

TENDER DOCUMENT CONTENTS

➤ PART-I- TECHNICAL BID

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➤ FINANCIAL BID

SI.NO.	CHAPTER	CONTENT	PAGES	REMARKS
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CHAPTER-I

1.1 TENDER DOCUMENT ISSUE LETTER

1.1.1 Tender Notice no:- BMSICL/Infra 09

Date :- 19/10/2013

1.1.2 Received Cost of B.O.Q. Amounting: -

Rs Vide D.D/B.C. NO.

Dated. Name of Bank : -

1.1.3. Issued to (Name of Agency with Address):-

(a) Address: -

(b) Contact no:-

(c) E-mail I.D :-

1.1.4. Registration Details:-

(a) Name of State in which Contractor/ Firm/ Company is Registered : -

(b) Name of Department / PSU in which Firm/ Company is Registered : -

(c) Regd. No. with date of Registration:-

(d) Class of Registration:-

(e) Registration Valid up to: -

Signature of issuing Authority

BMSICL, Patna

Tender document downloaded from website and cost of B.O.Q. in the Shape of Bank Draft no..... Issued from. _____ (Name of Bank with Branch) Date AmountingRs. is enclosed with Technical Bid.

(Signature of Tenderer)

1.2 Brief description of work.

1.2.1. NAME OF WORK : -

Construction of : -At.....In
the District of.....item no.....of NIT NO:-BMSICL/Infra
09.Dt:-19/10/2013

1.2.2. Estimated Cost:-

1.2.3. Earnest Money Required:- Rs. 1,50,000 (To be submitted in the shape of Demand
Draft/Bankers Cheque issued in the favour of **M.D. BMSICL, PATNA, Payable At Patna.**

1.2.4. Prescribed period of work:- One Month.

1.2.5. Cost of tender document: -Rs 10,000 (Non Refundable)

DGM (Projects)
BMSICL, Patna.

G.M.(Projects)
BMSICL, Patna.

निविदा आमंत्रण सूचना संख्या-BMSICL/Infra/09-2013 दिनांक-21/10/2013

(केवल ई-टेंडर पद्धति के अनुसार वेबसाइट- www.eproc.bihar.gov.in पर)

प्रबंध निदेशक, बिहार चिकित्सा सेवाएँ एवं आधारभूत संरचना निगम लिमिटेड, पटना द्वारा बिहार चिकित्सा सेवाएँ एवं आधारभूत संरचना निगम के वर्तमान परिसर के विस्तार हेतु भवन का Renovation & Interior Decoration हेतु निविदा आमंत्रित की जाती है। कोई भी संवेदक जो केन्द्रीय/राज्य सरकार/लोक उपक्रम में समुचित श्रेणी में निबंधित हो निविदा में भाग ले सकते हैं।

क्रम संख्या	कार्य का नाम	परिसर का क्षेत्रफल	अग्रधन की राशि (रु० में)	परिमाण विपत्र का मूल्य (रु० में)	कार्य समाप्ति की अवधि
1.	बिहार चिकित्सा सेवाएँ एवं आधारभूत संरचना निगम लिमिटेड, पटना के वर्तमान परिसर के विस्तार (तीसरा तल्ला, बिस्कोमान टॉवर, गाँधी मैदान, पटना) हेतु भवन का Renovation & Interior Decoration कार्य	2700 वर्गफीट	150000	10000	एक माह

2. कार्य के संबंध में विस्तृत जानकारी एवं शर्त वेबसाइट www.bmsicl.gov.in अथवा www.eproc.bihar.gov.in पर प्राप्त की जा सकती है।

3. निविदा आमंत्रण सूचना निर्गत करने वाले पदाधिकारी को बिना कारण बताए निविदा की तिथि विस्तार या रद्द करने का अधिकार सुरक्षित होगा।

ह०/—
प्रबंध निदेशक
BMSICL, पटना

Tender Schedule

1. विज्ञापन निर्गत करने की तिथि— 21/10/2013
2. परिमाण विपत्र प्राप्त करने (डाउनलोड)— 28/10/2013 से 4/11/2013 को 15:00 बजे अपराहन्
की अवधि एवं समय तक (सिर्फ वेबसाईट www.eproc.bihar.gov.in पर)।
3. प्री-बिड मीटिंग की तिथि, समय एवं स्थान— 1/11/2013 को 15:00 बजे अपराहन् निगम के
कार्यालय में ।
4. निविदा प्राप्ति (अपलोड) की अंतिम तिथि एवं समय— 5/11/2013 को 15:00 बजे तक वेबसाईट
www.eproc.bihar.gov.in पर ।
5. निविदा के साथ संलग्न कागजात एवं टेन्डर फी— 6/11/2013 को 15:00 बजे तक बिहार चिकित्सा सेवाएँ एवं
जमा करने की तिथि एवं समय आधारभूत संरचना निगम लिमिटेड, पॉचवा तल, बिस्कोमान
भवन, गॉधी मैदान, पटना के कार्यालय में ।
6. तकनीकी बिड खोलने की तिथि एवं समय— 6/11/2013 को 15:30 बजे तक वेबसाईट
www.eproc.bihar.gov.in पर ।
7. वित्तीय बिड खोलने की तिथि एवं समय— बाद में सूचित की जाएगी केवल वेबसाईट
www.eproc.bihar.gov.in पर ।
8. निविदा खोलने का स्थान— निगम के कार्यालय में ।
9. निविदा की वैधता अवधि— 120 दिन ।
10. परिमाण विपत्र का मूल्य जो निविदा सूचना में में अंकित है लौटाया नहीं जाएगा । परिमाण विपत्र एवं वांछित अग्रधन
की राशि किसी भी राष्ट्रीयकृत बैंक द्वारा निर्गत बैंक ड्राफ्ट के माध्यम से स्वीकार किया जाएगा जो BMSICL, Patna के
नाम से निर्गत एवं पटना में भुगतये हो ।
11. कार्य के संबंध में विस्तृत जानकारी एवं शर्त वेबसाईट www.bmsicl.gov.in अथवा www.eproc.bihar.gov.in
पर प्राप्त की जा सकती है ।
12. निविदा आमंत्रण सूचना निर्गत करने वाले पदाधिकारी को बिना कारण बताए निविदा की तिथि विस्तार या रद्द करने
का अधिकार सुरक्षित होगा ।

प्रबंध निदेशक
BMSICL, पटना

CHAPTER-II

General Rules

- 2.1 The Tender will be received in two bid system. The envelope containing the Technical Bid will be opened on specified date & time in the presence of Tenderer or their authorised representative/ agent as mentioned in the NIT.
- 2.2 The Complete tender with all its enclosures shall be kept in sealed or closed envelope and dropped in tender box as indicated in N.I.T. The tender document received after the date and time as stipulated in NIT shall be out rightly rejected.
- 2.3 The tenderer should mention in his forwarding letter a list of all the documents submitted & Their page Number with the tender.
- 2.4 The tender shall contain the full name, address of office, residence and place of business of person or persons filling the tender. In case there is subsequent change in address it must be informed to the M.D, BMSICL, PATNA by registered post with A/D.
- 2.5 All the pages of the tender document including general rules and special conditions must be initialled at the lower left hand corner as person and wherever required in the tender or person holding power of attorney authorised to sign on behalf of the partners of firm before submission of the tender.
- 2.6 In the event of the tender being submitted by a firm it must be signed by authorised partner. The power of attorney authorizing him to do so must be produced on demand. All signatures should be dated.
- 2.7 The rates quoted by the tenderer shall be inclusive of income tax, sale tax and any other provincial or Central taxes applicable at that time.
- 2.8 The tenderer shall be presumed to have carefully examined the conditions of the contract and specification of the work. The tenderer will also be deemed to have inspected the work site and have satisfied herself/himself/themselves independently as to the nature of the site and practicality of all works, available road, means of accommodation that may be required for the temporary purpose in connection with the contract work, availability of construction materials, location of work site including its approach and other factors like availability of skilled, semi skilled and unskilled labour, other resources etc. The lack of necessary knowledge will be at the risk and cost of tenderer.

- 2.9 Bihar Building construction department specifications (BBCD) shall be followed during execution of works. Where BBCD specification is not available, relevant BIS specification shall be followed.
- 2.10 The tenderer shall submit a detailed sequenced construction programme of the works. Procurement of materials after award of the work, which shall be a part of the agreement.
- 2.11 The Contractor shall make necessary arrangements for the security of staff, materials and labourers, Service road etc. at site at his own cost.
- 2.12 All labourers are to be paid as per minimum wages Act in force and as revised from time to time during the construction of work.
- 2.13 The contractor will provide labour- huts, drinking water and medical facilities to labourers at the site and keep the site clean at his own cost.
- 2.14 The tenderer must return all the tender papers duly signed on each page while submitting the tender, failing which the same may be considered invalid.
- 2.15 On the receipt of written order from the M.D, BMSICL, the successful tenderer will first deposit the balance amount of initial security deposit (ISD) within the specified period and then enter into an agreement with the authorised representative of M.D,BMSICL on the basis of the stipulation in the approved tender documents along with negotiated terms as mutually agreed upon before issue of work order. Written order to commence the work shall be issued by the M.D, BMSICL Patna or his authorised representative.
- 2.16 The contractor shall make all necessary arrangement such as water, lights etc. required for the work.
- 2.17 Agreement will be drawn on Bihar public works Department from no. – F2 on approved Bill of Quantity.
- 2.18 NIT with general rules and special conditions will form a part of contract document.

D.G.M.(Projects)
BMSICL, Patna.

G.M.(Projects)
BMSICL, Patna.

CHAPTER-III

Preparation of Bid, Bid Opening and Evaluation

- 3.1 The tender is based on “Two Bid System” The first bid is “**TECHNICAL BID**” and the second is called “**FINANCIAL BID**”.
- 3.2 Submission of Bid: The bid shall be submitted electronically on **www.eproc.bihar.gov.in** in two parts, Technical and Financial bid. The bid submitted in any other form will be rejected.
- 3.3 The Tender committee will first open the Technical bid at the time and date as stipulated in NIT in the presence of tenderes or, their authorized representatives who may choose to be present. The financial bid having details of price offer of technically qualified contractors as per NIT will be opened by the Tender Committee of the corporation on the date and time informed to the contractor on **www.eproc.bihar.gov.in** in presence of him or his authorized representatives.

3.4 **Examination of bid and determination of responsiveness:**

Prior to opening of the financial bids, the TENDER COMMITTEE of the corporation will examine the technical bids to determine whether each bid:-

(a) Meets the eligibility criteria as stipulated in NIT and qualification criteria as stipulated in 3.6.1

(b) Has been properly signed

(c) Is accompanied by the requirements of the bidding document.

A substantially responsive bid is one, which conforms to all the terms, conditions and specifications of the bidding document 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 work,

(b) Which limits in any substantial way or is inconsistent with the bidding document, the corporation’s rights or the bidder’s obligations under the contract or

(c) Whose rectification would affect unfairly the competitive position of other bidders presenting substantial responsive bids. The financial bids of selected bidders as per NIT and other criteria will be opened by the TENDER COMMITTEE of the corporation, after prior information to the tenderers about the time and date. The tenderers or their authorized representatives may be present at the time of opening of financial bid.

If a bid is not substantially responsive, it may be rejected by the corporation and may not subsequently be made responsive by correction or withdrawal of the non- confirming deviation or reservation.

3.6 Qualification of the bidder:

3.6.1 All tenderers shall include the following information and documents with the Technical Bids:-

- (a) Readable photo attested copy (Duly Notarized) of original documents regarding their constitution, status, registration and principal place of business, written power of attorney of the signatory of the bid with the seal of the firm/ company. In the case of proprietary firm it shall be signed by the proprietor of the firm with full name of his firm and current address. Relevant information in blank space of Para 4.2.1 to 4.2.5 of chapter IV shall be filled up clearly by the tenderers.
- (b) Earnest money – The tenderer shall furnish requisite amount in required shape as specified in NIT.
- (c) The Contractor/ firm should have an average Annual Turnover not less than the amount of Rs 100.00 Lakh in the last three Financial Year i.e 2010-11(Audited), 2011-12 (Audited), 2012-13 (Audited/ Provisional).
- (d) The Contractor / firm should have Executed/ Completed at least One Renovation/Interior Decoration work, amounting not less than 60.00 Lakh during last three Financial year (i.e 2010 – 2011 to 2012-13) as a prime contractor. The details of which shall be submitted in the format specified in Para 4.2.6 of chapter IV . The contractor should also submit digital photograph of completed work along with the tender document. Name of clients who may be contacted for further information on the information given in the tender document with their telephone no. Fax no. and complete postal address with Pin Code shall also be given.
- (e) Readable photo attested copy of Pan Number issued from I.T. Dept. shall be submitted.
- (f) Readable photo attested copy of Bihar Sale Tax Department Tin Number Should be submitted. (The contractor registered outside Bihar State shall submit an Affidavit that they would get registered in Bihar Sale Tax Department before agreement of work).
- (g) The Tenderer should submit an affidavit (Executed from 21.10.2013 to date of tender) that the documents submitted by him is true & correct to the best of his knowledge & belief. If any of the documents being found false the corporation reserves the right to cancel the contract at any stage or initiate legal action against him.

3.6.2 Additional Qualification Information : -

- (a) Details of works in hand, contractual commitments shall be submitted in the format specified in Para 4.2.8 of chapter IV . Name of clients who may be contacted for further information on the information given in the tender document with their telephone no. Fax no., and complete postal address with Pin-Code shall also be given.
- (b) Information on litigation history in which tenderer is involved shall be submitted in the format specified in Para 4.2.9 of chapter IV.

- (c) Details of equipments (owned/ leased) essential for carrying out the works must be submitted in the format specified in para 4.2.10 of chapter **IV**.
- (d) Qualification and experience of key person proposed for administration and execution of the contract shall be submitted in the format specified in Para 4.2.11 of chapter **IV**.
- (e) Readable photo attested copy of contract registration letter with class, No. & Date with value of works up to which he is entitled to submit the tender. Telephone No. And Fax No. With complete Postal Address and Pin - Code of the registering authority shall also be given.

3.7 Criteria for Disqualification:-

- a) If any of the above as mentioned in Para 3.6.1 is not complied with.
- b) If Tenderer / Firm have submitted misleading or false representation in the tender document.
- c) Report of poor performance such as abandoned the contract, inordinate delay in completing the work.

3.7.1 The CORPORATION reserves the right to reject any or all the Bids without assigning any reasons.

3.7.2 Time shall be the essence of the agreement.

D.G.M.(Projects)
BMSICL, Patna.

G.M.(Projects)
BMSICL, Patna.

CHAPTER-IV
QUALIFICATION INFORMATION AND LETTER OF TECHNICAL BID.

4.1 LETTER OF TECHNICAL BID BY THE INTENDING TENDERER

To,

MD
BMSICL (PATNA)

Sub: - Tender for Renovation and Interior Decoration for Extension of BMSICL Office at 3rd Floor Biscomaun Tower, Gandhi Maidan, Patna Vide NIT No. BMSICL/Infra/09-2013.

Sir,

We are Submitting The Tender Bid for the above work in Two Bid System as describe below:-

- I. I/We have read the instructions appended with the tender document and we understand that if any false information is detected at a later date any agreement made between me/ ourselves and the **BMSICL** on the basis of the information given by me/us may be treated as invalid by the **BMSICL**.
- II. All the information and data furnished herewith the tender document are correct to the best of my/ our knowledge.
- III. I/We also agree that we have no objection if enquiries are made about construction work and its related area regarding all projects and works listed by us in the accompanying sheets or any other enquiry on the information furnished herewith in the tender document.
- IV. Amount of Rs. _____ (In words _____) towards earnest money required is deposited in shape of Demand Draft/Bankers Cheque no:- _____ Dt.-----

PLACE:

Signature of Tenderer.....

Name.....

DATE:

Address.....

Organisation.....

4.2. QUALIFICATION INFORMATION:-

The information to be filled in by the bidder in the following pages will be used for the purpose of examination of bid and determination of responsiveness.

4.2.1 Constitution or legal status of the bidder (attach copy):-

4.2.2 Place of registration:-

4.2.3 Principal place of business:-

4.2.4 Power of attorney of the signatory of the bid (attach letter):-

4.2.5 Total value of similar work, performed in the last three fin year (in Rs Lakh)

(a)Year-2010-11:-

(b)Year-2011-12:-

(c)Year-2012-13:- _____

(Attach payment certificate to support claim)

4.2.6 Work performed as prime contractor (in the same name)on works of a similar nature over the last three years in the format attached with this document as TABLE-1

4.2.7 Turn over during last three years as prime contractor in the format attached with this document as TABLE-2.

4.2.8 Details of present commitment of the tenderer contractor in the format attached with this document as TABLE-3.

4.2.9 Information on litigation history in which tenderer is involved in the format attached with this document as TABLE-4.

4.2.10 Details of equipment essential for carrying out the works in the format attached with this document as TABLE-5.

4.2.11 Qualification and experience of key person proposed for administration and execution of work in the format attached with this document as TABLE-6.

TABLE – 1**Renovation/Interior Decoration Work Performed Information**

Sl.N O.	NAME OF WORK	NAME OF DEPARTMENT	AGREEMENT NO.	AGREEMENT AMOUNT (RS. IN LAKH)	DATE OF WORK ORDER	STIPULATED PERIOD OF COMPLETION	PAYMENT MADE SO FAR (RS. IN LAKH)	ACTUAL DATE OF COMPLETION	REMARKS EXPLAINING REASON OF DELAY IN WORK COMPLETED
1	2	3	4	5	6	7	8	9	10
1									
2									
3									
4									
	TOTAL								

NOTE : - Photo Attested copy of Completion / Payment Certificate (Self Attested) to be attached along with photograph of completed work (Attach separate sheet if required).

(Signature of Tenderer)

TABLE – 2**TURN OVER DETAILS**

Sl.NO	FINANCIAL YEAR	TURNOVER (IN RS LAKH)	REMARKS
1	2	3	4
1	2010-11		
2	2011-12		
3	2012-13		
	TOTAL		

NOTE : - Photo Attested copy (Self Attested) of Audited/Provisional Balance sheet to be enclosed (Attach separate sheet if required).

(Signature of Tenderer)

TABLE – 3

DETAILS OF PRESENT COMMITMENT (WORK IN HAND)

SI. NO.	NAME OF WORK	NAME OF DEPT. & PLACE	AGREEMENT NO.	AGREEMENT AMOUNT (RS. IN LAKH)	DATE OF WORK ORDER	STIPULATED PERIOD OF COMPLETION	PAYMENT MADE SO FAR (RS. IN LAKH)	VALUE OF WORKS REMAINING (RS. IN LAKH)	ANTICIPATED DATE OF COMPLETION
1	2	3	4	5	6	7	8	9	10
1									
2									
3									
4									
	TOTAL								

NOTE : - Photo Attested copy (Self Attested) of Completion / Payment Certificate to be attached. (Attach separate sheet if required).

(Signature of Tenderer)

TABLE : - 4

DETAILS OF DISPUTE

SI. NO	OTHER PARTIES NAME & ADDRESS	CASUE OF DISPUTE	AMOUNT INVOLVED	REMARKS SHOWING PRESENT STATUS
1	2	3	4	5
1				
2				
3				

NOTE : - In case of no dispute, the tenderer must Submit a Notarized Affidavit regarding the same. (Attach separate sheet if required).

(Signature of Tenderer)

TABLE: - 5

DETAILS OF EQUIPMENT.

SI. NO	NAME OF EQUIPMENT	CAPACITY	OWNED/LEASED	QUANTITY	REMARKS
1	2	3	4	5	6
1					
2					
3					
4					
5					
6					

NOTE : - In support of the above information an affidavit regarding ownership of such equipment shall be submitted by the tenderer.
(Attach separate sheet if required).

(Signature of Tenderer)

TABLE : - 6

DETAILS OF KEY PERSON PROPOSED FOR ADMINISTRATION AND EXECUTION OF WORK

SI. NO	POSITION	NAME	QUALIFICATION	YEAR OF EXPERIENCE	REMARKS
1	2	3	4	5	6
1.					
2.					
3.					
4.					
5.					
6.					

NOTE : - In support of the above information an affidavit regarding Availability of such person shall be submitted by the tenderer.
(Attach separate sheet if required).

(Signature of Tenderer)

CHAPTER - V

SPECIAL CONDITIONS

- 5.1** This tender is based on two envelopes system of contracts for which the information /requirement are detailed in chapter-III these stipulations as contained in chapter –III shall form part of the special condition of the contract and shall prevail in any ambiguity and the contradictions.
- 5.2** A site order book issued by the E/I shall be kept at the site office of the department and shall be in the custody of the contract. All entries there in shall be signed by the engineers and the contractor or his authorised representative. The site order book shall not be removed from the work site except with written permission of E/I. The contractor or his authorised representative shall be bound to take note of all the instruction and the direction meant for the contractor as entered in the site order book without having to be called on separately to note them.
- 5.3** The contractor should always remain available on the work site, but when it is not possible for him he must appoint a representative who would be duly authorised by the contractor to received and the carry out instruction of authorised representative and corporation.
- 5.4** If the royalty clearance certificate for the materials used in work is not produced with the bill, royalty will be deducted by the corporation from the bill of the contractor at the rate prevailing at the time of execution of work to which the bill relates.
- 5.5** The contractor shall furnished sufficient plant, equipment and labour. The labour force shall work for such hours and shifts as may be necessary to maintain the progress schedules. No extra payment shall be made for this.
- 5.6** The contractor shall make adequate for the safety of the labourers during execution of work and shall be guided by the labour laws prevailing in Bihar.
- 5.7.** The contractor should gate the sample of the materials approved by the E/I before collecting for use in work. The sample in sealed glass-jars which will be provided by contractor shall be kept in the custody of the E/I.
- 5.8** The contractor shall have to get the strength of cement concrete (both plain & reinforced) tested for each days casting as per BIS codes. Achievement of the prescribed cubes strength is must. Concrete having lower value shall be rejected under specific order of the competent authority. The cost of concrete cube moulds curing, carriage of cubes to and from the testing laboratory and all other incidental charges incurred in this regard shall be borne by the contractor. The contractor shall if required by the E/I, arrange for testing of material of a particular portion of work at his own cost for proving their quality, soundness and sufficiency. If the quality of material, appears to be inferior or the portion of work is found to be defective or unsound the contractor may be asked to removed and / or dismantle and re-execute the same at his own cost.
- 5.9** All rejected material will have be removed from site by the contractor after their rejection within three days for which EI should give necessary order in writing. Otherwise EI will dispose it off in any way he thinks fit and also recover the cost form the contractor for such removal after lapse of three days time.
- 5.10** If the actual lead of material like stone, metal stone Chip, boulder, bricks, sand and moorum etc. Are found to be less, payment will be made on proportionately reduced rate. It will be mandatory to obtain prior consent of the authority, who his approving the tender before commencement of supply of such material on increased lead.
- 5.11** After completion of work the contractor will remove all debris built up during construction. He will leave the site clean at his on cost.

- 5.12** The corporation reserves the right of omitting certain portion certain of the scope of work and suspending the contract or changing it, if considered necessary at the subsequent stage.
- 5.13** The following shall not be paid extra and the tenders rates shall be inclusive of these:-
- (a) Site clearance such as cleaning of shrubs, bush, wood under growth and small tress.
 - (b) Construction of temporary site office.
 - (c) Bailing out rain water/and or surface water in the excavated foundation trenches are filled up by these during the period of construction.
 - (d) Making vats, platform etc.
- 5.14** The contractor has to use his on machinery for completion of the work within the time stipulated in the contract. The carriage of machinery to different site under this contract shall be the responsibility of the contractor and all expenses in this regard will be borne by him.
- 5.15** CLAIMS shall not be admissible under flowing circumstance:-
- (a) Extra item of works done without written order of E/I.
 - (b) In case of sudden fluctuation and/or increase in rate of labour ,material, royalty, various taxes, railway fright, fuel, lubricants, carriage cost at any stage of the work.
 - (c) Short supply and/or non-supply of materials and equipments.
 - (d) Non-availability of labour of any category required for the work.
 - (e) Delay due to change or modification in design, drawing, and specification etc. At any stage of work.
 - (f) Loss sustained due to:-
 - (i) Act of enemies including agitation by public riot.
 - (ii) Transportation and procurement difficulties.
 - (iii) Natural circumstance/calamites.
 - (iv) Any other circumstances which is beyond human control.
- 5.16** Contractor will have to rectify any defect developed within six month from the date of completion of the work at his own cost. Contractor will be fully responsible regarding the quality and specification of the work. To this extent the clause para-16 f2 all condition of contract remains amended.
- 5.17** Necessary haul-roads and roads to water sources connected with work shall be born by the contractor at this own cost.
- 5.18** The Various work shall be done true to line level and grade. The periodical checking by the supervising engineer shall not absolve the contractor of his responsibility regarding accuracy. In case of any deviation or discrepancy in line, level or grade the contractor shall mend the discrepancy at his own cost and without any compensation for such additional work whatsoever.
- 5.19** The contractor shall not set fire to any standing jungle, trees, bush, wood, grass etc. Without permission by E/I
- 5.19.1** When such permission is given, the contactor shall take necessary measures to protect the surrounding and prevent any damage to the properties in and around.
- 5.19.2** All damage caused by the spreading of such fire shall be made good by the contractor within a period specified by the E/I. at his own cost failing which the amount of damage shall be deducted from the contractor's bills. The amount of damage shall be decided by the E/I.

- 5.20** The contractor shall be bound to execute any additional work concerned with the project beyond the agreement, if required for the work under the specific order by the competent authority /Engineer-in-charge.
- 5.21** Validity period of the Bid / Tender will be up to 180(one hundred eighty) days from the date of Bid / Tender.
- 5.22** Recovery for sale tax and income tax will be done as per the prevailing rules of the Govt. during the period of contractor and on the date of payment.

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BMSICL,Patna.

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CHAPTER - VI

TECHNICAL SPECIFICATIONS

VI- SPECIFICATIONS

Material and methods of construction for all civil works shall be as per relevant Indian standard specification, part of which are incorporated in the standard specification of P.H.E.D. and P.W.D. Bihar and all will be followed during the execution of the work. The work shall be executed as per the guidelines and provisions of B.I.S All materials shall conform to Indian standard code of practice, National Building Code and CPHEEO manual to maintain quality of work.

6.1 General

All material shall be best of their kind and shall confirm to the relevant latest Indian standard.

All materials shall be of approved quality as per samples and from origins approved by the Engineer in Charge. A set of specimen sample of all approved materials shall be kept in sealed container or otherwise at site, cost of which is to be borne by the contractor.

6.2 Bricks

Only 1st class kiln burnt bricks shall be used unless otherwise specified. They shall be of a uniform deep cherry colour, thoroughly burnt, regular in shape with sharp and square arris and they must emit a clear ringing sound on being struck. They must be free from cracks, chips, flaws, stones or lumps of any kind and they shall not absorb water more than one seventh of their own weight after soaking them in water for 15 minutes. The bricks shall show no sign of efflorescence either dry or subsequent to soaking in water.

6.3 Sand.

The source from which sand is to be obtained shall be subject to the approval of Engineer-in – charge. The sand shall be clean, sharp and gritty to touch and be freed from soil and other impurities by washing. The sand shall be washed to such a degree that when a handful is mixed with clean water in a glass and allowed to stand for an hour the precipitate of mud over the sand shall not exceed 5%. The sand should conform to IS 382-1982 for fine and coarse aggregates from natural sources.

6.4 Coarse Sand

It is to be screened through a sieve of 64 meshes to the square inch so as to exclude large particles from the work. The fineness modulus shall not be less than 1.0.

6.5 Fine sand

It is to be screened through a sieve of 64 meshes to the square inch so as to exclude large particles from the work. The fineness modulus shall not be less than 2.5.

6.6 Stone chips

It shall be obtained from crushing trap quartzite or hard stones and from quarries approved by Engineer –in charge. It shall be of approved quality and proper grade. It shall pass through ¼ “mesh and retained on ¼ “mesh. It shall be free from dirt, leaves, clay and any organic matter. The material confirming generally to IS 383-1983 for coarse and fine aggregates from natural

sources or IS 515-1959 for natural and manufactured aggregates for use in mass concrete with latest revisions.

6.7 Cement

Ordinary Portland cement conforming I.S.S. 269-1989 of Klyanpur Cement, J.P. Cement/Birla Cement/Ambuja Cement /Ultra- Tech/ shall be used after due approval of the Engineer-in-charge. All cement shall be fresh when delivered. Cements of different types are not to be mixed with one another consignments shall be used in the order of delivery. Admixture if any shall be used only after approvals of Engineer in charge.

6.8 Reinforcement

Steel reinforcement shall be of mild steel of tested quality conforming to I.S.S.- 432-1966/H. Y. S. D. bars conforming to ISS-1786/1779-of SAIL/TATA/VIZAG make.

All the reinforcement shall be clean and free from rust, mild scales, dust, paint, oil, grease, adhering soil or any other material or coating that may impair the bond between the concrete and the reinforcement, or cause corrosion of the reinforcement or disintegration of concrete. Neither the size nor length of bar or wire shall be less than the size or length described in the schedule or elsewhere and the length shall not be more than 50 mm in excess of the length as described.

Welded joints in reinforcement may be used but in case of important connection, tests shall be made to prove that the joints are of the full strength of bars connected, welding of reinforcement shall be done in accordance with the recommendation of the relevant Indian standard for welding mild steel bars used in the reinforced concrete construction.

Bending and overlapping, placing in position, fabrication, binding, reinforcement with wire of approved gauge shall be done as per I.S. 432-1960 (revised) and I.S. 1786-1996 and I.S. 2502 (revised). Handling and storage of material for concrete or RCC should be followed as per I.S. 4082-1977.

6.9 Water

The water to be used in making and curing of concrete, mortar etc. shall be free from objectionable quantities of silts, Organic matter, injurious amount of oils, acid, salt and other impurities etc. as per I.S.-456-1978. The Engineer-in-charge or his authorized representative will determine whether or not such quantities of impurities are objectionable. Such comparison will usually be made by comparison of compressive strength, water requirement, time of setting and other properties of concrete. Permissible limit for solids when tested in accordance with I.S. 3025-1964. Shall be as tabulated below.

1. Organic	Permissible limit for solids Maximum permissible Limit. 200mg/litre
2. Inorganic	3000mg/litre
3. Sulphate (As So 4)	500mg/litre
4. Chloride (As Cl.)	2000mg/litre for P.C.C. and 1000mg/litre for R.C.C. work
5. Suspended Matter	2000mg/litre.

If any water to be used in concrete, suspected by the engineer-in charge/or his authorised representative of exceeding the permissible limits of solid, sample of water will be obtained and get it tested by Engineer –in- charge in accordance with IS 3025-1964.

6..10 Cement Mortar

The mortar shall consist of cement and sand mixed in proportion defined in relevant schedule item for various item of work. Only measured quality shall be used. The sand shall be shovelled in a wooden measure on a clean masonry platform, after removing the measure box and spreading out sand if necessary, the cement (in required proportion) shall be emptied on the top of sand. The sand and cement shall be then turned over with shovels once dry and made into the form of a hollow cone; into this water can be poured and the whole shall then be turned over completely twice. The colour and consistency shall at this stage be quite uniform, if not further turning shall be done. Water shall be added by measured quantities. Only such quantities of mortar shall be mixed at one times can be used at once before it can set .No mortar ,which has once caked or begun to set , shall be used, not shall such motor be remixed ;but it shall be removed from the site of the work immediately .

6.11 Cement concrete

The concrete shall consist of an aggregate of the proportion by volume defined in relevant schedule item or work. Only measured quantity shall be used. The aggregate shall consist of stone ballast of quantity approved by Engineer-in-charge and shall consist of graded size 20mm and down ward as per PWD specification or the size mentioned in the item description.

6.11.1 Laying:

The cement sand and stone chip shall be mixed properly in mechanical mixer in such a manner as to avoid loss of water. The concrete shall be mixed for a minimum period of 2 minutes or until it is of even colour and uniform consistency throughout .As soon as the concrete is mixed it should be removed to the work in iron vessels as rapidly as practicable .The concrete laid will be vibrated for compaction by the vibrators. Slum test will be carried at site during execution of work.

6.11.2 Curing:

The concrete shall not be disturbed and shall be kept thoroughly damped by means of wet matting and sand until it shall have become thoroughly set and hard enough to prevent its drying and cracking.

6.11.3 Form:

Contractor shall furnish on the site of work sufficient number of centring, moulds or templates for its expeditious execution. The forms shall be made in such a way and of such materials as will ensure a smooth surface on the finished concrete. Form and cantering shall be left in place until the concrete has set sufficiently to permit the removal without danger to the structure.

6.12 Brick masonry work

The brick work shall consist of brick and mortar in accordance with general specification and plans.

6.12.1 Soaking bricks:

All bricks shall be soaked in clean water in tank for a period of at least twelve hour immediately before use. The contractor shall provide at his expense tanks of sufficient capacity to admit of the simultaneous immersion of bricks for the work it normal rate of progress.

6.12.2 Laying:

All the best shaped uniformly coloured bricks shall be picked out and used for face work without any payment to the contractor. All brick work shall be constructed in English bond and shall follow the type bond junctions etc. All courses unless otherwise specified or ordered by the Engineer in charge shall be truly horizontal and the walls shall be taken up truly plumb. Mortar joints shall never exceed 10mm in thickness and this thickness shall be uniform throughout. Vertical joints in alternate course shall not come directly over one another. The joints shall be raked out not less than 12mm deep when the mortar is green so as to provide proper key for the plaster or pointing to be done. Each face brick shall be set with both bed and vertical joints quite full of mortar. No damaged or broken brick shall be used in any part of the work except such as may be cut to size for closing the course. Closers shall be clean out to size as indicated in English bond and shall be situated near the end of walls. The masonry shall be carried up regularly and no step shall be allowed more than 60cm. Where the masonry of one part has to be delayed, the work must be raked back at an angle not exceeding 45 degree Angles and junctions. At all angles forming the junction of walls, the brick shall at each alternate course be carried into their respective walls so as to thoroughly unite the work with English bond. Care shall be taken that when a brick is left out to allow support for the scaffold pole on the wall face, such brick shall always be a header and not more than one header for each pole shall be left out.

6.12.3 Scaffolding:

Proper scaffolding shall be provided whenever necessary having two sets of vertical supports and shall be subject to the approval of the Engineer in charge; who may order the contractor to alter or strengthen the scaffolding if he considers it necessary, without thus becoming responsible either for the safety of the work or workmen or for any additional payment. Holes shall be made good by bricks to match the face work when scaffolding is removed.

6.12.4 Curing:

All brick work shall be kept well watered for 14 days after laying.

6.13 Reinforced Cement Concrete:

All R.C.C. work shall be of the grade M-15, M 20, M25, M-30 as per design requirement and as given in specifications. The materials will be measured when dry. The stone chips should be thoroughly washed in clean water and stacked. Vibrator will be used for all R.C.C. and P.C.C. work. The aggregate shall consist of stone ballast of quality approved by Engineer-in-charge and shall consist of graded size 20mm and downwards as per PWD specification or the size mentioned in the item description.

6.13.1 Laying:

Cement, sand and stone chips shall be mixed properly in a mechanical mixer in such a manner as to avoid loss of water. The concrete shall be mixed for minimum period of 2 minutes or until it is of even color and uniform consistency throughout. As soon as the concrete is mixed it should be removed to the work in iron vessels as rapidly as practicable. The concrete laid will be vibrated for compaction by vibrators. Slump test will be carried at site during execution of work.

6.13.2 Curing:

The concrete laid should not be disturbed and shall be kept damped by means of wet matting and sand until it shall have become thoroughly set and hard enough to prevent its drying and cracking.

6.13.3 Forms:

Contractor shall furnish on the site of work sufficient number of centring for the moulds or templates for its expeditious execution, the forms shall be made in such way and of such material as will ensure a very smooth surface on the finished concrete. Forms and centering shall be left in place until the concrete has set sufficiently to permit the removal without danger to the structure.

6.13.4 Reinforcement:

Steel bars for reinforcement concrete shall be such shape to afford an approved mechanical bond with concrete to ensure intimate contact between steel and concrete. Steel reinforcement shall be either mild steel of tested quality conforming to IS432-1996 or cold worked steel high strength deformed bars as per IS-1786-1979 in strength grade Fe-500 or hot rolled high yield strength steel deformed bar with minimum yield strength of 500 N/mm² as per IS-1939-1966(Amended 1968). Reinforcement bars will be rejected if the actual weight very more than 5% from the standard weight. All bars must conform to the requirement of Indian standard specification. They shall be protected at all time before placed in the concrete from mechanical injury and the weather and when placed in the work, they shall be free from dirt, scales, loose or scaly rust, paint and oil. Bars which are to be embodied in concrete but remain exposed for sometime after being placed in the work shall, if directed be immediately coated with a thin grout of equal part of cement and sand. Bar shall be bent to the shape shown on the drawings and in conforming to approved templates. When bars are cut and bent on the work site the contractor shall employ competent men and provide the necessary appliances for the purpose. All steel shall be rigidly held in place with 18 gauge annealed steel wire, cement mortar (1: 2) cubes. M.S. Chair and spacer shall be used in order to ensure accurate positioning of reinforcement. All joints in steel reinforcement shall be overlapped. The length of overlap for tension and compression shall be as per the requirement of Indian standard specification. In water retaining structures a clear cover of 25mm over steel should be provided.

6.13.5 construction Joints

Construction Joints shall be provided, where directed approved by the Engineer –in-charge. Such joints shall be kept in minimum and shall be right angles to the direction of main reinforcement. In case of column and walls the joint shall be horizontal and 8 to 15 cm below the bottom of the beam or slab running into the column or wall head or below the anchor reinforcement of beam and slab coming into the column and wall and the portion of the column or wall between the stopping level and the top of slab shall be concreted with the beam or slab.

6.13.6 vertical Joints:

All the end of any days work or run of concrete, the concrete should be finished off against temporary shutter stop, which should be vertical and securely fixed. This stop should be removed as early as weather permits.

6.13.7 Horizontal Joints:

Horizontal Joints should be washed down two hours after a casting in the manner described above for vertical Joints .If the concrete has been allowed to hard excessively, the surface shall be chipped over its whole surface to dept: of at least 10mm and thereafter thoroughly washed. Before fresh concrete is added on the other side of a construction joints, the surface of the old concrete will be thoroughly wetted then covered with a thin layer of cement mortar (1:2).All the construction joints in all concrete structure having contact with water or soil shall be provided with approved PVC water stops on both side with hot asphalt or approved metallic strips.

6.13.8 Expansion Joints:

Expansion Joints shall be provided as per design and drawings and wherever directed by the engineer in charge, or where necessary as per standard specification and practice. The filler to be used shall be of approved material.

6.13.9Cube test:

Cube test for all RCC work of all components at all stages, shall be done in lab and its compressive strength should be within the allowable limit, at the contractor cost.

6.14 cements plaster:

12mm thick cement plaster in (1:4) proportion shall be applied on outside surface of all concrete works from 30cm below ground level up to top. The surface in contact with water will have 12mm thick cement plaster of not less than (1:3) Proportion with 3% water proofing compound. The concrete surface shall be properly hacked, washed, cleaned and applied with thick cement slurry before applying. All brick work unless otherwise specified will be plastered externally and internally with 12mm cement plaster (1:6) proportion. The plaster shall be protected from sun, rain and frost at the contractor's expense by such means as the Engineer in charge may approve. To protect the plaster from the sun, ordinarily the whole surface shall be covered with wet sacks. The contractor shall keep the plaster continuously waited for a period of seven days after application.

6.15Flooring

Except where in otherwise specified flooring will have minimum 15cm thick sand filling, one brick flat soling and 15mm thick dry rammed khoa beaten up to 112mm as base in ground floor and 25mm thick patent done flooring shall be provided over this base or as specified in B.O.Q.

6.16 Door and Window:

All the doors and windows shall be of good quality well seasoned and well- dressed Sal wood with oxidized iron fittings. All windows shall be provided with M.S.grill of approved design. Rolling shutter of approved make with pusher and pull operated properly fabricated with M.S. lathers including all accessories and necessary fitting of approved quality as per PWD specification will be provided in the pump house. All the doors and windows shall be paints with two coats of enamel paints over a coat of primer. The materials, the size, the shape and the fitting of doors and windows shall be approved by Engineer in charge before put in position.or as specified in boq.

6.17 Roof and Roof treatment:

R.C.C. Roof slab of adequate thickness shall be provided as per design. The roof shall be treated with suitable water proofing treatment as per specifications and provision in boq.

6.18 Weather coat / Snow cem wash:

All the building shall have two coat of synthetic weather coat of approved shade over a coat of cement primer including preparing the plastered surface smooth with sand paper, scaffolding, centring , etc all complete as per building specification or as per boq.

6.19 Painting:

All steel or wood shall have two coats of synthetic enamel paint over a coat of primer as specified by the manufacturer of the paint. The make, shade and color of the paints shall have to be approved by the Engineer –in-charge before use.

6.20 Pipe works

(i) All pipes, like D.I., C.I., P.V.C., G.I., M.S. etc will be of the best quality confirming to respective relevant I.S. codes specifications.

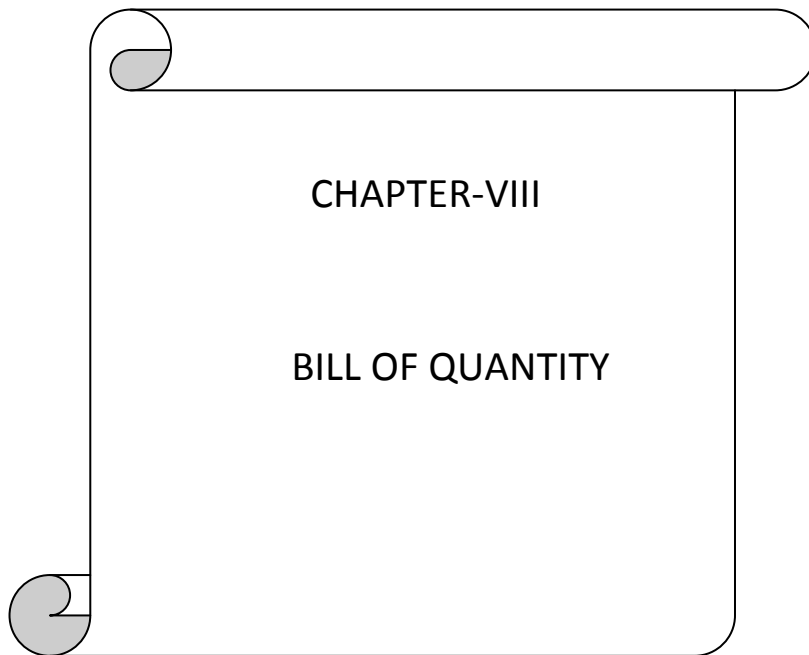
(ii) All pipes will be laid as per the provision of relevant BIS specifications.

6.21 Testing

The line of pipes after laying and jointing shall be tested to a pressure at least doubles that of working pressure labour for testing the pipes at his own expense.

6.22 Painting:

All exposed surface of pipe, specials valves, steel doors and windows, etc, shall two coats of synthetic enamel paint of approved shade over a coat of red oxide primer etc all complete as per approval and direction of the Engineer-in –charge.



CHAPTER-VIII

BILL OF QUANTITY