the power of attorney from all Parties for conducting all business for and on behalf of the Consortium during the Bidding Process and until the Appointed Date under the Concession Agreement when all the obligations of the SPV shall become effective;
- (b) Party of the Second Part shall be {the Technical Member of the Consortium;}
- (c) Party of the Third Part shall be the {Financial Member of the Consortium; and}
- (d) Party of the Fourth Party shall be the {Operation and Maintenance Member/ Other Member of the consortium}.

5. Joint and Several Liabilities

The Parties do hereby undertake to be jointly and severally responsible for all obligations and liabilities relating to the Project and in accordance with the terms of the RFQ, RFP and the

⁺Provide the actual details/ role/expertise of the member of the consortium

Concession Agreement, till such time as the Financial Close for the Project is achieved under and in accordance with the concession Agreement.

6. Shareholding in the SPV

6.1 The Parties agree that the proportion of shareholding among the Parties in the SPV shall be as follows:

Party	Percentage Shareholding in the SPV
First Party:	
{Third Party:}	
Second Party:	
{Fpirtj {artu:}	

6.2 The Parties undertake that a minimum of 26% (twenty six per cent) of the subscribed and paid up equity share capital of the SPV shall be held by the Parties of the First, {Second and Third} Part whose experience (Technical) and network (Financial) are being reckoned for the purposes of qualification and short-listing of Applicants for the Project in terms of the RFQ, RFP and Concession Agreement.

6.3 The Parties undertake that each of the Parties specified in Clause 6.2 above shall, hold subscribed and paid up equity share capital of SPV as specified in the RFQ, RFP and Concession Agreement.

6.4 The Parties undertake that they shall comply with all equity lock-in requirements as set forth in the RFQ document, RFP document and Concession Agreement.

6.5 * The Parties undertake that the O&M Member shall subscribe and hold at least 10% (ten per cent) of the subscribed and paid up equity shares in the SPV in terms of the Concession Agreement (if the O&M member is included in the Consortium) of undertake to enter into an operations & maintenance (O&M) agreement with an entity having equivalent experience for a period of at least 5 (five) years from the date of commercial operation of the Project, failing which the Concession Agreement shall be liable to termination.

***Delete the alternative which is not applicable**

7. Representation of the Parties

Each Party represents to the other Parties as of the date of this Agreement that:

(a) Such Party is duly organized. Validly existing and in good standing under the laws of its incorporation and has all requisite power and authority to enter into this Agreement;

+Add further conditions relating to O&M member, if any.

(b) The execution, delivery and performance by such Party of this Agreement has been authorized by all necessary and appropriate corporate or governmental action and a copy of the extract of the charter documents and board resolution/ power of attorney in favour of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Consortium Member is annexed to this Agreement, and will not, to the best of its knowledge:

- (i) Require any consent of approval not already obtained;
- (ii) Violate any Applicable Law presently in effect and having applicability to it;
- (iii) Violate the memorandum and articles of association, by-laws of other applicable organizational documents thereof;
- (iv) Violate and clearance, permit, concession, grant, license of other governmental authorization, approval, judgement, order of decree or any mortgage agreement, indenture of any other instrument to which such party is a party or by which such Party or any of its properties or assets are bound or that is otherwise applicable to such Party; or
- (v) Create or impose any liens, mortgages, pledges, claims, security interests, charges or encumbrances or obligations to create a lien, charge, pledge, security interest, encumbrances or mortgage in or on the property of such Party, except for

encumbrances that would not, individually or in the aggregate, have a material adverse effect on the financial condition or prospects of business of such Party so as to prevent such Party from fulfilling its obligations under this Agreement;

(c) This Agreement is the legal and binding obligation of such Party, enforceable in accordance with its terms against it, and

(d) there is no litigation pending or, to the best of such Party's knowledge, threatened to which it or any of its Affiliates is a party that presently affects or which would have a material adverse effect on the financial condition or prospects or business of such Party in the fulfillment of its obligations under this Agreement.

8. Termination

This Agreement shall be effective from the date here of and shall continue in full force and effect until the date as specified in the RFP and in accordance with the Concession Agreement, in case the Project is awarded to the Consortium. However, in case the Consortium is either not pre-qualified for the Project or does not get selected for award of the Project, the Agreement will stand terminated in case the Applicant is not pre-qualified or upon return of the Bid Security by the Authority to the Bidder, as the case may be.

9. Miscellaneous

9.1 This Joint Bidding Agreement shall be governed by laws of {india}.

9.2 The Parties acknowledge and accept that this Agreement shall not be amended by the Parties without the prior written consent of the Authority

IN WITNESS WHEREOF THE PARTIES ABOVE NAMED HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED, SEALED AND DELIVERED
For and on behalf of LEAD MEMBER by:

(Signature)

SIGNED, SEALED AND DELIVERED
SECOND PART

(Signature)

(Name)
(Designation)
(Address)

(Name)
(Designation)
(Address)

SIGNED, SEALED AND DELIVERED
For and on behalf of LEAD MEMBER

SIGNED, SEALED AND DELIVERED
For and on behalf of FOURTH PART

(Signature)
(Name)
(Designation)
(Address)

(Signature)
(Name)
(Designation)
(Address)

In the presence of :

Notes:

1. The mode of the execution of the Joint Bidding Agreement should be in accordance with the procedure, if any, laid down by the Applicable Law and the charter documents of the executants(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.
2. Each Joint Bidding Agreement should attach a copy of the extract of the charter documents and documents such as resolution/ power of attorney in favour of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Consortium Member.
3. For a joint Bidding Agreement executed and issued overseas, the document shall be legalized by the Indian Embassy

4. **Format of letter of Acceptance**

(The Letters of Acceptance are to be submitted separately by all the Consortium Members of the consortium on their respective Letter-Heads)

Date:

To

Name and Address of the Authority

Ref: _____

Sir,

This has reference to the for Qualification (RFQ)/ Request for Proposal (RFP) being submitted by _____ (mention the lead member of the Bidding Consortium), as Lea Member of the Bidding Consortium comprising _____ (mention name(s) of the Consortium Members) in respect of the Project “_____”, in response to the RFQ/RFP document issued by _____, on _____.

We hereby confirm the following:

1. We _____ (name of the Consortium Member furnishing the Letter of Acceptance), have examined in detail and have understood and satisfied ourselves regarding the contents mainly in respect of the following:

- The RFQ/RFP document issued by the {Name of the Authority}
- All subsequent communications between {Name of the Authority} and the Consortium, represented by _____ (Mention name of the lead Member);
- The MoU signed between/ among _____ (names of the consortium Members), as members of the Consortium; and
- The RFQ/RFP being submitted by _____ (name of the Lead Member).

2. We have satisfied ourselves regarding our role as _____ (here give a brief description of the role for which the strength has been offered for evaluation) for the Project as specified in the RFQ/RFP if the Consortium is awarded the Project, we shall perform our role as outlined in the RFQ/RFP to the best of our abilities. We have examined the Proposal in detail, and abided by the commitments made in the same.

3. We authorize _____ (name of the Lead Member), as the Lead Member and authorize the same to perform all tasks including, but not limited to providing information, responding to enquiries, entering into contractual commitments (arising with regard to the contracts to be entered into by the Selected Project Developer with {Name of the Authority} on Behalf of the Consortium, etc., in respect of this Project.

4. We therefore request {Name of the Authority} to consider our strengths, or experience, and our track record as specified in the RFQ/RFP submission pursuant to the conditions specified in the RFQ/RFP, for the purposes of evaluation of the RFQ/RFP submission.

For and on behalf of:

Signature:

(Authorized Signatory)

Name of the Person:

Designation:

Format for Power of Attorney for Lead Member of Consortium

(On a Stamp Paper of relevant value)

Power of Attorney

Whereas {Name of the Authority}, has invited Request for Qualification (RFQ)/ Request for Proposal (RFQ) from interested parties for_____ Project. Whereas, the Consortium Members are interested in applying for the Project and implementing the Project in accordance with the terms and conditions of the RFQ/RFP Document and other connected documents in respect of the Project, and Whereas, it is necessary under the RFQ/RFP Document for the Consortium Members to designate the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts deeds and things as may be necessary in connection with the Consortium's proposal for the Project who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the consortium, as may be necessary in connection the consortium's RFQ/RFP for the Project.

NOW THIS POWER OF ATTORNEY WITNESSES THAT;

We, M/s (Lead Member) and M/s (the respective names and addresses of the registered office) do hereby designate M/sbeing one of the Consortium Members, as the Lead Member of the Consortium, to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's proposal for the Project, including submission of proposal, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Consortium in al its dealings with {the name of the Authority}, any other Government Agency or any person, in connection with the Project until culmination of the process of Consortium RFQ/RFP and thereafter till the Agreement is entered into with {the Name of the Authority}.

We hereby agree to ratify all acts, deeds and things lawfully done by Lead member, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us/consortium.

Dated this Day of.....20.....

.....

(Executants) – (To be executed by all the members of the Consortium)

Note: To be executed only in case of a consortium and the mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants (s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.



Principles of the Memorandum of Understanding

(To be executed between the consortium Members)

The Principles based on which the Memorandum of Understanding (MoU) shall be executed between/ among the consortium Members, are stated below:

1. The MoU should clearly specify the Lead Member.
2. The lead Member shall be assigned the responsibility to tie up the entire funding for the project.
3. The MoU should clearly specify the roles and responsibilities of each of the consortium Members, along with their proposed consortium share, if any.
4. The MoU should be duly signed by an Authorized Representative of each of the Consortium Members.
5. The MoU should be executed on an appropriate stamp paper.
6. The MoU should be specific to the Project.
7. The MoU should be valid for a minimum of twelve months from the last date for submission of the RFQ/RFP the validity period should be extended on the original terms, if requested by the authority.

The Principles indicated above are the minimum requirements of the MoU.

COMPREHENSIVE MAINTENANCE PERFORMANCE CERTIFICATE

OFFICE OF THE EXECUTIVE ENGINEER, P H DIVISION.....

Project Detail	Reference Information
Name of Work	
NIT Number	
Agreement No. Year and Work Order No. with Date	
Agency Name	
Total Maintenance Period	60 Months (from completion of Trial Run).
Current Billing Quarter	Quarter No: ____ (Period: From ____ to ____)

Maintenance Verification Report

This is to certify that the above-mentioned agency has provided **Comprehensive Maintenance** forNos. **SS304 Water Tankers** during the specified quarter. The performance has been evaluated based on the following technical parameters:

1. **IOT Connectivity & Monitoring**: The IOT controllers are fully operational, and real-time data for additional water supply arrangements is being successfully transmitted to the department's monitoring system.
2. **Structural Integrity**: The SS304 grade stainless steel bodies and the two-wheel steel chassis trolleys have been inspected and found to be in good working condition.
3. **Corrective Maintenance**: All reported mechanical or electronic faults during this period were addressed within the stipulated turnaround time as per the agreement.

Conclusion:- The maintenance services provided by the agency for this quarter are found to be **Satisfactory**. Payment may be processed after applicable deductions (GST, Income Tax, and 1% Welfare Labour Cess) as per Govt. of Bihar rules.

Signature of Agency
(With Official Seal)

Concerned Engineer in charge of P H Division.....

Executive Engineer of P H Division,With Official Seal)

TRIAL RUN COMPLETION CERTIFICATE

(For SS304 Water Tankers with IOT system)

Office of the Executive Engineer, Public Health Division,

<u>Description</u>	<u>Details</u>
Name of Work	
Notice Inviting Tender	
Agreement No. Year and Work Order No. with Date	
Name of Contractor/Agency	
Trial Run Duration	T.R. starts from dt..... And ends dt.....

Performance:-

This is to certify that the **water tankers with IoT system** supplied under the aforementioned contract have successfully completed the mandatory **01-month Trial Run Period**.

The evaluation conducted during the trial period confirms the following:

- **Material Compliance:** All 3600-liter capacity tanks (with IoT system) are fabricated using SS304 grade stainless steel sheets.
- **IOT Integration:** The **IOT controllers** installed on the units are operational, allowing for the intended monitoring of the additional water supply arrangements.
- **Mechanical Integrity:** The tankers, mounted on **two-wheel steel chassis trolleys**, have demonstrated stability and functionality during transport and distribution tasks.
- **Performance Duration:** The trial period commenced on [Start Date.....] and was successfully concluded on [End Date.....].

Having satisfied the trial run requirements, the agency is now eligible to proceed with the **60-month Comprehensive Maintenance** period as stipulated in the tender documents.

Signature of Agency
(With Official Seal)

Concerned Engineer in charge of P H Division.....

Executive Engineer of P H Division,
(With Official Seal)

**Format of Technical bid sheet
& Financial bid sheet
(To be filled by Bidder)**

