

**GOVERNMENT OF PUNJAB**

**Construction of High level bridge over Satluj River ( Including approaches )  
crossing Nurpur Bedi Bunga Sahib road at Sarai ka Pattan in Distt. Ropar**

Agreement No. ....

Name of Work : Construction of High Level Bridge Over  
Satluj River ( Including Approaches)  
crossing Nurpur Bedi Bunga Sahib road  
at Sarai ka Pattan in Distt. Ropar

Sale of Bidding : Period of Sale Upto 18-06-2008 Time : 3.00 P.M  
Document

In the office of Executive Engineer,  
Construction Division ,  
Punjab PWD B&R Branch,  
Ropar

**And**

General Manager, Punjab  
Infrastructure Development Board,  
SCO No 89-90, Sector 34-A  
Chandigarh.

Pre-Bid Conference : Date : 09-06-2008  
Time :11.00 A.M.  
Venue: Committee Room of Punjab  
Infrastructure Development Board,  
SCO No.89-90, Sector 34-A  
Chandigarh.

Last Date and Time for Receipt of Bids. Date: 19-06-2008 Time :13.00  
hours.

Place

In the Committee Room of Punjab

Time & Date of Opening Technical Bids : Date: 19-06-2008 Time: 15.30  
hours

Time & Date of Opening Financial bids : To be intimated later to Agencies those  
Pre qualified on the basis of contents of  
Envelop I (a) and I(b)

Place of Opening of Bids : Committee Room of Punjab  
Infrastructure Development Board, SCO  
89-90, Sector 34-A, Chandigarh 160034

Officer Inviting Bids. Chief Engineer (IP), Punjab PWD B&R Branch, Chandigarh.  
Through: Executive Engineer,  
Constn. Division PWD B&R Br.,  
Divn. PWD B&R Rupnagar.

Name of Work: Construction of High Level Bridge Over Satluj River ( Including Approaches) crossing Nurpur Bedi Bunga Sahib road at Sarai ka Pattan in Distt. Ropar

Cost : Rs. 4839.02 Lacs

Time Limit : 15 Months

Bid Security Required : Rs. 50.00 Lacs

Cost of Bidding Document : Rs. 10000/-

The bidding documents for the work of Construction of High Level Bridge Over Satluj River ( Including Approaches) crossing Nurpur Bedi Bunga Sahib road at Sarai ka Pattan in Distt. Ropar.

GR No. .... Dated.....  
Issued to M/s .....  
.....  
.....

Executive Engineer,  
Constn. Division PWD B&R Br.,  
Rupnagar.

**VOLUME – I**

**SECTION 1**

**INSTRUCTIONS TO BIDDERS  
(ITB)**

**Section 1: Instructions to Bidders**

**Table of Clauses**

	<b>Page No</b>		<b>Page No</b>
<b>A. General</b>		<b>D. Submission of Bids</b>	
1. Scope of Bid.	5	19. Sealing and marking of Bids.	14
2. Source of funds	5	20. Deadline for submission of Bids	15
3. Eligible Bidders	5	21. Late Bids	15
4. Qualification of Bidder	5	22. Modification and withdrawal of Bids	15
5. One Bid per Bidder	9		
6. Cost of Bidding	9		
7. Site Visit	9		
<b>B. Bidding Documents</b>		<b>E. Bid Opening and Evaluation</b>	
8. Contents of Bidding Documents	9	23. Bid opening.	15
9. Clarification of Bidding Documents	10	24. Process to be confidential	16
10. Amendment of Bidding Documents	11	25. Clarification of Financial Bids	17
		26. Examination of Bids and Determination of Responsiveness	17
		27. Correction of Errors	18
		28.	18
<b>C. Preparation of Bids</b>		29. Evaluation and Comparison of Financial Bids	18
11. Language of Bid	11	30. Deleted	19
12. Documents comprising the Bid	11		
13. Bid Prices	12	<b>F Award of Contract</b>	
14. Currencies of Bid and Payment	12	31. Award Criteria	19
15. Bid Validity	12	32. Employer's Right to Accept any Bid and to Reject any or all Bids	19
16. Bid Security	13	33. Notification of Award and Signing of Agreement	19
17. Alternative Proposals by Bidders	13	34. Performance Security	20.
18. Format And Signing of Bid	14	35. Advance Payment and Security	20
		36. Dispute Review Expert	20
		37. Corrupt or Fraudulent Practices	20

**(A) GENERAL****1. Scope of Bid**

- 1.1 The Employer (named in Appendix to ITB) invites bids for Construction of High Level Bridge Over Satluj River ( Including Approaches) crossing Nurpur Bedi Bunga Sahib road at Sarai ka Pattan in Distt. Ropar. (as defined in these documents and referred to as "the works") The bidders shall submit bid for the work as detailed in the table given in ITB.
- 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/ tenderers, bid/tender, bidding/tendering, etc.) are synonymous.

**2. Source of Funds**

- 2.1 The expenditure on this project will be met from the funds provided by Punjab Infrastructure Development Board.

**3. Eligible Bidders**

- 3.1 The bid is open to established and reputed Contracting Agencies who fulfill requirements laid down in Clause 4.8 of ITB.
- 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 Punjab Infrastructure Development Board or Punjab PWD B&R Branch or any other entity that has prepared the design, specifications, and other documents for the Project. 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.

**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 conceptual drawings/ structural drawings and charts, as necessary. The proposed methodology should include programme of construction backed with equipment planning and deployment duly supported with broad calculations and quality assurance procedures proposed to be adopted justifying their capability of execution and completion of work as per technical specifications, within stipulated period of completion.
- 4.2 Necessary documents for pre-qualification of potential bidders shall be included in envelope I(b) super scribed "Technical Bid Documents towards pre-qualification and GAD". The bidders shall submit following in addition to information detailed to Section 2:

- i) Copies of original documents defining the constitution or legal status, place of registration and principal place of business; written power of attorney to the signatory of the Bid to commit the Bidder.
- ii) List of similar works (Bridges/ROB's) completed during past seven years duly supported with performance certificate from authority for whom work has been completed and information shall include name of work, estimated cost, date of start and date of completion.
- iii) List of equipment and machinery available with documentary proof of ownership and machinery proposed for deployment for execution of work including details of hiring the machinery where proposed.
- iv) Evidence of access to or availability of credit facilities certified by the bankers equivalent of the estimated cash flow of Rs. 6.00 crore.
- v) Details of turnover for last five years in respect of construction works with audited balance sheet.
- vi) Undertaking that bidder would be able to invest an amount of Rs. 6.00 crore of the contract value of work during implementation of contract.
- vii) Proposal, if, any, for sub contracting of elements of work, costing not more than 10% of bid amount.
- viii) Authority to seek references from the Bidder's bankers.
- ix) Latest Income Tax Returns from concerned department.
- x) Affidavit of not having been debarred/black-listed by any Govt./Semi Govt. Organization/Corporation at any stage.
- xi) Affidavit that information being submitted is correct and true, and that any false information shall lead to disqualification at any stage.

4.3 Deleted.

4.4 The bidder could be an individual, Limited Company/ corporation, Proprietary firm, Partnership, Joint Venture or Consortium etc. However, in case of consortium, the lead member/partner will have to individually meet the pre-qualification criteria. In case of Joint Venture Company, the majority equity shareholder will have to individually meet the pre-qualification criteria.

4.5 A. Deleted.

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.

- (b) Availability for this work of personnel with adequate experience as required as per Annexure-II.
  - (c) Liquid assets and/or availability of credit facilities not less than amount indicated in Appendix to ITB.
- C. Deleted.

4.6 Deleted.

4.7 The bid capacity of the prospective bidders will be calculated as under:  
Assessed Available Bid capacity =  $(A * N * 2 - B)$

Where

A = Maximum value of Civil Engineering works executed in any year during the last three years (updated to the price level of year indicated in Appendix to ITB) 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.

B = value (updated to the price level of the year indicated in Appendix to ITB) of existing commitments and on-going works to be completed during the next 15 months (period of completion of the works for which bids are invited).

**Note:** The statement 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 Chief Engineer or equivalent.

4.8 The following table gives the criteria for pre-qualification of prospective bidders based on contents/ enclosures of envelope I (b). The financial bid vide envelop-II shall be opened in respect of agencies who would be pre-qualified for the purpose. The decision of Technical Committee of PIDB in respect of pre-qualification of agencies shall be final.

<b>Sr</b>	<b>Item</b>	<b>Bench Mark</b>
<b>. N o.</b> 1.	Experience in similar works	Should have successfully completed similar works (H.L. Bridge RCC/PSC as well foundation over perennial river) during last 7 years till date of submission of bid with either of the following : a) Three similar completed works costing not less than Rs.19.00 crores or b) Two similar completed works costing not less than Rs.24.00 crores or c) One similar completed work costing not less than Rs. 38.00 crores
2.	Turnover in similar activities last 5 years.	Estimated annual payments under the contracts in any one of last five years equal to Rs.96.00 crores or in each of the last three years equal to Rs. 38.50 Crore.
3.	Cash flow capability	Certificate from bank for an amount of Rs. 8.00 crores.
4.	Capability of key personnel	As per bidding document / DNIT
5.	Proposed work plan	Proposed methodology and programme of construction backed with equipment planning and deployment, and quality control procedure to be adopted.
6.	Equipment availability	As per annexure I of sub clause 4.5B (a)
7.	Litigation history	To be provided
8.	Bid capacity	As per bidding document / as per DNIT clause4.7 shall be more than Rs. 50.00 Crore
9.	Quality Assurance Mechanism	As per bidding document / DNIT
1 0.	Quantities executed of prescribed component in any one of the year during the last three/five years.	Deleted

4.9 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
- 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 Engineer / Employer.

## **5. One Bid per Bidder.**

5.1 Each bidder shall submit only one bid. A bidder who submits or participates in more than one Bid will cause all the proposals with the Bidder's 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 Engineer / Employer will in no case be responsible and liable for those costs.

## **7. Site Visit**

7.1 The bidder, at the Bidder's own responsibility and risk is encouraged to 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 of construction of the Works. The costs of visiting the site shall be at the Bidder's own expense.

The bidder may reassure himself at his own cost about the soil properties at the site. The Engineer / Employer shall not be responsible for any variation in soil strata from than given in this document.

## **(B) BIDDING DOCUMENTS**

### **8. Contents of Biding Documents**

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

<b>Section</b>	<b>Particulars</b>	<b>Volume No.</b>
	Invitation for Bids (IFB)	Volume I
1.	Instructions to Bidders	
2.	Qualification Information and others forms	
3.	Conditions of Contract	
4.	Contract Data	
5.	Technical Specifications	Volume II

6.	Form of bid	Volume III
7.	Bill of Quantities /Schedule of Payment (SI)	
8.	Securities and other forms / variation schedule S-II	
9.	Drawings	Volume IV
10.	Documents to be furnished by bidder	Volume V

8.2 One copy of each of the volumes I, II, III and IV will be issued to the bidder. Documents to be furnished by the bidder in compliance to section 2 will be prepared by him and furnished as Volume-V in two parts (refer Clause 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, Annexes and General Arrangement 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 26 hereof, bids which are not substantially responsive to the requirements of the Bid Documents shall be rejected.

**9. Clarification of Bidding Documents.**

9.1 A prospective bidder requiring any clarification of the bidding documents may notify the Engineer / Employer in writing at the Engineer's Address indicated in Appendix. The Engineer will respond to any request for clarification pursuant to Clause 9.2. Copies of the Engineer's response will be forwarded to all purchasers of the bidding documents including a description of the enquiry but without identifying its source.

**9.2 Pre-bid Meeting**

9.2.1 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.

9.2.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

9.2.3 The bidder is requested to submit any questions in writing to reach the Engineer / Employer not later than one day before the meeting.

9.2.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of inquiry) 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 by the Engineer exclusively through the minutes of the pre-bid meeting.

9.2.5 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

**10. Amendment of Bidding Documents.**

10.1.1 Before the deadline for submission of bids, the Engineer / Employer may modify the bidding documents by issuing addenda.

10.2 Any addendum thus issued shall be part of the bidding documents and shall be communicated in writing to all the purchasers of the bidding documents. Prospective bidders shall acknowledge receipt of each addendum in writing to the Engineer. The Engineer will assume no responsibility for postal delays.

10.3 To give prospective bidders reasonable time in which to take an addendum / corrigendum into account in preparing their bids, the Engineer 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 the Bid.**

11.1 All documents relating to the Bid shall be in the English language.

**12. Documents Comprising the Bid.**

12.1 The bid to be submitted by the bidder as Volume V of the bid document (refer Clause 8.1) shall be in two separate parts:

**Part I:**

**Envelop I (a)** Earnest money (Bid security). Along with documentary proof of enlistment/ Prequalification.

**Envelop I (b)**

- (i) Qualification Information and supporting documents as specified in Section 4.2.
- (ii) Certificates, undertakings, affidavits as specified in Section 4.2.
- (iii) Any other information pursuant to Clause 4.2 of these instructions.
- (iv) Undertaking that the bid shall remain valid for the period not less than specified in Clause-15.1.
- (v) General Arrangement drawing as appended to bidding document / DNIT duly counter signed as acceptance of provision of GAD.

**Part II:**

**Envelop II** shall be named "Financial Bid" and shall comprise

- (i) Form of Bid as specified in Section 6
- (ii) Deleted.

Each part and each envelop will be separately sealed and marked in accordance with the Sealing and Marking Instructions in Clause 19.

- 12.2 The bidder shall prepare two copies of the Bid, marking them "Original" and Copy respectively.
- 12.3 Following documents, which are not submitted with the bid, will be deemed to be part of the bid.

<b>Section</b>	<b>Particulars</b>	<b>Volume No.</b>
1.	Invitation for Bids (IFB)	
2.	Instructions to Bidders	Volume I
3.	Conditions of Contract	
4.	Contract Data	
5.	Technical Specifications	Volume II
6.	Drawings & Soil Investigation report	Volume IV

### **13. Bid Price**

- 13.1 The contract shall be for the whole works as described in Sub-Clause 1.1, at the lump sum price submitted by the Bidder.
- 13.2 The Bidder shall fill in lump sum price ( both in figures in words) for all items of the works described in the Bidding documents.
- 13.3 All duties, taxes and other levies payable by the contractor under the contract, or for any other cause shall be included in the rates, prices and total Bid Price submitted by the Bidder.
- 13.4 The lumpsum Bid Price quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 47 of the Conditions of Contract (For contracts more than 12 months period).

### **14. Currencies of Bid and Payment**

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

### **15. Bid Validity.**

- 15.1 Bids shall remain valid for a period not less than **120 days** after the deadline date for bid submission specified in Clause 20. A bid valid for a shorter period shall be rejected by the Engineer as non- responsive. In case of discrepancy in bid validity period between that given in the undertaking pursuant to Clause 12.1 (iv) and the Form of Bid submitted by the bidder, the latter 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 Engineer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidder's responses shall be made in writing. 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, but will be required to extend the validity of his bid security for a period of the extension, and in compliance with Clause 16 in all respects.

**16. Bid Security**

- 16.1 The Bidder shall furnish, as part of his Bid, a Bid security in the amount as shown in column 4 of the table of ITB for this work. This bid security shall be in favour of Executive Engineer, Constn. Division PWD B&R Br., Rupnagar in one of the following forms.
- (a) Deposit-at-call Receipt from any scheduled Indian Bank or a Foreign Bank located in India and approved by the Reserve Bank of India.
  - (b) Fixed deposit receipt from any scheduled bank in India and duly pledged and discharged on the back side, in favour of Executive Engineer, Constn. Division PWD B&R Br., Rupnagar.
- 16.2 Deleted.
- 16.3 Any bid not accompanied by an acceptable Bid Security and not secured as indicated in Sub-Clause 16 above shall be rejected by the Engineer as non-responsive.
- 16.4 The Bid Security of unsuccessful bidder will be returned within 28 days of the end of the bid validity period specified in 15.1
- 16.5 The Bid Security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.
- 16.6 The Bid Security 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 27; 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 Bidders.**

- 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 The tenderer shall have to adopt departmental outline design ( i.e. design parameters) and shall be responsible for furnishing detailed design and working drawings. Further, he shall obtain technical approval of the Chief Engineer for each of the components of the bridge. The section adopted for bridge structure in general and drawings accompanying DNIT are only tentative and cannot be quoted as a basis for contractors bid.

**18. Format and Signing of Bid.**

- 18.1 The Bidder shall prepare one original and one copy of the documents comprising the bid as described in Clause 12 to these Instructions to Bidders, bound with the volume containing the “Technical Bid” and “Financial Bid” in separate parts and clearly marked “ORIGINAL” and “COPY” as appropriate. In the event of discrepancy between them, the original shall prevail
- 18.2 The original and copy of 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. All pages of the bid where entries or amendments have been made shall be initialed by the person or persons signing the bid.
- 18.3 The Bid shall contain no alternations or additions, except those to comply with instructions issued by the Engineer, 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. Sealing and Marking of Bids**

- 19.1 The Bidder shall seal the original and copy of the Bid in separate envelopes, duly marking the envelopes as “ORIGINAL” and “COPY”. These two envelopes (called as inner envelopes) shall then be put inside one outer envelope. Each set of the inner envelope marked “ORIGINAL” and “COPY” shall contain within it two separate sealed envelopes marked “Technical Bid [Envelope 1(a) and 1(b)]” and “Financial Bid (Envelope II)” with additional markings as follows
- Original or Copy, as the case may be
  - Technical Bid to be opened on 04-07-2008 date of Technical Bid opening in the presence of Technical Committee.
  - Financial Bid shall be opened in respect of Agencies who shall be prequalified on the basis of documents/ contents/ enclosure of Envelope 1(a) and 1(b) on a date to be intimated later.
  - All envelopes should also clearly state the “ **Name of work**” and “ **Name of Bidder**”

The contents of Technical and Financial Bids will be as specified in clause 12.1

- 19.2 The inner, outer and separate envelopes containing Technical and Financial Bids shall
- (a) be addressed to the Engineer at the address given in Appendix.
  - (b) bear the identification as indicated in Appendix.
- 19.3 In addition to the identification required in Sub-Clause 19.1 and 19.2, each of the envelopes shall indicate the name and address of the bidder to enable the bid to be returned unopened in case in is declared late, pursuant to Clause 21, or the Technical Committee declares the bid as non responsive pursuant to Clause 23.

**20. Deadline for Submission of the Bids**

- 20.1 Complete Bids (including Technical and financial) shall be received by Executive Engineer, Constn. Division PWD B&R Br., Rupnagar on behalf of the Engineer / Employer at the address specified above not later than the date & time indicated in appendix. In the event of the specified date for the submission of bids declared a holiday for the Engineer, the Bids will be received upto the appointed time on the next working day.
- 20.2 The Engineer / 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 Engineer / 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 Executive Engineer, Constn. Division PWD B&R Br., Rupnagar, on behalf of the Engineer or by the Engineer after the deadline prescribed in Clause 20 will be returned unopened to the bidder.

**22. Modification and withdrawal of Bids**

- 22.1 Bidders may modify or withdraw their bids by giving notice in writing before the deadline prescribed in Clause 20 or pursuant to Clause 23.
- 22.2 Each Bidder's modification or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with Clause 18 & 19, with the outer and inner envelopes additionally marked "Modification" or "Withdrawal", as appropriate.
- 22.3 No bid may be modified after the deadline for submission of Bids except in pursuance of Clause 23.
- 22.4 Withdrawal or modification of a Bid between the deadline for submission of bid and the expiration of the original of bid validity specified in Clause 15.1 above or as extended pursuant to Clause 15.2 may result in the forfeiture of the Bid security pursuant to Clause 16.

**(E) BID OPENING AND EVALUATION****23. Bid Opening**

- 23.1 The Engineer will open all the Bids received (except those received late), including modifications made pursuant to Clause 22, in the presence of the Bidders or their representatives who choose to attend at time, date and the place specified in Appendix in the manner specified in Clause 20 and 23.3. In the event of the specified date of Bid opening being declared a holiday for the Engineer, the Bids will be opened at the appointed time and location on the next working day.

- 23.2 Envelopes marked “WITHDRAWAL” shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause 22 shall not be opened.
- 23.3 The envelope containing “Earnest Money/ bid security [Envelope 1(a)]” shall be opened. The amount, form and validity of the bid security furnished with each bid will be announced. If the bid security furnished does not conform to the amount and validity period as specified in the Invitation for Bid (ref. Column 3 and paragraph 2 of IFB) and has not been furnished in the form specified in Clause 16, the remaining technical bid [Envelope I(b)] and the sealed financial bid (Envelope II) will be returned to the bidder.
- 23.4 (i) Subject to confirmation of the bid security by the issuing Bank, the bids accompanied with valid bid security will be taken up for evaluation with respect to the Qualification Information and other information furnished in Envelope I(b) of the bid pursuant to Clause 12.1 for pre-qualification of Agencies.
- (ii) After receipt of confirmation of the bid security, the pre-qualified bidder will be asked in writing to clarify or modify his technical bid, if necessary, with respect to any rectifiable defects.
- (iii) The bidders will respond in not more than 7 days of issue of the clarification letter.
- (iv) Immediately on receipt of these clarifications the Technical Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration and date of opening of Financial Bids shall be intimated to them.
- 23.5 If, as a consequence of the modifications carried out by the pre-qualified bidder in response to sub-clause 23.4, the bidders desire to modify their financial bid, they will submit the modification in separate sealed envelope so as to reach the Engineer's address (refer sub clause 19.2) before the opening of the financial bid as intimated in the clarification letter (refer sub clause 23.4). The envelope shall have clear marking “MODIFICATION TO FINANCIAL BID- Not to be opened except with the approval of the Technical Committee.”
- 23.6 At the time of opening of “Financial Bid” of pre-qualified bidders, the names of the bidders were found responsive in accordance with Clause 23.4(iv) will be announced. The bids of only these bidders will be opened. The remaining bids will be returned to the bidders unopened. 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 Engineer may consider appropriate, will be announced by the Engineer at the opening. Any Bid price or discount, which is not read out and recorded, will not be taken into account in Bid Evaluation.
- 23.7 Deleted.
- 23.8 The Engineer shall prepare minutes of the Bid Opening, including the information disclosed to those present in accordance with Sub-clause 23.6.

## **24. Process to be Confidential**

- 24.1 Information relating to the examination, clarification, evaluation, pre-qualification of agencies, comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any effort by a Bidder to influence the Engineer's

processing of Bids, pre-qualification or award decisions may result in the rejection of his Bid.

## **25. Clarification of Financial Bids.**

- 25.1 To assist in the examination, evaluation, and comparison of Bids, the Engineer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdown of unit rates. The request for clarification and the response shall be in writing, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Engineer in the evaluation of the Bids in accordance with Clause 27.
- 25.2 Subject to sub clause 25.1, no Bidder shall contact the Engineer 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 Engineer, it should do so in writing.
- 25.3 Any effort by the Bidder to influence the Engineer in the Engineer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidder's bid.

## **26. Examination of Bids and Determination of Responsiveness**

- 26.1 During the detailed evaluation of "Technical Bids" Envelope I(b) and pre-qualification of Agencies, the Engineer will determine whether each Bid (a) meets the eligibility criteria defined in Clause 3 and 4; (b) documents have been properly signed; (c) is accompanied by the required securities (d) is substantially responsive to the requirements of the Bidding documents; and (e) General arrangement drawings showing conceptual structural system alongwith approx. structural sizes and specification are in conformity to GAD appended to bidding document. During the detailed evaluation of the "Financial Bid", the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e. priced bill of quantities, technical specifications, and drawings. Financial bids shall be opened in respect of Agencies who shall be pre-qualified on the basis of contents/ enclosures/ documents and information included in Envelope I(a) and I(b).
- 26.2 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 Engineer's right of the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.
- 26.3 If a "Financial Bid" is not substantially responsive, it will be rejected by the Engineer and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

**27. Correction of Errors**

- 27.1 “Financial Bids” determined to be subsequently responsive will be checked by the Engineer for any arithmetic errors. Errors will be corrected by the Engineer 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.

- 27.2 The amount stated in the “Financial Bid” will be corrected by the Engineer 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 Bid security may be forfeited in accordance with sub clause 16.6 (b).

- 28.** Nothing extra shall be paid for damage caused by rains, floods, epidemics, earth quake or any other act of God or any other disorder. The Employer will not be responsible for payment of any compensation as a result of such damages or losses to the contractor and he shall be liable to set right such damages at his own cost to the satisfaction of the Engineer-in-charge.

**29. Evaluation and Comparison of Financial Bids.**

- 29.1 The Engineer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Sub Clause 26.2

- 29.2 In evaluating the Bids, the Engineer 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 27, or
- (b) Making an appropriate adjustments for any other acceptable variations, deviations, and
- (c) Making appropriate adjustments to reflect discounts or other price modifications offered in accordance with sub clause 23.6.

- 29.3 The Engineer 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 Engineer, shall not be taken into account in Bid evaluation.

- 29.4 The estimated effect of the price adjustment conditions under Clause 47 of the Conditions of Contract, during the period of implementation of the Contract, will not be taken into account in Bid evaluation.

- 29.5 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 Engineer may require the Bidder to produce detailed price analyses 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 analyses, the Engineer may require that the amount of the performance security set forth in Clause 34 be increased at the expense of the successful Bidder to a level sufficient to protect the Engineer against financial loss in the event of default of the successful Bidder under the Contract.
- 29.6 A bid 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.

**30. Deleted.**

**(F) AWARD OF CONTRACT**

**31. Award Criteria**

- 31.1 Subject to clause 32, the Engineer 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.

**32. Employer's Right to accept any Bid and Reject any or all Bids.**

- 32.1 The Employer reserves the right to accept or reject any Bid, and to cancel the Bidding process and rejects 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 grounds for the Engineer's action.

**33. Notification of Award and Signing of Agreement**

- 33.1 The Bidder whose bid has been accepted will be notified of the award by the Engineer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") will state the sum that the Engineer 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").
- 33.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 34.
- 33.3 The Agreement will incorporate all agreements between the Engineer and the successful Bidder. It will be signed by the Engineer (as stated in contract

data) on behalf of Engineer and the successful Bidder within 21 days of the facsimile intimation sent to the Bidder.

- 33.4 Upon the furnishing by the successful bidder of the Performance Security, the Engineer will promptly notify the other Bidders that their Bids have been unsuccessful.

#### **34. Performance Security**

- 34.1 Within 21 days of receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Engineer on behalf of Engineer a Performance Security in any of the forms given below for an amount equivalent to 5% of the Contract Price plus additional security for unbalanced Bids in accordance with Clause 29.5 of ITB and Clause 52 of Conditions of Contract valid upto 28 days after the date of expiry of the defect liability period.

- a bank guarantee in the form given in Section 8 (Volume-III).

- 34.2 If the performance security is provided by the successful bidder in the form of a Bank Guarantee, it shall be issued either (a) at the Bidder's option, by a Nationalized/Scheduled Indian Bank or (b) a foreign bank located in India and acceptable to the Employer.

- 34.3 Failure of the successful Bidder to comply with the requirements of Sub-clause 34.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security.

#### **35. Advance Payment and Security.**

- 35.1 The Engineer on behalf of Employer will provide an Advance Payment on the Contract Price as stipulated in the Conditions of Contract, subject to maximum amount, as stated in the Contract Data.

#### **36. Dispute Review Expert.**

- 36.1 The Employer shall appoint a Dispute Review Expert under the Contract, at a daily fee as indicated in Appendix plus reimbursable expenses. Such person shall be appointed by the Chief Engineer (IP), Punjab PWD B&R Branch at the request of either party. However, if the Contractor is not agreeable to the aforesaid proposal of Engineer, the Punjab Infrastructure Development Board shall appoint another Dispute Review Expert who shall be Technical Person of Punjab PWD B&R Branch.

#### **37. Corrupt or Fraudulent Practices.**

- 37.1 The Engineer 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 State PWD, CPWD, NHAI, AAI, DRDO or any other Government Agencies or Private sector undertaking, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for the contract, or in execution.

- 37.2 Furthermore, Bidders shall be aware of the provision stated in Sub-clause 23.2 and Sub-clause 59.2 of the Conditions of Contract.

**APPENDIX TO I.T.B.**

**Clause Reference  
With respect to  
Section - I**

1. Name of the Employer	:	Governor of the State of Punjab (India)	
2. Assignee	:	Chief Engineer (IP) PWD (B&R) Branch. Chandigarh	
The last five years.	Turnover	The last three years	Turnover (required each year)
2003-2004	Rs.	2005-06	Rs.
2004-2005	Rs.	2006-07	Rs.
2005-2006	Rs.	2007-08	Rs.
2006-2007	Rs.		
2007-2008			
3. Liquid assets and/or availability of credit facilities		<b>Rs. 8.50 Crore</b>	[CI.4.5B(c)]
4. Price level of the financial year		Rate of inflation may be taken As per the index given at sr. no. 12 below	[CI.4.7]
5. The pre-bid meeting will take Place at office of (Address of the Venue)		Committee Room of Punjab Infrastructure Development Board S.C.O. No. 89-90 ,Sector 34-A Chandigarh on <b>9-06-2008 at 11.00 hours</b>	( CI 9.2.1)
6. The technical bid will be opened at office of (Address of the Venue)		Committee Room of Punjab Infrastructure Development Board S.C.O. No. 89-90 ,Sector 34-A Chandigarh on <b>19-06-2008 at 15.30 hours</b>	( CI 23.1)
7. Address of the Employer		Governor of the State of Punjab through Chief Engineer (IP) P.W.D. (B&R), Br. S.C.O. No. 341-42 Sector. 34-A Chandigarh	[CI.1.1]
8. Identification : - Bid for		Construction of High Level Bridge Satluj River ( Including Approaches )crossing Nurpur Bedi Bunga Sahib road at Sarai ka Pattan in Distt. Ropar.	
9. The bid should be submitted latest by		19-06-2008 <b>at 13.00 hrs</b>	[CI.20.1]
10. The financial bid will be opened at at office of		Committee Room of Punjab Infrastructure Development Board S.C.O. No. 89-90 ,Sector34-A Chandigarh on	( CI 23.6)
Date & Time		To be intimated later on evaluation of contents of envelope I (a) & I(b)	
11. The Earnest Money in the shape of DAC / Bank Guarantee in favour of		Executive Engineer, Constn. Division PWD B&R Br., Rupnagar	[CI.34.1]
Payable at		Rupnagar	

12. The name of Dispute Review Expert (To be intimated later) [Cl.36.1]  
is to be appointed by the  
Chief Engineer,(IP) Punjab P.W.D, (B&R)  
Branch Chandigarh.  
Daily fee and reimbursable  
Expenses shall be intimated later.
13. Escalation factors (for the cost of works executed and financial figures to a common base value  
for works completed)
- | Year before | Multiply Factor |
|-------------|-----------------|
| One         | 1.15            |
| Two         | 1.32            |
| Three       | 1.52            |
| Four        | 1.67            |
| Five        | 1.84            |

**ANNEXURE – 1**  
**List of Key Plant & Equipment to be deployed on Contract Work**  
**(Reference Cl.4.5 B (a))**

<b>S. No.</b>	<b>Type of key Plant &amp; Equipment</b>	<b>Maximum Age as on 30-4-2008</b>	<b>Minimum Nos.</b>
1.	Automatic Concrete batching and mixing plant (capacity 30 cum/hour)	5	2
2.	Concrete mixer with Integral Weigh Batching Facility	5	2
3.	Vibrators		
	- Surface vibrator	2	As required
	- Needle vibrator	2	
	- Screed Vibrator	2	
4.	Motor grader (Owned or on hire)	5	1
5.	Cranes with clam shell ( grab ) for sinking of wells	5	8
6.	Girder launching equipment	5	1
7.	Well point drainage system (depending upon technology)	5	as required
8.	Jacks for pre stressing	5	3
	Multi Pull	5	4
	Single Pull	5	4
9.	Tipper trucks/tractors with jack(Owned or on hire)	5	15
10.	Welding equipment	-	as required.
11.	Steel form work	1	as required
12.	Generator of adequate capacity	-	as required
13.	Transit mixer	5	4
14.	Water Jetting equipment	5	2
15.	Concrete Pumps.	5	2
16.	Front end Loader	5	1
17.	Smooth Wheeled Roller	5	4
18.	Vibratory Roller	5	2
19.	Hot Mix Plant with Electronic Controls	5	1

**XEN**

	( minimum 60-80 TPH Capacity) ( Owned or on hire )		
20	Paver Finisher with Electronic Sensor ( Owned or on hire )	5	1
21	Water Tanker with sprinklers ( 12 KL Capacity )	3	3
22	Bitumen Sprayer	5	1
23	Tandem Roller	5	1
24	Dozer ( Owned or on hire )	5	1
25	Wet mix plant ( Owned or on hire )	5	1

**Annexure-II**  
**List of Key Personnel to be deployed on Contract Work**  
**[Reference Cl.4.5 (B) (b)]**

<b>S. No.</b>	<b>Personnel</b>	<b>Qualification</b>	<b>Minimum No.</b>
1.	Project manager	BE (Civil) + 15 years experience	1 No.
2.	Site Engineer	BE (Civil) + 10 years experience	4 No.
3.	Plant Engineer	BE (Mech.) + 10 Years Experience Or Diploma (Mech.) + 15 Years Experience	1 No.
4.	Quality Control Engineer	BE (Civil) + 7 years experience or Diploma (Civil) + 10 years experience.	2 No.
5.	Soil & Material Engineer	BE (Civil) + 10 years experience.	1 No.
6.	Survey Engineer	BE (Civil) + 5 years experience or Diploma (Civil)+ 8 years experience.	2 No.
		<b>Total</b>	<b>11 Nos.</b>

**VOLUME – I**

**SECTION 2**

**QUALIFICATION INFORMATION**

**QUALIFICATION INFORMATION**

- i. Qualification document as detailed below, complete in all respects, should be submitted in two copies as per the stipulations of Clause 4.2 of ITB.**

Pre-qualification document contains 12 numbers of forms as follows1.

1. FORMAT (1-1) GENERAL INFORMATION
2. FORMAT (1-2) NATURE OF FIRM
3. FORMAT (1-3) JOINT VENTURE DATA
4. FORMAT (2-1): AVERAGE ANNUAL TURNOVER
5. FORMAT (2-2): DETAILS OF CONTRACTS OF SIMILAR NATURE AND COMPLEXITY
6. FORMAT (2-3): PARTICULAR CONSTRUCTION EXPERIENCE RECORD
7. FORMAT (2-4): EQUIPMENT AVAILABILITY
8. FORMAT (2-5): AVAILABILITY OF PERSONNEL
9. FORMAT (2-6): AVAILABILITY OF CREDIT LINE
10. FORMAT (2-7) EXISTING COMMITMENTS
11. FORMAT (2-8): AFFIDAVIT
12. FORMAT (3-1): UNDERTAKING

- ii. If necessary, additional sheets can be added to the schedules. Such attachments should be clearly marked as follows:**

**‘Attachment 1 to Form (1-2), Attachment 2 to Form (2-5)’ etc.**

- iii. While submitting the PQ Document duly filled in, applicant shall enclose latest copies of brochures of their firms and technical documentation if any giving additional information and proper reference to the brochures.**
- iv. Each page of Qualification document shall be duly signed by the applicant or his authorized representative.**
- v. Costs incurred by applicant(s) in making this offer, in providing clarifications or attending discussions, conferences, or site visits shall not be reimbursed by the Employer.**
- vi. Incomplete bids shall be summarily rejected.**
- vii. The language for submission of application shall be English.**
- viii. The enclosed Forms should be filled in completely and all questions should be answered. If any particular query is not relevant, it should be replied as ‘not applicable’.**
- ix. Financial data, project costs, value of works, etc. should be given in Indian Rupee only except for Works carried out abroad for which figures may be furnished in American Dollars. Deemed Export Projects procured against International Competitive Bid, though executed within the country and where the currency of bid/contract is US Dollars or other convertible currency shall be considered as “Works Abroad.”**

- x. If the bid is made by a firm in partnership, it shall be signed by all the partners of the firm along with their full names and current addresses, or by a partner holding the power of attorney for the firm for signing the application. In such a case a certified copy of the power of attorney should accompany the application. A certified copy of the partnership deed, current address of the firm and the full names and current addresses of all the partners of the firm shall also accompany the application.**
- xi. If the bid is made by a limited company or a limited corporation, it shall be signed by a duly authorized person holding the power of attorney for signing the application, in which case a certified copy of the power of attorney should accompany the application. Such limited company or corporation will be required to furnish satisfactory evidence of its existence before the contract is awarded.**
- xii. If the bid is made by a JV, it should be signed by the authorized representative of the lead partner (as defined above). Certified copies of the Power of Attorney in respect of the person signing the PQ application must accompany the application.**
- xiii. The information furnished must be sufficient to show that the bidder is capable in all respects to successfully complete the envisaged work.**

**FORMAT (1-1)**

**GENERAL INFORMATION**

All individual firms and each partner of a joint venture bidding for the Work are requested to complete the information in this form. Nationality information to be provided for all owners or Applicant who are partnerships or individually owned firms.

Following information with regard to the nature of your interests in the Firms or JV's may also be provided:

- a) Shareholding pattern or percentage of shares held by the individual partners.
- b) Firms interests in other areas of business
- c) If, they represent a group of companies all the relevant details.

Where the Applicant proposes to use named subcontractor(s) for critical components of the works, or for work contents in excess of 10 percent of the value of the whole works, the following information should also be supplied for the subcontractor(s).

<b>1.</b>	<b>Name of firm</b> <b>Place of incorporation / registration</b> <b>Year of incorporation / registration</b>
<b>2.</b>	<b>Head office Address</b> <b>Telephones</b> <b>Fax</b>
<b>3</b>	<b>Name of Contact Person (s)</b> <b>Correspondence Address</b> <b>Telephones</b> <b>Fax</b> <b>E-mail</b>

<b>Nationality of Owners (*)</b>		
	<b>Name</b>	<b>Nationality</b>
1.		
2.		
3.		

(\*) To be completed by all owners of partnerships or individually owned firms, and also by all partners of a JV.

(Applicant)

FORMAT (1-2)

STRUCTURE AND ORGANIZATION

1.	The Bidder is		
	(a)	An individual	
	(b)	a proprietary firm	
	(c)	a firm in partnership	
	(d)	a Limited Company or Corporation	
	(e)	a group of firms /joint venture (If yes, give complete information in respect of each partner)	
2.	Attach the Organization Chart showing the structure of the organization including the name of the Directors, position of directors, position of officers.		
3.	No. of years of experience:		
	(a)	As a Prime Contractor (contractor shouldering major responsibility)	
		i) In own country	_____
		ii) other countries (specify country)	_____
	(b)	In a Joint Venture	
		i) in own country	_____
		ii) other countries (specify country)	_____
	(c)	As Subcontractor (specify main Contractor)	
		i) in own country	_____
		ii) Other countries (specify country)	_____
4.	For how many years has your organization been in business of similar works under its present name?		_____
6.	Have you ever left the work awarded to you incomplete? (If so, give name of project and reasons for not completing the work).		_____
7.	In which fields of civil engineering construction, do you claim specialization and interest		_____

8.	Give details of your soil and materials testing laboratory, if any (include full range of equipments available; 'make', year and functional conditions details etc. including present status indicating their availability for the contract (s) being applied for)	<hr/>
9.	Give details of your experience in mechanized Granular sub-base/base (Wet Mix Macadam) Pavement construction	<hr/>
10.	Give details of your experience in laying of bituminous mix in layers	<hr/>
11.	Give details of your experience in construction of Bridge Works in Reinforced Cement Concrete	<hr/>
12.	Give details of your experience in construction of Bridge Works with open foundation	<hr/> <hr/>

**(Applicant/Bidder)**

**FORMAT (1-3)**

**Details of Financial Participation in the Joint Venture**

[Indicate responsibility and extent of participation in respect of finance, of the major partner of the joint venture and other partner of JV]

Participation Details	Name of Firm A (Lead Partner)	Name of Firm B (Partner)	Name of Firm C (Partner)
Financial			

All partners of the JV are individually and severally responsible for the actions of the JV firm. Any misrepresentation by one partner will render the application invalid and liable to be rejected.

Signature of all the participating firms:

- Firm A
- **Firm B**
- **Firm C**

## FORMAT 2-1

## ANNUAL TURNOVER

<i>Name of Applicant or partner of a joint venture</i>
--

*All individual firms and all partners of a joint venture are required to complete the information in this form. The information supplied shall be the annual turnover of the Applicant (or each member of a joint venture), in terms of the amounts billed to clients for each year for work in progress or completed. **Applicants should enclose testimonials (certified copies of annual reports/, certificates) in support of their claim.***

*(Use a separate sheet for each partner of a joint venture)*

**Annual Turnover Data**  
(From Construction Works only)(Ref: Clause 4.1)

S.No.	Financial Year	Turnover
1.	2002-2003	
2.	2003-2004	
3.	2004-2005	
4.	2005-2006	
5.	2006-2007	

Note: In case of turnovers in foreign currency, the figures are to be given in relevant currency and Figures in INR may be worked out as per SBI Foreign Currency selling rates prevalent on 01.04.2007.

**(Applicant)**



**FORMAT 2-4**

**Equipment availability or access commitment**

Item of equipment	Requirement No.	Availability Proposals			Remarks (From whom to be purchased)	
		Capacity	Owned /leased/to be procured	Nos./ capacity	Age/ condition	
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Note: Only major equipment needs to be reported here.

**(Applicant)**

**FORMAT 2-5****Availability of personnel**

<b>SL. NR.</b>	<b>Personnel</b>	<b>Number of persons required</b>	<b>Qualification</b>
1.	Project Manager	1	
2.	Site Engineer	2	
3.	Plant Engineer	1	
4.	Quantity Surveyor	1	
5.	Survey Engineer	1	
6.	Quality Assurance Engineer	1	
7.	Precasting yard Engineer	1	

**(Applicant)**

FORMAT (2-6)

FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF OVERDRAFT/CREDIT FACILITIES

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 "**Construction of High Level Bridge Over Satluj River ( Including Approaches) crossing Nurpur Bedi Bunga Sahib road at Sarai ka Pattan in Distt. Rupnagar.**" is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of INR ..... to meet their working capital requirements for executing the above contract.

Name of the Bank

Senior Bank Manager

Address of the Bank

**FORMAT (2-7)**

**Summary Sheet:**

Current Contract commitments / works in progress

Name of Applicant or partner of a Joint Venture
---

*Applicants and each partner to a Joint Venture Application should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.*

- In case of turnover in foreign currency, the figures are to be given in relevant currency and Figures in INR may be worked out as per SBI Foreign Currency selling rates prevalent on 1.4.06.

S.No.	Name of the contract, Location and Nature of the work	Contract No. & Date	Percentage and amount of participation of firm in the project	Percentage and amount sub-contracted by the firm	Name and Address of Client (including Tel./ Fax no.)	Contract value	Length of the project	Stipulated date of completion	Value of outstanding work	Estimated completion date
1	2	3	4	5	6	7	8	9	10	11
1										
2										
3										
4										
5										
6 etc.										

Total value of expected value of work to be carried out between 1.01.08 and 30.06.09=

**AFFIDAVIT\***

1. I/we, 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 \_\_\_\_\_ have abandoned any work under Government of India or Govt. of Punjab 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 authorize(s) and request(s) any bank, person, 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(s) and agree(s) that further qualifying information may be requested, and agrees to furnish any such information at the request of the Department / Project implementing agency.
5. The undersigned binds himself with all the stipulations of the Bidding Document including period of completion, provision of adequate equipment, personnel and other resources required for completion within the stipulated completion period and agrees to augment them, if found necessary for timely completion of the project, as desired by the employer.
6. The undersigned are not debarred for contract work by Govt. of Punjab or any other Agency of Government of India or any of the State Governments at present. Or The undersigned was debarred for contract work by ----- for a period of ----- and have completed my/our term.
7. The undersigned has never been convicted by any court of law for any of the offences under any Indian/ foreign laws.

\_\_\_\_\_(Signed by an Authorised Officer of the Firm)

Title of Office\_\_\_\_\_

Name of Firm \_\_\_\_\_

DATE

\* To be executed on a non-judicial stamp paper individually by all members of JV.

- (i) Affidavit.
- (ii) Undertaking
- (iii) Performance certificate in respect of similar completed works (Bridges/ROB's).

**UNDERTAKING**

I, the undersigned do hereby undertake that our firm  
M/s \_\_\_\_\_  
\_\_\_\_\_ would invest a minimum cash upto Rs. 900 lacs during implementation of the Contract.

\_\_\_\_\_  
(Signed by an Authorized Office of the Firm)

\_\_\_\_\_  
Title of Officer

\_\_\_\_\_  
Name of Firm

\_\_\_\_\_  
DATE

**VOLUME – 1**

**SECTION 3**

**CONDITIONS OF CONTRACT**

**CONDITIONS OF CONTRACT**

**Table of Contents**

<b>A. General</b>	<b>Page No.</b>	<b>C. Quality Control</b>	<b>Page No.</b>
1. Definitions	43	33. Identifying Defects	53
2. Interpretation	45	34. Tests	54
3. Language and Law	45	35. Correction of Defects	54
4. Engineer's Decisions	45	36. Uncorrected Defects	54
5. Delegation	46		
6. Communications	46	<b>D. Cost Control</b>	
7. Sub-contracting	46	37. Bill of Quantities	54
8. Other Contractors	46	38. Changes in the Quantities	54
9. Personnel	46	39. Variations	55
10. Engineer's & Contractor's Risks	47	40. Payments for Variations	55
11. Employer's Risks	47	41. Cash flow Forecasts	55
12. Contractor's Risks	47	42. Payment Certificates	56
13. Insurance	47	43. Payments	56
14. Site Investigation Reports	48	44. Compensation Events	56
15. Queries about the Contract Data	48	45. Tax	58
16. Contractor to Construct the works	48	46. Currencies	58
17. The works to be completed by the Intended Completion date	48	47. Price Adjustment	58
18. Approved by the Engineer	48	48. Retention	58
19. Safety	49	49. Liquidated damages	59
20. Discoveries	49	50. Bonus	59
21. Possession of the Site	49	51. Advance Payment	60
22. Access to the Site	49	52. Securities	60
23. Instructions	50	53. Deleted	60
24. Disputes	50	54. Cost of Repairs	61
25. Procedure for Disputes	50	<b>E. Finishing the Contract</b>	
26. Replacement of Dispute Review Expert	50	55. Completion	61
		56. Taking over	61
		57. Final Accounts	61
<b>B. Time Control</b>		58. Operative & Maintenance Manuals	61
27. Programme	51	59. Termination	62
28. Extension of the Intended Completion date	51	60. Payment upon Termination	63
29. Deleted	52	61. Property	64
30. Delays ordered by the Engineer	52	62. Release for Performance	64
31. Management Meetings	52		
32. Early Warning	52	<b>F. Special Conditions of Contract</b>	64

## CONDITIONS OF CONTRACT

### A. GENERAL

#### 1. Definitions.

- 1.1 Terms which are defined in the Contract Data are also defined in the Conditions of Contract, but keep their defined meanings. Capital initials are used to identify defined terms.

The **Adjudicator** (synonymous with **Dispute Review Expert**) is the person appointed by the Chief Engineer (IP), Punjab P.W.D. (B&R) Branch, Chandigarh to resolve disputes in the first instance, as provided for in Clauses 24 and 25. The name of the Adjudicator is defined in the Contract Data.

**Bill of Quantities** means the period and complete Bill of Quantities forming part of the Bid.

**Compensation Events** are those defined in Clause 44 hereunder.

The **Completion Date** is the date of completion of the works are certified by the Engineer in accordance with Sub Clause 55.1.

The **Contract** is the contract between the Engineer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in Clause 2.3 below.

The **Contract Data** defines the documents and other information which comprise the Contract.

The **Contractor** is a person or cooperate body whose Bid to carry out the Works has been accepted by the Engineer.

The **Contractor's Bid** is the completed Bidding documents submitted by the Contractor to the Engineer and includes Technical and Financial bids.

The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

**Days** are calendar days; months are calendar months.

A **Defect** is any part of the works not completed in accordance with the Contract.

The **Defects Liability Period** is the period named in the Contract Data and calculated from the Completion Date.

**The Employer** is the party who will employ the Contractor to carry out the Works. The Governor of the State of Punjab (India) or successor in the office and assigns. The Chief Engineer (IP) Punjab P.W.D. (B&R) Branch, Chandigarh will be the assignee for the project.

The **Engineer** is the person named in the Contract Data (or any other competent person appointed and notified to the Contractor to act in replacement of the Engineer) who is responsible for supervising the Contractor, administering the Contract, certifying payments due to the Contractor, issuing and valuing Variations to the Contract, awarding extensions of time, and valuing the Compensation Events.

**Equipment** is the Contractor's machinery and vehicles brought temporarily to the Site to construct the works.

The **Initial Contract Price** is the Contract Price listed in the Engineer's Letter of Acceptance.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the works. The Intended Completion Date is specified in the contract Data. The Intended Completion Date may be revised only by the Engineer by issuing letter of extension of time.

**Materials** are all supplies, including consumable, used by the Contractor for incorporation in the Works.

**Plant** is any integral part of the Works which is to have a mechanical, electrical, electronic or chemical or biological function.

The **Site** is the area defined as such in the Contract Data.

**Site Investigation Reports** are those which were included in the Bidding documents and are factual interpretative reports about the surface and sub surface conditions at the site.

**Specifications** means the Specification of the works included in the Contract and any modification or addition made or approved by the Engineer.

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 Dates

A **Subcontractor** is a person or corporate body, who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.

**Temporary Works** are works designed, constructed, installed and removed by the Contractor which are needed for construction or installation of the Works.

A **Variation** is an instruction given by the Engineer, which varies the scope of works.

The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Engineer, as defined in the Contract Data.

## **2. Interpretation**

- 2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about the Conditions of the Contract.
- 2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion date for the whole of the Works).
- 2.3 The documents forming the Contract shall be interpreted in the following order of priority:
- (1) Agreement
  - (2) Letter of Acceptance, notice to proceed with the works
  - (3) Contractor's Bid
  - (4) Contract Data
  - (5) Conditions of Contract including Special Conditions of Contract
  - (6) Specifications
  - (7) Drawings
  - (8) Bill of quantities; and
  - (9) Any other document listed in the Contract Data as forming the part of Contract.

## **3. Language and Law**

- 3.1 The language of the Contract and the law governing the Contract as stated in the Contract Data.

## **4. Engineer's Decisions**

- 4.1 Except where otherwise specifically stated, the Engineer will decide contractual matters between the Engineer and the Contractor in the role representing the Employer

**Delegation**

- 5.1 The Engineer may delegate any of his duties and responsibilities to other people except to the Adjudicator after notifying the Contractor and may cancel any delegation after notifying the Contractor.

**6. Communications**

- 6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when they are delivered (in terms of Indian Contract Act).

**7. Sub-contracting**

- 7.1 The Contractor may sub-contract any portion of work, upto a limit specified in Contract Data, with the approval of the Engineer but shall not assign the Contract without the approval of the Engineer in writing. Sub-contracting does not alter the Contractor's obligations.

**8. Other Contractors**

The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Engineer on behalf of the Engineer / Employer between the dates given in the Schedule of other Contractors. The Contractor shall as referred to in the Contract Data, also provide facilities and services for them as described in the Schedule. The Engineer / Employer on behalf of the Engineer / Employer may modify the schedule of other contractors and shall notify the Contractor of any such modification.

**9. Personnel**

- 9.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.
- 9.2 If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

**10. Engineer's / Employer and Contractor's Risks**

- 10.1 The Engineer / Employer carries the risks which this Contract states are Engineer's risks, and the Contractor carries the risks which this contract states are Contractor's risks.

**11. Employer's Risks**

- 11.1 The Engineer / Employer is responsible for the excepted risks which are (a) in so far as they directly affect the execution of the works in India, the risks of war, hostilities, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot commotion or disorder (unless restricted to the Contractor's employees), and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive, or (b) a cause due solely to the design of the Works, other than the Contractor's design.

**12. Contractor's Risks**

- 12.1 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

**13. Insurance**

- 13.1 The Contractor shall provide, in the joint names of the Engineer / 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.

- 13.2 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.

- 13.3 If the Contractor does not provide any of the policies and certificates required, the Engineer may effect the insurance which the Contractor should have provided and recover the premiums the Engineer 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.

13.4 Alterations to the terms of insurance shall not be made without the approval of the Engineer.

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

#### **14. Site Investigation Reports**

14.1 The Contractor, in preparing the Bid, shall rely on any site Investigation Reports referred to in the Contract Data, supplemented by any information available to the Bidder.

#### **15. Queries about the Contract Data**

15.1 The Engineer will clarify queries on the Contract Data.

#### **16. Contractor to construct the Works**

16.1 The Contractor shall construct and install the works in accordance with the Specification and Drawings.

#### **17. The Works to be completed by the intended Completion Date**

17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Programme submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

#### **18. Approval by the Engineer**

18.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Engineer, who is to approve them if they comply with the Specifications and Drawings.

18.2 The Contractor shall be responsible for design of Temporary Works.

18.3 The Engineer's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

18.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works where required.

18.5 All drawings prepared by the Contractor for the execution of the temporary or permanent works are subject to prior approval by the Engineer before their use. In case of dispute, if any, decision of the Chief Engineer will be final.

**19. Safety**

- 19.1 The Contractor shall be responsible for the safety of all activities on the site, including smooth flow of traffic at his own cost as per guidelines of IRC/MORT&H.

**20. Discoveries**

- 20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Engineer. The Contractor is to notify the Engineer of such discoveries and carry out the Engineer's instructions for dealing with them.

**21. Possession of the Site**

- 21.1 The Engineer / Employer shall give possession of site to the firm in parts on the date by which the concerned activity is to start as per the mile stone chart. If possession of site is not given by the date stated in the Contract Data, the Employer is deemed to have delayed the start of the relevant activities and this will be Compensation Event for the purpose of time extension only..

**22. Access to the Site**

- 22.1 The Chief Engineer, Engineer or any other person authorized by the Engineer shall at all times have access to the Site and to all places where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured/ fabricated/ assembled for the works.
- 22.2 The Engineer shall be entitled, during manufacture, fabrication or preparation to inspect and test the materials and Plant to be supplied under the Contract. If materials or Plant are being manufactured, fabricated or prepared in workshops or places other than those of the Contractor, the Contractor shall obtain permission for the Engineer and his authorized representatives to carry out such inspection and testing in those workshops or places. All the expenses for such visits, inspection shall be borne by the Contractor. Such inspection or testing shall not release the Contractor from any obligation under the Contract.
- 22.3 The Contractor shall agree with the Engineer on the time and place for the inspection or testing of any materials for Plant as provided in the Contract. The Engineer shall give the Contractor not less than 24 hours notice of his intention to carry out the inspection or to attend the tests. If the Engineer, or his duly authorized representative, does not attend on the date agreed,

the Contractor may, unless otherwise instructed by the Engineer, proceed with the tests, which shall be deemed to have been made in the presence of the Engineer. The Contractor shall forthwith forward to the Engineer duly certified copies of the test readings, if the Engineer has not attended the tests, he shall accept the said readings as accurate.

**23. Instructions**

- 23.1 The Contractor shall carry out all instructions of the Engineer pertaining to works which comply with the applicable laws where the Site is located.
- 23.2 The Contractor shall permit the Engineer to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Engineer, if so required by the Engineer or Employer.

**24. Disputes**

- 24.1 If the Contractor believes that a decision taken by the Engineer was either outside the authority given to the Engineer by the Contract or that the decision was wrongly taken, the decision shall be referred to the Dispute Review Expert within 14 days of the notification of the Engineer's decision.

**25. Procedure for Disputes**

- 25.1 The Dispute Review Expert shall give a decision in writing within 28 days of receipt of a notification of a dispute.
- 25.2 The Dispute Review Expert shall be paid daily at the rate specified in the Contract Data together with reimbursable expenses of the types specified in the Contract Data and the cost shall be divided equally between the Engineer and the Contractor, whatever decision is reached by the Dispute Review Expert. Either party may give notice to the other to refer a decision of the Dispute Review Expert to an Arbitrator within 28 days of the Dispute Review Expert's written decision. If neither party refers the dispute to arbitration within the next 28 days, the Dispute Review Expert's decision will be final and binding.
- 25.3 The arbitration shall be conducted in accordance with the arbitration procedure stated in the Special Conditions of Contract.

**26. Replacement of Dispute Review Expert**

- 26.1 Should the Dispute Review Expert resign or die, or should the Engineer and the Contractor agree that the Dispute Review Expert is not fulfilling his functions in accordance with the provisions of the Contract, a new Dispute Review Expert will be appointed by the Chief Engineer Incharge of the project.

**B. TIME CONTROL****27. Programme**

- 27.1 Within the time stated in the Contract Data the Contractor shall submit to the Engineer for approval a Programme showing the general methods, arrangements, order, and timing for all the activities in the works along with monthly cash flow forecast.
- 27.2 An update of the Programme shall be a Programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.
- 27.3 The Contractor shall submit to the Engineer, for approval, an updated Programme at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an updated Programme within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.
- 27.4 The Engineer's approval of the Programme shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Engineer again at any time. A revised Programme is to show the effect of Variations and Compensation Events.

**28. Extension of the Intended Completion Date**

- 28.1 The Engineer shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost.
- 28.2 The Engineer shall decide whether and by how much to extend the Intended Completion Date within 35 days of the Contractor asking the Engineer for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

28.3. The Engineer shall within 14 days of receiving full justification from the Contractor for extension of Intended Completion Date refer to the Engineer his decision. The Contractor shall in not more than 21 days communicate to the Engineer the acceptance or otherwise of the Engineer's decision. If the Engineer fails to give his acceptance, the Engineer shall not grant the extension and the Contractor may refer the matter to the Dispute Review Expert under Clause 24.1.

**29. Deleted**

**30. Delays Ordered by the Engineer**

30.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the works.

**31. Management Meetings**

31.1 Either the Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

31.2 The Engineer shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Contractor. The responsibility of the parties for actions to be taken is to be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

**32. Early Warning**

32.1 The Contractor is to warn the Engineer at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price or delay the execution of works. The Engineer may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate is to be provided by the Contractor as soon as reasonably possible.

32.2 The Contractor shall cooperate with the Engineer in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer.

**C. QUALITY CONTROL****33. Identifying Defects**

33.1 The Engineer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect.

33.2 **Consultants for Quality Control:** It is expected that Contractor will have proper quality control staff and procedures in order to ensure quality. They are also expected to improve their procedures in line with ISO 9002 and get the certification. For all works amounting to more than Rs. 2.00 Crore, the Contractor shall engage a competent and Independent Quality Control Consultant approved by Chief Engineer to exercise effective control over the construction operations in the field so as to produce quality works. The fully equipped laboratory shall be set up and trained staff shall be employed by the said consultant. The contractor shall supply to the Chief Engineer a copy of his agreement and the fee for quality control should generally be 0.5% of the contract value. The payment of the quality control consultant shall be made by the Chief Engineer direct as per the copy of the agreement supplied by the contractor. This payment shall be recoverable from the Contractor. The consultant shall guide the contractor for production of quality works at all stages and shall maintain records, reports and test results so as to indicate the extent of quality achieved. The consultant shall also supply a copy of all these reports, tests and checks to the Engineer regularly. The contractor shall also attach a copy of these reports, tests and checks with his bill, without which no payment shall be made. The Chief Engineer can also order the change of consultant, if in his opinion, he is not performing competently. The Engineer will be free to conduct surprise, random or in site checks so as to have cross check on quality. In case the contractor fails to employ for the whole or part of the period of execution a quality control consultant, the Chief Engineer may order employment of consultant at the cost of the Contractor or may order the departmental staff to carry out the quality control checks and a deduction @ 1.5% of the total cost of the work shall be made from the bill of the contractor, even if the actual expenditure incurred on private consultant or departmental quality control is less. Nothing in this clause shall reduce the overall responsibility of the Contractor regarding quality and he shall remain liable for any defect in the execution.

**33.3 Deleted**

**34. Tests**

- 34.1 If the Engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples.

**35. Correction of Defects**

- 35.1 The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 35.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Engineer's notice.

**36. Uncorrected Defects**

- 36.1 If the Contractor has not corrected a Defect within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

**D. COST CONTROL****37. Bill of Quantities**

- 37.1 The Bill of Quantities shall contain items for the construction, installation, testing, and commissioning work to be done by the Contractor.
- 37.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of work done at the rate in the Bill of Quantities for each item.

**38. Change in the Quantities**

- 38.1 If the final quantity of work differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent provided the change exceeds 1% of initial Contract Price, the Engineer shall adjust the rate to allow for the change, duly considering.
- (a) justification for rate adjustment as furnished by the Contractor,
  - (b) economies resulting from increase in quantities by way of reduced plant, equipment, and overhead costs.
  - (c) entitlement of the Contractor to compensation events where such events are caused by any additional work.
  - (d) The revised rates will be applicable to the quantity which exceeds the 25% limit and not on the entire quantity.

38.2 The Engineer shall not adjust rates from changes in quantities if thereby the Initial Contract Price is not exceeded by more than 15 percent, except with the prior approval of the Engineer.

38.3 If requested by the Engineer, the Contractor shall provide the Engineer with a detailed cost breakdown of any rate in the Bill of Quantities.

### **39 Variations**

39.1 All variations shall be included in updated Programmes produced by the Contractor.

### **40. Payments for Variation**

40.1 The Contractor shall provide the Engineer with a quotation (with breakdown of unit rates) for carrying out the Variation when requested to do so by the Engineer. The Engineer shall assess the quotation, which shall be given within seven days of the request or within any longer period stated by the Engineer and before the Variation is ordered.

40.2 If the work in the Variation corresponds with an item description in the Bill of Quantities and if, in the opinion of the Engineer, the quantity of work above the limit stated in Sub Clause 38.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work.

40.3 If the Contractor's quotation is unreasonable, the Engineer may order the Variation and make a change to the Contract Price which shall be based on Engineer's own forecast of the effects of the Variation on the Contractor's costs.

40.4 If the Engineer decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

40.5 The Contractor shall not be entitled to additional payment for costs which could have been avoided by giving early warning.

### **41. Cash Flow Forecasts**

41.1 When the Programme is updated, the contractor is to provide the Engineer with an updated cash flow forecast.

**42. Payment Certificates**

- 42.1 The Contractor shall submit to the Engineer monthly statements of the estimated value of the work completed less the cumulative amount certified previously.
- 42.2 The Engineer shall check the Contractor's monthly statements within 14 days and certify the amount to be paid to the Contractor after taking into account any credit or debit for the month in question in respect of materials for the works in the relevant amounts and under conditions set forth in sub clause 51(4) of conditions of contract (Secured Advance).
- 42.3 The value of work executed shall be determined by the Engineer.
- 42.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed
- 42.5. The value of work executed shall include the valuation of Variations and Compensation Events.
- 42.6 The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in light of later information.

**43. Payments**

- 43.1 Payments shall be adjusted for deductions for advance payments, retention, other recoveries in terms of the contract and taxes at source, as applicable under the law. The Engineer shall pay the Contractor the amounts certified by the Engineer within 28 days of the date of each certificate. If the Engineer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made upto the date when the late payment is made at 12% per annum.
- 43.2 If an amount certified in increased in a later certificate as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 43.3 Items of the Works for which no rate or price has been entered in bill will not be paid for by the Engineer and shall be deemed covered by other rates and prices in the Contract.

**44. Compensation Events**

- 44.1 The following are Compensation Events unless they are caused by the Contractor:

- (a) The Engineer does not give access to a part of the Site as stipulated in clause-21 by the site possession Date stated in the Contract Data.
- (b) The Engineer modifies the schedule of other contractors in a way which affects the work of the Contractor under the contract.
- (c) The Engineer orders a delay or does not issue drawings, specifications or instructions required for execution of works on time.
- (d) The Engineer instructs the Contractor to uncover or to carry out additional tests upon work which is then found to have no Defects.
- (e) The Engineer does not convey the decision of a subcontract to be let, within 15 days.
- (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of Letter of Acceptance from the information issued to Bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the site.
- (g) The Engineer gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.
- (h) Other Contractors, public authorities, utilities or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
- (i) The advance payment is delayed, beyond 28 days after receipt of application and bank guarantee.
- (j) The effect on the Contractor of any of the Employer's Risks.
- (k) The Engineer unreasonably delays issuing a Certificate of Completion.
- (l) Other Compensation Events listed in the Contract Data or mentioned in the Contract.

44.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/ or the Intended Completion Date is extended. The Engineer shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

44.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it is to be assessed by the Engineer and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Engineer shall adjust the Contract Price based on Engineer's own forecast. The Engineer will assume that the Contractor will react competently and promptly to the event.

44.4 The Contractor shall not be entitled to compensation to the extent that the Engineer's interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Engineer.

#### **45. Tax**

45.1 The rates quoted by the Contractor shall be deemed to be inclusive of the sales and other taxes that the Contractor will have to pay for the performance of this Contract. The Engineer will perform such duties in regard to the deduction of such taxes at source as per applicable law.

#### **46. Currencies**

All payments shall be made in Indian Rupees.

#### **47. Price Adjustment**

47.1 Contract price shall be adjusted for increase or decrease in rates and prices of labour, 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 upto end of the initial intended completion date or 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) The price adjustment shall be determined during each month from the formula given in the contract data.
- (c) Following expressions and meanings are assigned to the work done during each month:

R = Total value of work done during the month. It would exclude 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.

47.2 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 lumpsum bid price shall be deemed to include amounts to cover the contingency of such other rise or fall in costs.

#### **48. Retention**

48.1 The Engineer shall retain from each payment due to the Contractor the proportion stated in the Contract Data until Completion of the whole of the Works.

48.2 On Completion of the whole of the Works half the total amount retained is repaid to the Contractor and half when the Defects Liability Period has passed and the Engineer has certified that all Defects notified by the

Engineer to the Contractor before the end of this period have been corrected.

**49. Liquidated Damages**

- 49.1 The Contractor shall pay liquidated damages to the Engineer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the contract data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Engineer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities.
- 49.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the over payment calculated from the date of payment to the date of repayment at the rate specified in Sub Clause 43.1.
- 49.3 If the contractor fails to comply with the time for completion as stipulated in the tender, then the Contractor shall pay to the Engineer the relevant sum stated in the Contract Data as Liquidated damages for such default and not as penalty for everyday or part of day which shall elapse between relevant time for completion and the date stated in the taking over certificate of the whole of the works on the relevant section, subject to the limit stated in the contract data.
- 49.4 If, before the Time for Completion of the whole of the Works or, if applicable, any Section, a Taking - Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after the date stated in such Taking-Over Certificate, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

**50. Bonus**

- 50.1 If the Contractor achieves completion of the whole of the works within 12 months from the Date of Start mentioned in Contract Data, the Employer shall pay to the contractor a sum stated in Contract Data as bonus for every completed month, which shall elapse between the date of completion of all items of works as stipulated in the contract, including variations ordered by the Engineer and the time prescribed in Clause 17.

For the purpose of calculating bonus payments, the time of 12 months for completion of the whole of the works is fixed and no adjustments of the time by reason of granting an extension of time pursuant to Clause 28 or

any other clause of these conditions will be allowed. Any period falling short of a complete month shall be ignored for the purpose of computing the period relevant for the payment of bonus.

**51. Advance Payment**

- 51.1 The Engineer shall make advance payment to the Contractor of the amounts stated in the Contract Data by the date stated in the Contract Data, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Engineer on behalf of the Engineer in amounts and currencies equal to the advance payment. The guarantee shall remain effective until the advance payment has been repaid. The advance payment shall be paid to the Contractor at an interest rate of 12% per annum.
- 51.2 The Contractor is to use the advance payment only to pay for Equipment, Plant and Mobilization expenses required specifically for execution of the Works. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Engineer.
- 51.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, or Liquidated Damages.

**51.4 Secured Advance**

The Engineer shall make advance payment in respect of materials intended for but not yet incorporated in the Works in accordance with conditions stipulated in the Contract Data.

**52. Securities**

The Performance Security (including additional security for unbalance bids) shall be provided to the Engineer on behalf of the Engineer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Engineer on behalf of the Engineer and denominated in Indian Rupees. The Performance Security shall be valid until a date 28 days pursuant to the date of expiry of the Defects Liability Period and the additional security for unbalanced bids shall be valid until a date 28 days from the issue of the certificate of completion.

**53. Deleted**

**54. Cost of Repairs**

- 54.1 Loss of damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

**E. FINISHING THE CONTRACT****55. Completion**

- 55.1 The Contractor shall request the Engineer to issue a Certificate of Completion of the works and the Engineer will do so upon deciding that the work is completed.

**56. Taking Over**

- 56.1 The Engineer shall take over the Site and the Works within seven days of the Engineer issuing a certificate of Completion.

**57. Final Account**

- 57.1 The Contractor shall supply to the Engineer a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Engineer shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Engineer shall decide on the amount payable to the Contractor and issue a payment certificate, within 56 days of receiving the Contractor's revised account.

**58. Operating and Maintenance Manuals**

- 58.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.
- 58.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the Contract Data, or they do not receive the Engineer's approval, the Engineer shall withhold the amount stated in the Contract Data from payments due to the Contractor.

**59. Termination**

- 59.1 The Engineer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract. For this purpose 14 days notice in writing shall be given by either party clearly stipulating the grounds of Breach of contract with copy to Engineer.
- 59.2 Fundamental breaches of Contract include, but shall not be limited to the following:
- (a) the Contractor stops work for 28 days when no stoppage of work is shown on the current programme and the stoppage has not been authorized by the Engineer;
  - (b) the Engineer instructs the Contractor to delay the progress of the Works and the instruction is not withdrawn within 28 days;
  - (c) the Engineer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
  - (d) a payment certified by the Engineer is not paid by the Engineer to the Contractor within 56 days of the date of the Engineer's certificate;
  - (e) the Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;
  - (f) the Contractor does not maintain a security which is required;
  - (g) the Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data; and
  - (h) If the Contractor, in the judgment of the Engineer has engaged in corrupt or fraudulent practices in competing for or in executing the contract.
  - (i) In case the contractor is a joint venture of consortium or partnership firm or any other such legal entity having more than one constituent, the contractor shall not change its legal constitution in any manner during the subsistence of contract. The share holding, percentage/extent of partnership or other interest of the original constituents of the Contractor shall not be diluted or varied during the subsistence of Contract.

- (j) The Contractor shall not engage the services of any sub Contractor for the purposes of discharging obligation under the Contract without approval of the Engineer.

For the purpose of this paragraph: “corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution. “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish contract prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.”

- 59.3 When either party to the Contract gives notice of a breach of contract to the Engineer for a cause other than those listed under Sub Clause 59.2 above, the Engineer shall decide whether the breach is fundamental or not.
- 59.4 Notwithstanding the above, the Engineer may terminate the Contract for convenience.
- 59.5 If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.

**60. Payment upon Termination**

- 60.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done less advance payments received upto the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Engineer exceeds any payment due to the Contractor the difference shall be a debt payable to the Engineer on behalf of the Employer.
- 60.2 If the Contract is terminated at the Engineer’s convenience or because of a fundamental breach of Contract by the Engineer, the Engineer shall issue a certificate for the value of the work done, the cost of balance material brought by the contractor and available at site, the reasonable cost of removal of Equipment, repatriation of the Contractor’s personnel employed solely on the Works, and the Contractor’s costs of protecting and securing the works and less advance payment received upto to the

date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

**61. Property**

61.1 All materials on the Site, Plant, Equipment, Temporary works and Works are deemed to be the property of the Engineer, if the contract is terminated because of a Contractor's default.

**62. Release for Performance**

62.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Engineer or the Contractor the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.

**F. SPECIAL CONDITIONS OF CONTRACT****1. LABOUR:**

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the number of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Engineer may require.

**2. COMPLIANCE WITH LABOUR REGULATIONS:**

During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all existing labour enactments and rules made thereunder, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given below. The Contractor shall keep the Engineer indemnified in case any action is taken against the Engineer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments.

If the Engineer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, the Engineer shall have the right to deduct any money due to the Contractor including his amount of performance security. The Engineer/Engineer shall also have right to recover from the Contractor any sum required for making good the loss or damage suffered by the Engineer.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Engineer at any point of time.

### **SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK.**

- a) Workmen Compensation Act 1923:- The Act provides for compensation in case of injury by accident arising out of and the course of employment.
- b) Payment of Gratuity Act 1972:- Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more, on death, the rate of 15 days wages for every completed year of service. The Act is applicable to establishments employing 10 or more employees.
- c) Employees P.F. and Miscellaneous Provision Act 1952:- The Act provides for monthly contributions by the Employer plus workers @ 10% or 8.33%. The benefits payable under the Act are:
  - (i) Pension or family pension on retirement or death, as the case may be.
  - (ii) Deposit linked insurance on the death in harness of the worker.
  - (iii) Payment of P.F. accumulation on retirement/death etc.
- d) Maternity Benefit Act 1951:- The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
- e) Contract Labour (Regulation & Abolition) Act 1970:- The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Engineer by Law. The Principal Engineer is required to take Certificate of Registration and the Contractor is required to take licence from the designated Officer. The Act is applicable to the

establishments or Contractor of Principal Engineer, if they employ 20 or more contract labour.

- f) Minimum Wages Act 1948:- The Engineer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act, if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employments.
- g) Payment of Wages Act 1936:- It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
- h) Equal Remuneration Act 1979:- The Act provided for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.
- i) Payment of Bonus Act 1965:- The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs.3500/- per month or less. The bonus to be paid to employees getting Rs.2500/- per month or above upto Rs.3500/- per month shall be worked out by taking wages as Rs.2500/- per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.
- j) Industrial Dispute Act 1947:- The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- k) Industrial Employment (Standing Orders) Act 1946:- It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the State and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Engineer on matters provided in the Act and get the same certified by the designated Authority.
- l) Trade Unions Act 1926:- The Act lays down the procedure for registration of trade unions of workmen and Engineers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.
- m) Child Labour (Prohibition & Regulation) Act 1986:- The act prohibits employment of children below 14 years of age in certain

occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.

- n) Inter State Migrant Workmen's (Regulation of Employment & Conditions of Service) Act 1979:- The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, travelling expenses from home upto the establishment and back, etc.
- o) The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996:- All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Engineer of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as Canteens, First-Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Engineer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.
- p) Factories Act 1948:- The Act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.

### **3. ARBITRATION (GCC Clause 25.3)**

The procedure for arbitration will be as follows:

- (a) In case of any dispute or difference arising between the Employer and the Contractor relating to any matter arising out of or connected with this agreement, such disputes or differences shall be settled in accordance with the provisions of Arbitration and Conciliation Act,

1996. The parties shall make efforts to agree on a Sole Arbitrator and only if such an attempt does not succeed, a Arbitral Tribunal consisting of 3 arbitrators, one nominee arbitrator each to be appointed by the Employer and the Contractor and the third arbitrator to be chosen by the two arbitrators so appointed by the parties to act as Presiding Arbitrator shall be considered. In such a situation, the party invoking the arbitration clause shall first provide the name of its nominee arbitrator and thereafter the other party shall provide the name of its nominee arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the Secretary to Government of Punjab, Department of PWD (B&R).

- (b) The venue for the arbitration proceedings shall be Chandigarh, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.
- (c) The decision of the majority arbitrators shall be final and binding upon both the parties. The cost and expenses of arbitration proceedings including fee of the Arbitral Tribunal will be paid as determined by the Arbitral Tribunal. However, the expenses incurred by each party in connection with the preparation, presentation etc. of its pleadings, replies etc. as also the fees and expenses paid to the counsel appointed by such party shall be borne by each party itself.
- (d) Performance under the Contract shall continue during the arbitration proceedings and payments due to the Contractor by the Employer shall not be withheld, unless they are the subject matter of the arbitration proceedings.

**NOTE: -** Wherever there is a conflict or inconsistency between the “Special Conditions of Contract” and the other Conditions of Contract, the provisions stipulated in the “Special Conditions of Contract” shall prevail over and supersede those appearing in the other Conditions of the Contract.

**VOLUME – 1**

**SECTION 4**

**CONTRACT DATA**

**CONTRACT DATA****Clause Reference  
With respect to  
Section - 3**

Item marked "N/A" do not apply in this Contract

1. The Employer is Governor of the State of Punjab (India) [Cl.1.1]  
Assignee Name Chief Engineer (Infrastructure Projects)  
Pb. PWD (B&R) Branch, Chandigarh.  
Address Chief Engineer (Infrastructure Projects)  
Pb. PWD (B&R) Branch,  
S.C.O No. 341-42 Sec. 34-A, Chandigarh
  2. The Engineer is Executive Engineer, [Cl.1.1]  
Constn. Division PWD B&R Br., Rupnagar  
Name of Authorized Representative (Will be intimated later)
  3. The Dispute Review to be appointed by [Cl.1.1]  
Expert Chief Engineer (IP)  
Pb. PWD (B&R) Branch  
Chandigarh (India)  
• Name : (Will be intimated later)  
• Address : (Will be intimated later)
  4. The Defects Liability Period is 2 Years from the [Cl. 1.1&35]  
date of completion
  5. The start date shall be 21 days from the date of [Cl.1.1]  
issue of Notice to proceed with the work.
  6. The Intended Completion Date for the whole of the [Cl.1.1,17&28]  
works is 15 months after Start Date with the [Cl.1.2&49.1]  
following Milestones:  
Milestones dates
- Mile Stones Physical work to be completed Period from date of start**
- Mile Stone 1: a) Arranging approval of designs 2 months  
b) Construction of coffer dams.  
c) Placing of cutting edge, casting of well curbs and well steining including sinking.  
d) Construction of abutments, cutting edge, casting of wells and sinking.
- Mile Stone 2: a) Construction of coffer dams including dismantling in case of completed well foundation. 9 months  
b) Placing of cutting edge, casting well curbs and well steining including sinking.  
c) Completion of sinking of well and well caps  
d) Construction of abutment including completion of sinking, dirt walls and caps etc.  
e) Completion of well caps  
f) Completion of pier, pier caps and abutment, abutment caps.
- Mile Stone 3: a) Providing and fixing of POT/PTFE bearing as per approved design. 12 months

- b) Casting of super structure of bridge including providing and laying in position centering and shuttering duly sported from piers and maintenance free board.
  - c) Earth work on approaches providing of GSB, Wet mix, Macadam, Primer Coat.
  - d) Cont. of CC apron, Blocks stone boulder in wire creates and pitching
- Mile Stone 4: a) Completion of super structure works in all respects. 15 months
- b) Providing and fixing of expansion joints for bridge.
  - c) Construction and completion of anti crash railing, providing and fixing Drainage spouts
  - d) Providing and laying Deck Slabs etc.
  - e) Providing and fixing Signage.
  - f) Work completion in all respects.
  - g) Earth work on approaches providing of GSB, Wet mix, Macadam, Primer Coat.
  - h) Cont. of CC apron, Blocks stone boulder in wire creates and pitching
  - i) Add tack coat, 75 mm thick BM 40 mm thick SDBC, kerb/channel, catch pites, chhutes, crash railing on approaches and misc. items
  - j) Pitching on side slopes, CC block in apron, and wire crates in apron.
  - k) Fixing of gantry board, traffic signage, painting to kerb/channel and road marking paint etc.
7. Site is located on: Crossing Nurpur Bedi Bunga Sahib road at Sarai Ka Pattan in Distt. Ropar. [Cl.1.1]
8. The name & Identification: Construction of High Level Bridge Over Satluj River (Including Approaches) crossing Nurpur Bedi Bunga Sahib road at Sarai ka Pattan in Distt. Ropar [Cl. 1.1]
9. The work consists: Construction of High Level Bridge Over Satluj River (Including Approaches) crossing Nurpur Bedi Bunga Sahib road at Sarai ka Pattan in Distt. Ropar [Cl. 1.1]

**GENRNAL****(A) Work of High Level Bridge over Satluj River**

Setting out, Construction of site office planning designing and construction of High Level Bridge over Satluj River ( Including Approaches) crossing Nurpur Bedi Bunga Sahib road at Sarai ka Pattan in Distt. Ropar as per approved drawings and MORT & H Specifications supplemented with relevant IRC Standards/ Guidelines, GAD as per structural drawings and design submitted by the Contractor and approved by Chief Engineer, Pb. PWD B&R Branch as per details included in the Bidding document with minimum clear length of bridge between inner ends of the abutments not less than 675.04 M with 7.5M wide clear metalled roadway with 1.5M MORT&H level footpath along with 0.45 metre wide anti crash concrete railing on inner side and two tier railing as per MORT&H / GAD on outer side safe for 2 lanes of "A" class loading or single lane of class 70 loading and combination thereof which ever gives worst effect and produces severe stresses in terms of :

Well foundation as per design submitted by the contractor and approved by the Engineer for piers of minimum 23.00 m depth as per relevant IRC standards including cutting edge, well curb, well steining, bottom plug, sand filing intermediate plug and top plug as per requirement including temporary works such as coffer dam and its dismantling.

Well foundations for abutments as per design submitted by the contractor and approved by the Engineer for abutments of minimum 23.00 m depth as per relevant IRC Standards including cutting edge, well curb, well steining, bottom plug, sand filing, intermediate plug and top plug as per requirement including temporary works such as coffer dam and its dismantling.

Suitable designed RCC abutment and abutment foundation as per IRC Standards to approved levels and alignments as per GAD, site requirements given in the Technical Data and specifications.

Suitable designed wall type piers and pier caps as per relevant IRC Standards supported on well caps and supporting in terms pedestals/ stoppers for POT/PTFE bearings of approved design as per requirements.

Suitably designed and constructed super structure as per relevant IRC standards safe for 2 lanes of "A" class loading or single lane of class 70-R loading and combination thereof which ever gives worst effect and produces severe stresses.

Providing and fixing suitably designed strip seal expansion joints with 15 years maintenance free guarantee extending over the full width of the bridge.

Construction of crash barrier with level footpath of approved design and provided with 2 No.75mm dia M.S. pipes for carrying services.

Finishing of deck with 50mm asphaltic concrete including tack coat and over 6m thick mastic asphalt complete in all respects as per provisions of the Contract Agreement to the entire satisfaction of the Engineer without

damaging existing Irrigation works; rectification of defects in the completed work during the defects liability period, and all other items of work as may be required to be carried out for completing the works in accordance with the approved drawings, specifications and provisions of Contract to ensure overall structural stability and safety.

**B) Work of Approaches to High Level Bridges**

1) Const. of 1200 m approach road (600m towards Bunga Sahib dn 600m towards Noorpur Bedi having 12m formation width, 7.5m metalled width consisting of 300mm thick GSB, 225mm thick stone aggregate of WBM/WMM specification, Primer Coat with bitumen @7.5kg/sqm, 75mm thick BM and 40mm thick SDBC complete as per MORT&H specifications.

2) Kerb/Channel precast or cast in situ along road side, catch pits, brick suite as per drawing.

**PROTECTION WORK TO APPROACHES**

1 Cement concrete M 20 blocks for a length of 130 m (100m u/s & 30m d/s) on each side in 12m wide apron as per drawing.

2 Stone boulder 18-40 kg in wire crates of length of 770m (500 u/s & 270m d/s) and 785 m (500m u/s & 285 d/s) on each side on apron as per drawing.

3) 1500 mm thick stone pitching over 300 mm thick filter media as per drawing.

C) Providing and fixing of signage i.e. cat eyes, informatory boards, cautionary board and delineators, traffic markings in hot applied thermoplastic paint and other road furniture for guidance and movement of traffic complete as per MORT&H Specifications supplemented with IRC Standards/ Guidelines as per GAD complete in all respects as per direction and to the entire satisfaction of the Engineer

D) All other contingent works as required for completion of work and submission of “as built drawings” and rectification of defects in the completed work during the defects liability period and all other items as may be required to be carried out for completing the work in accordance with drawings and provisions of Contract and to ensure structural stability and safety.

E) The technical bids shall be accompanied with detailed conceptual drawings giving complete structural details with specifications of all materials proposed to be used including mix of concrete in various components, specifications of expansion joints, bearings at various types of supports; details of piles and location of pile caps; size and shape of piers and pier caps; details and types of superstructure in various spans; retaining walls and crash barriers; electrical poles with wiring and luminars etc.

F. Complete methodology shall be submitted with the technical bid including construction schedule indicating all activities with total time, earliest starting time and latest finish time to complete the work within specified time period.

**G. Other Items**

Any other items as required to fulfill all contractual obligations as per the Bid documents.

Clause  
reference  
with respect  
to Section 3

10. The documents that shall form part of the Contract: [Cl.2.3.(9)]  
As per clause 2.3
11. The law which applies to the Contract is the law of Union of India [Cl.3.1]
12. The language of the contract documents in English [Cl.3.1]
13. Limit of subcontracting of the Initial Contract Price : 10%. [Cl.7.1]  
subject to approval of Engineer.
14. The Schedule of Other Contractors (will be supplied later on) [Cl.8]
15. The Schedule of Key Personnel as per Annex-II to Section I [Cl.9]
16. The minimum insurance cover for physical property, injury and death is Rs. 5 lakhs per occurrence with the number of occurrences limited to four. After each occurrence, contractor will pay additional premium necessary to make insurance valid for four occurrence always [Cl.13]
17. Site investigation report. - Appended to agreement [Cl.14]
18. The Site Possession Date shall be Date of award of contract. [Cl.21]
19. Fees and types of reimbursable expenses to be paid to the Dispute Review Expert.- (To be inserted later) [Cl.25]
20. Appointing Authority for the Dispute Review Expert is Chief Engineer (IP), PWD (B&R) Branch, SCO No. 341-42, Sector 34-A. Chandigarh (India). [Cl.26]
21. The period. for submission of the programme for approval of Engineer shall be 21 days from the issue of Letter of Acceptance. [Cl.27.1]
22. The period between programme updates shall be 30 days. [Cl.27.3]
23. The amount to be withheld for late submission of-an Updated programme shall be Rs.10.0 lakhs. [Cl.27.3]
24. The following events shall also be Compensation Events: [Cl.44]
- (i) Removal of underground utilities detected subsequently.
  - (ii) Significant change in classification of soil requiring additional mobilization by the contractor, e.g. ordinary soil to rock excavation,
  - (iii) Removal of unsuitable material like marsh, debris dumps etc. not caused by the Contractor.
  - (iv) Artesian conditions.
  - (v) Erosion, landslide.

- (vi) Presence of historical, archeological, or religious structures, Monuments interfering with the works.
- (vii) Restriction of access to ground imposed by civil, judicial, or military authority.
25. The Currency of the Contract is Indian Rupees. [Cl.46]
26. The formula (e) for adjustment of prices are:

R = Value of works as defined in Clause 47.1 of Condition of Contract.

**Adjustment for Labour component**

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

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

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

$V_0$  = the consumer price index for industrial workers for the State on 28 days preceding the date of opening of Bids as published by Labour Bureau, Ministry of Labour, Government of India.

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

$P_L$  = Percentage of Labour 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

$$V_C = 0.85 \times P_C/100 \times R(C_1 - C_0)/C_0$$

$V_C$  = increase or decrease in the cost of work during the month under consideration due to change in rates for local cement.

$C_0$  = The all India wholesale price index for cement on 28 days preceding the date of opening of Bids as published by 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 in the cost of steel procured by the Contractor shall be paid in accordance with the following formula.

$$V_S = 0.85 \times P_S/100 \times R(S_1 - S_0)/S_0$$

$V_S$  = increase or decrease in the cost of work during the month under consideration due to change in rates for steel.

$S_0$  = The all India wholesale price index for steel (Bars and Rods) on 28 days preceding the date of opening of Bids as published by 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**

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

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

$V_b$  = increase or decrease in the cost of work during the month under consideration due to change in 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 of IOC depot at nearest centre for the 15<sup>th</sup> day of the month under consideration.

$P_b$  = Percentage of bitumen component of the work.

#### **Adjustment of POL ( fuel and lubricant ) component**

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

$$V_f = 0.85 \times P_f/100 \times R(F_1 - F_0)/F_0$$

$V_f$  = increase or decrease in the cost of work during the month under consideration due to change in rates for fuel and lubricants.

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

$F_1$  = The official retail price of HSD at the existing consumer pumps of IOC at nearest centre for the 15<sup>th</sup> day of the month under consideration.

$P_f$  = Percentage of fuel and lubricants component of the work.

**Note :** For the application of the clause the price of High Speed Diesel oil has been chosen to represent fuel and lubricants group.

#### **Adjustment of Plant and Machinery Spares component**

(vi) 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:

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

$V_p$  = increase or decrease in the cost of work during the month under consideration due to change in rates for Plant and Machinery spares.

- $P_O$  = The all India wholesale price index for heavy machinery and parts on 28 days preceding the date of opening of Bids as published the Ministry of Industrial Development, 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, New Delhi.
- $P_P$  = Percentage of plant and machinery spares component of the work.

**Adjustment of Other Material component****Deleted**

**Note :** For the application of the clause, index the High Machinery and Parts has been chosen to represent the plant and machinery spares group.

The following percentage will govern the price adjustment for the entire contract

- |    |                                  |     |
|----|----------------------------------|-----|
| 1. | Labour – $P_L$                   | 25% |
| 2. | Cement – $P_C$                   | 16% |
| 3. | Steel – $P_S$                    | 15% |
| 4. | Bitumen – $P_b$                  | 6%  |
| 5. | POL – $P_f$                      | 6%  |
| 6. | Plant & Machinery Spares - $P_p$ | 7%  |
| 7. | Other Materials – $P_m$          | 25% |

**Total 100%**

27. The proportion of payment retained (retention money) [C1.48]  
shall be 6% from each bill subject to a maximum of 5% of final contract price.
28. Amount of liquidated damages for For Whole of work [C1.49]  
delay in completion of works or (1/2000)th of the Initial  
delay in completion of any Contract Price, rounded off  
milestone to the nearest Thousand,  
per day
29. Maximum limit of liquidated 10 percent of the Initial [C1.49]  
damages for delay in completion Contract Price rounded off  
of work to the nearest thousand.
30. Amount of Bonus for early ½ percent for every week [C1.50]  
completion of whole of the of the work completed  
works ahead of schedule.
31. Maximum limit of bonus for early 5 percent of the Contract [C1.50]  
completion of work. Price Rounded off to the  
nearest thousand
32. The amount of the advance payment are :

	<b>Nature of Advance</b>	<b>Amount (Rs.)</b>	<b>Conditions to be Fulfilled</b>
i.	Mobilization Advance	5% of Contract price	a) On application by the Contractor, mobilization advance against bank Guarantee to the extent of 5% of the Contract price may be paid to the contractor at an interest rate of 12% per annum after the fulfillment of the following conditions before payment. The contractor shall have collected at site usual machinery and material valuing at least equal to 5% of the initial contract amount.
		5% of Contract Price	b) The Contractor shall be entitled to, on request, additional mobilization advance upto a maximum of 5% of the initial contract amount against bank guarantee, this mobilization advance shall e paid in stages subject to the condition that the contractor shall have physically completed work equivalent to the percentage of the mobilization advance applied. The 12% rate of interest per annum will be charged on mobilization advance.
ii	Deleted		
iii	Secured advance for non-perishable materials brought to site	75% of	<p>a) the materials are in-accordance [Cl.51.4] with the specification for works.</p> <p>b) Such materials have been delivered to site, and are properly stored and protected against damage or deterioration to the satisfaction of the Engineer. The contractor shall store the extra material in measurable Stacks.</p> <p>c) The Contractor’s record of the requirements, orders, receipt and use of materials are kept in a form approved by the Engineer and such records shall be</p> <p>available for inspection by the Engineer.</p> <p>d) The Contractor has submitted with his monthly statement the estimated value of the materials on site together with such documents as may be required by the Engineer for the purpose of valuation of the materials and providing evidence of ownership and payment thereof;</p> <p>e) Ownership of such materials shall be deemed to vest in the Engineer for which the Contractor has submitted an Indemnity Bond in an acceptable format; and</p>

f) The quantities of materials are not excessive and shall be used within a reasonable time as determined by the Engineer.

(The advance payment will be paid to the Contractor no later than 28 days after fulfillment of the above conditions).

33. Repayment of advance payment for mobilization: [Cl.51.3]  
 The recovery of mobilization advance and interest thereof shall stand start when 20% of the work is completed and shall be fully made when 80% of the work stands completed provided that the loan shall be completely repaid prior to the expiry of the original time for completion pursuant to Clause 17 and 28.
34. Repayment of secured advance: [Cl.51.4]  
 The advance shall be repaid from each succeeding monthly payment to the extent materials [for which advance was previously paid pursuant to Clause 51.4 of G.C.C.] have been incorporated into the Works.
35. The Securities shall be for the following minimum amounts equivalent as a percentage of the Contract Price : [Cl.52]  
 Performance Security for 5 per cent of contractor price plus  
 Rs ..... (to be decided after evaluation of the bid) as additional security in terms of ITB Clause 29.5.  
 The standard form of Performance Security acceptable to the Engineer shall be an unconditional Bank Guarantee of the type as presented in Section 8 of the Bidding Documents
36. The Schedule of Operating and Maintenance Manuals: 15 days after completion [C1.58.1]
37. The date by which “as built” drawings (in scale as directed) in 2 sets are required in within 28 days of issue of certificate of completion of whole or part of the work, as the case may be. [C1.58.1]
38. The amount to be withheld for failing to supply “as built” drawings by the date required is Rs. 10 lakhs. [C1.58.2]
39. The following events shall also be fundamental breach of contract : “The Contractor has contravened Sub-clause 7.1 and Clause 9 of GCC.” [C1.59.2]
40. The percentage to apply to the value of the work not completed representing the Engineer’s additional cost for completing the Works shall be 20 per cent. [C1.60]

**VOLUME – II**

**SECTION 5**

**TECHNICAL SPECIFICATIONS**

**TECHNICAL SPECIFICATIONS****CLAUSE 1. SPECIFICATIONS**

- A)** The contractor shall execute the whole and every part of the work in the most substantial and workmanship like manner both as regards to material and otherwise in every respects strictly in accordance with the following specifications with latest amendments upto the date of tendering.
1. I.R.C./MORT&H/I.S. Codes/AASHTO/BS in that order.
  2. Punjab P.W.D. Specification where specifications at S.No. 1 are not applicable or available.

Note :1 If there are any conflicting provisions in IRC/IS codes, the provision in IRC Codes will have precedence over the relevant conflicting provisions in IS code/MORT&H specifications/PWD specifications.

Note :2 Specifications stipulated above notwithstanding the technical provisions provided in this DNIT shall be followed strictly.

**(B) MAKES OF MATERIALS**

Cement	OPC 43 /53 grade of L&T/Vikram/ ACC/Gujrat Ambuja / Shree / JK make.
Steel	Fe 415 grade TMT bars of SAIL /RINL/ TATA
Bitumen	85/25-grade bitumen, 60/70 grade bitumen and modified bitumen from IOC/ HPCL/ BPCL.

**CLAUSE 2. PITS AT SITE PROHIBITED**

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

**CLAUSE 3. CO-RDINATION WITH OTHER AGENCIES**

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

**CLAUSE 4. TECHNICAL STAFF**

The technical staff shall be available at site at all time. In case the contractor fails to employ the minimum technical staff or fails to ensure their attendance/presence, recovery shall be made from his bills at the rate of twice the average pay of corresponding staff working with the Public Works Deptt.

**CLAUSE 5. PERFORMANCE TEST**

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

**CLAUSE 6. QUALITY CONTROL ON WORKS AND MATERIAL.**

6.1 The contractor shall be responsible for the quality of the work in the entire construction work within the contract. He shall therefore have his own independent and adequate set up for ensuring the same.

6.2 The Engineer shall inspect the work from time to time during and after the construction and get the quality of the work tested (By himself), By his quality control and testing units or by any other agency deemed fit by him ) Generally as per the requirements of the Hand Book of quality control for the construction of the Roads and Runways (IRC spl. Publication ) as per MORT & H specification. Additional test may also be conducted where, in the opinion of Engineer- in – charge need for such tests exists. In the absence of clear indications and frequency of tests for any item in the above mentioned publication. Procedures and tests as directed by the Engineer shall be followed.

6.3 The contractor shall provide necessary cooperation and assistance in obtaining the samples for tests and carrying out the field tests as required by the Engineer- in –charge from time to time. This may include provision of labour, attendance assistance in packing and dispatching and any other assistance considered necessary in connection with the test. For the work of other material over the finished layer shall be done after obtaining permission from the Engineer- in- charge

6.4 Similar permission shall be obtained in respect of other items of work before proceeding with the next stage of construction.

6.5 The contractor shall carry out modification in the procedure of work, If any as directed by the Engineer at his own cost.

6.6 works falling short of quality as per tests indicated above shall be rectified by the contractor as directed by the Engineer at own cost.

6.7 For testing the sample of soil, soil mix granules material and bituminous mix. aggregates cores etc. in the require quantity and from diamond core cutter shall be supplied to the Engineer-in-charge by the contractor at his own cost.

6.8 For cement, bitumen, mild steel, high tensile steel, bearings, old concrete and similar materials where essential tests are to be carried out at the manufacturer's plants or at the laboratories other than the site laboratories the cost of samples, sampling, testing and urnishing of test certificates shall be borne by the contractor. He shall also furnish the test certificates to the Engineer.

6.9 For testing of the cement concrete at site during construction, arrangement for supply of samples, sampling, testing and supply of test result shall be made by the contractor as per the frequency and number of test as mentioned in the Hand Book of quality control for the construction of Quality control for the construction of roads and runways and relevant IRC-codes for bridge works.

6.10 The method of sampling and testing of the materials shall be as required by the Hand Book of quality Control for construction of roads and runways IRC Publication or relevant IRC/BIS specifications, or as apprised by the Engineer-in-charge.

6.11 Where the Engineer considers that in the interest of the control of the quality on materials or workmanship, modifications, are necessary, such modifications shall be carried out by the contractor at no extra cost.

The Lump Sum amount tendered shall be deemed to be inclusive of all costs of the provision indicated in the above mentioned clauses.

#### **CLAUSE 7 : SURVEYING AND MEASURING EQUIPMENTS**

Equipment's for surveying and measurement on the work shall be procured by the contractor for his use. The same shall also be made available to the Engineer at the site for any work connected with the contract with out any additional charge.

#### **CLAUSE 8 : Arrangement of sources of supply for Earthwork for embankment construction and other material.**

The materials for embankment construction shall be obtained from areas to be approved by the Engineer. The responsibility for arranging and obtaining the land for borrowing or exploiting in any other way shall rest with the contractor, who shall ensure smooth and uninterrupted supply of the quantity required in construction period.

Similarly, the supply of aggregates for construction for construction of road pavement shall be from quarries approved by the Engineer. Responsibility for

arranging uninterrupted supply of materials from the source shall be that of contractor.

## **CLAUSE 9 :. SITE CONDITIONS, CLIMATIC CONDITION, MARKETING**

### **FACILITIES**

The detailed particulars of these conditions/facilities are as per Annexure (A&D)

## **CLAUSE 10: SETTING OUT OF WORKS**

- 10.1 The works shall be set out in accordance with finally accepted designs by the department.
- 10.2 The setting out of works shall be consist of establishment of reference pillars, the layout of bridges and its central line according to approved site plan. For this purpose, any permanent bench mark or reference pillars established during the survey, if available, shall be located or alternatively, the setting be done with reference to the permanent, feature i.e. pillars to be fixed at site and shall be got approved from the Engineer. The center line of bridge shall be extended in both ends to at least 15 meters from the center line of the pillars located not less the bridge. They are in no way disturbed drawing the period of constriction. Apart from these two other reference pillar shall be established on each band to eliminate the need of orienting the theodolite every time with help of pillars on the opposite bank. These reference pillars shall be connected with 60 mt permanent features at site so that they can be correctly relocated in case they get disturbed during the construction period
- 10.3 For the layout work and establishing the center line of the bridges only one steel tape shall be used throughout the work and where work is done by traversing, the traverse shall be a closed bound in case of minor errors these should be corrected by interpolation and the layout and the center line pillars got approved from Engineer – in – charge.
- 10.4 The center line of the bridges, pillars, abutments and the foundation shall be established by theodilite total station and the center marks shall be hatched on the embedded in concrete pillars of such dimensions and constructed at such intervals and places as may be directed by the Engineer.
- 10.5 The contractor shall be responsible for the true and proper setting out of the works and all duties concerning the establishments of bench marks, permanent Theodolite stations, center line pillars etc. For performing all the functions necessary at commencement and during the progress of the work till final completion of the items of work which shall be carried out by the contractor at his own cost.

**CLAUSE 11. UTILITY SERVICES :**

Provision will be made for accommodation of telephone conduits telegraphics and electrical wire etc by embedding 2 no. MS pipes of 75 mm dia ISI marked in side the raised platform and one no. MS pipe of 50mm dia ISI marked for electrification of bridge as shown in the drawing on either sides of the bridge along with suitably spaced junction boxes (at least 2 no per span) on each side as approved by engineer – in charge. The lump sum cost will cover provision these arrangements. A load of 50 Kg. per meter length on either side may be assumed for the purpose of design of bridge.

**CLAUSE 12:** Pier wells shall be checked for one span dislodged condition without any extra cost.

12.1 The lump sum rate shall include cost of dewatering, if involved in any item, which will be done by the contractor at his own cost. Nothing extra shall be paid for dewatering.

**CLAUSE 13: DESIGN LOADING****13.1 DESIGN LOADING FOR FOUNDATION AND SUB-STRUCTURES**

The foundation and sub-structure shall be designed as per loads and forces given in IRC-78-2000 “Standard Specifications & Code of Practice for Road Bridges, Section-VII – Foundation & Substructure (Second Revision) with latest amendments.

**13.2 DESIGN LOADS FOR SUPER-STRUCTURE**

The super-structure shall be designed for loads and forces as given IRC: 6 – 2000 “Standard Specifications & Code of Practice for Road Bridges, Section-II – loads and stresses (Fourth Edition) with latest amendments. In addition the super structure shall be design to cater the differential temperature gradients as per BS 5400 (latest edition) for waterproof surfacing.

**13.3 LIVE LOADS**

The bridge shall be designed for live loads of IRC Class 70-R loading or of IRC Class “A” loading or a combination of these loadings that can be accommodated within the carriageway to produce most severe stresses as per guidelines of IRC 6-2000.

**13.4 SEISMIC COEFFICIENT**

The horizontal seismic coefficient shall be considered as per provisions in IRC-6-2000 (Bridge Code-Section II) (latest revision) with latest amendments. Importance factor of 1.5 shall be considered in design.

**14 SPECIFICATIONS****14.1 General**

- a). The design of approaches to High Level Bridges and their construction shall be strictly in accordance with the stipulation under clause 1 of technical specifications
- b) If there is any conflicting provisions in the bidding document and various IRC Code of Practices, then provisions of the bidding document shall take precedence. If there are any conflicting provision in the departmental tender drawing (GAD) and the written bidding document the provisions of later shall take precedence.
- c) The Contractor shall submit detailed GAD / Drawings at design / execution stage ensuring conformity to GAD appended with the bidding documents / DNIT and also as per MORT&H specifications (latest edition) supplemented with latest amendments, IRC code of practices / standards. The tenderer's drawing showing the proposed structure for the work shall give approximate dimensions of various components of the bridge structure as envisaged by the tenderer, so that it can be fairly established from perusal of the drawings that all the technical requirements would be met with. However, the arrangements proposed by the tenderer shall be subject to further scrutiny and modification (as per provision of bidding document) at the time of detailed designed scrutiny and approval of Chief Engineer. Any change made by Chief Engineer in the structural drawings shall be binding without any extra cost.

Note: all the books, codes and specifications etc. referred to in the DNIT with latest publications and amendments issued up to the date of tender shall be applicable.

- D Stresses in per stressing steel will be as per relevant ISI code Manufactures test certificate or actual test which ever gives least values.

**14.2 SUB SOIL INVESTIGATIONS**

Wherever required the sub surface exploration shall be carried out as per IRC – 78 -2000 Bridge code sec VII and the test data shall be furnished to the department for the purpose of design. The cost of these explorations including furnishing of test data shall be deemed to be extra and a separate rate per meter depth for sub soil exploration and furnishing of test data in accordance with IRC – 78-2000 (bridge code See VII) shall be quoted by the contractor as mentioned in schedule S- II. Bore diameter will be minimum 75 mm. Any exploration carried out by the time on its own will not be considered relevant to the contract and no claim for any payment shall be entertained.

14.2.1 Not with standing anything stipulated in the specification steel bars having a diameter less than 10 mm dia shall not be used as structural reinforcement except for meshes. Links in railing or any components of the bridge allowed by the chief engineer.

### **14.3 FOUNDATIONS.**

14.3.1 While checking the stresses at the base of the foundation it shall be ensured that

under worst combination of forces there is no uplift pressure.

14.3.2 Type of foundation both for piers and abutment shall be as per departmental tender drawings, Scour allowance, if any, shall be duly accounted for in design. of foundation.

The weight of cutting edge of well curb for bridge shall not be less than 90 kg. per metre length & well curb shall be provided as per IRC 78-2000

### **14.3.3 PROVISION OF DIVERSION CHANNEL OR COFFER DAM**

For sinking of wells or open foundation or pile foundation as the case may be, if the diversion of channel/dewatering/slush removing etc. or coffer dam construction for any work becomes necessary it shall be done by the contractor at his own cost. Nothing extra shall be paid on this account.

### **14.3.4 WELL SINKING**

The tender shall cover the sinking of wells wherever required through all types of strata met with at site and all methods of sinking including the cost of services of divers and of other equipments ancillary to removal of boulders, dislodging isolated obstructions below the cutting edge or inside the well and such other operations as may be required for sinking of well including the dewatering chiseling use of divers etc. for taking the wells to the approved design levels. The Department may required the contractor to carry out well sinking by water jetting method or any other method approved by the competent authority and nothing extra shall be payable on this account.

**14.3.5** The steining thickness of the well shall be calculated as per IRC-78-2000 STANDARD specifications code of practiced for road bridges section VII. Decision of the accepting authority in this regard shall be final and binding.

**14.3.6** The steining of well shall be constructed in stages and the wells sunk vertically as far as possible to the final levels. The account for any possible tilt and shift in the wells during sinking designs of the wells will take into consideration the following tilts and shifts as per clause 710.4(IRC-78-2000).

a) TILTS : i.e. the deviation of well from vertical position. One in eighty (1 IN 80) in a resultant direction.

b) SHIFT- i.e. 5% of outside diameter of circular well and to minimum outside dimension of well of another shape or 6" (150mm) which ever is less.

14.3.7 It the actual tilts or shift in any well exceeds the limits mentioned in 13.6.6 above, the work may be accepted only on written request of the

contractor, subject to safety of the structure, established by submitting calculation for founding, pressure and steining stresses etc. at various levels for actual tilt and shift and any remedial measure required to bring the stresses within the permissible value (such as increase in the dimension of well to bring the stresses within the permissible value or increase in the dimension of well cap, provision of dummy weights on the well cap, adjustment of span length etc). The cost of all such remedial measures would be borne by the contractor and he would carry them out without claiming any extra cost from the Government, and recovery shall be made as per MOST specifications for roads and bridges works 4th edition with latest amendments.

## **15 BOTTOM PLUGGING OF WELLS.**

The bottom plug shall extend to a level not less than 300mm above the top of well curb and shall have a minimum cement contents of 363Kg.Per Cum and a slump of about 150mm, inverted dome shaped surface shall be ensured under the well for bottom plug.

**15.1** Dome shall extend  $D/6$  below the bottom of cutting edges. All efforts will be made to achieve a sump depth of  $D/6$  from bottom plugs but in case formation of such sump is not possible at site due to adverse soil conditions the tenderer could be allowed to plug the well with sump depth actually possible at site subject to final adjustment. ("D being outer diameter of well). Soundness of two bottom plugs as per choice of Engineer-in-charge shall be tested as per provision to MOST clause 1208 latest edition which is reproduce below :

" The soundness of bottom plug may be tested by the dewatering well by 5 metre below the surrounding ground water level and the checking the rise of water. The rate of rise shall be preferably be less than 10cm per hour. In case of the rate of rise is higher then remedial measures as directed by the Engineer shall be taken by the Contractor at his own cost. " The test shall be done not earlier than fourteen days after concreting.

## **15.2 SAND FILLING.**

The dredge hole of the wells shall be filled up with local clean sand.

## **15.3 TOP PLUG**

At least one metre thick top plug shall be laid on top of the sand filling, if laid at the maximum scour level. However thickness would be reduced to 500mm when laid immediately below well cap.

**15.4** The top plug shall be laid in cement concrete as per MORT&H specifications.

- 15.5** Where top plug is provided at maximum scour level the wells shall be assumed to be filled with water over the top plug level for the purpose of design.

## **16 WELL CAP**

Well cap shall be RCC solid slab type. All well cap shall be so laid that the top of the well caps is not higher than that indicated in the Department GAD.

- 16.1** LWL/SSWL shown in the general arrangement drawing attached with DNIT is only for general reference. Any variation in LWL/SSWL during execution of work shall not entitle the contractor for any extra payment on this account whatsoever.

## **CLAUSE 16: PIERS ABUTMENT AND /WING WALL/RETURN WALL.**

Piers abutments and wing wall/return walls shall be solid reinforced cement concrete structures.

- 16.1** The dimensions of the piers shall be so chosen that the obstruction to flow is within limits as prescribed in GAD. The clear waterway and length of bridges/wing walls shall not be less than chosen as per GAD/DNIT.

### **16.2 ABUTMENTS.**

Only non spill through type abutment shall be adopted. Filter media behind abutment and wing walls shall be as per IRC-78-2000.

### **16.3 PIER CAPS AND ABUTMENTS CAPS.**

16.3.1 Pier caps and abutment shall be in reinforced cement concrete.

16.3.2 The height of pedestals shall be limited to 350 mm.

## **CLAUSE 17: BEARINGS**

The bearing shall be POT / POT , PTFE , Type. The bearing wherever adopted shall conform to the requirements specified for bearing in IRC:83-2002 ( Part-III). The bearing shall be procured from the firms approved by MOST and 15 yrs. Cost free Maintenance Guarantee shall be obtained from the manufactures by the contractor and be made available to the department at the time of installation. Manufacturer's product and rate catalogue shall be furnished along with the design of the bearing.

- 17.1 Use of mortar pad bearings & metallic bearings shall not be permitted.

- 17.2 For bearings a combination of plates of different metals which are likely to result in electrolytic action shall not be permitted. For example, Copper plates interposed between mild steel plates shall not be permitted.
- 17.3 inspection and testing of bearing by the director General of supplies and disposals during manufacture is essential. The contractor shall have to produce the necessary certificate and inspection marks from the director General of supplies and disposals as his on cost the test load for bearings shall be 1.5 times the designed load/load requirement which ever is more.
- 17.4 All the bearings shall have dimensional accuracy as per relevant IS/BS standards.
- 17.5 Deleted.
- 17.6 X-ray and Gamma Rays examination of castings of thickness more than 200mm (8 inches) shall have to be carried out at the contractor's cost.
- 17.7 (i) To resist horizontal forces, points or line contact surface shall be avoided.  
(ii) Suitable arrangements against uplift due to Earthquake shall be provided.
- 17.8 The contractor shall ensure that the bearings are central at the end of the defects liability period, except, for calculated residual span shortening which is yet to take place.
- 17.9 Provision shall be made for possibility of lifting the super-structure for replacement of bearings for all spans of bridge. Procedure for replacement as well as stresses involved shall be made available along with design keeping in view the provision of IRC:83-1999.

**CLAUSE 18: SUPER STRUCTURE**

- 18.1 The superstructure arrangement envisaged by the department is shown in GAD. The alternative designs, if any shall not provide for a formation level higher than that given in the GAD. Further the spacing of the diaphragms shall not be more than 30 times the minimum thickness of the web span length shall be minimum 35 meter c/c of expansion joints and all the spans shall be of uniform lengths.
- 18.2 If the alternative design proposed an arrangements of RCC deck slab and pre-stressed concrete girders, then the inset of the girder in the deck slab shall not be allowed and entire deck slab shall be laid over the top of the main girders.
- 18.3 Any rational method of grid analysis (e.g. methods of harmonic analysis or isotropic plate theory or finite elements method) shall be used for

transverse distribution of live loads among longitudinal beams or for design of deck slabs ( without girders)

- 18.4 In case continuous deck is provided differential settlement of 25 mm or as per IRC -78-2000 which ever is more, shall be accounted for in the design. Gross value of moment of inertia and instantaneous value of modulus of elasticity shall be considered for evaluating effects of continuity.
- 18.5 The quotations for alternative designs if any should provide for the formation level as given in the design date
- 18.6 As per departmental superstructure shall be as indicated in the GAD(General arrangement Drawing) and if the tenderer choose to adopt some other arrangements, he will give the details of proposed arrangements.
- 18.7 In case of design the entire responsibilities will be with contractor only. The department will not bear any responsibility.
- 18.8 Any extra item will be executed with prior permission of department only
- 18.9 If any additional provision is necessary to be made in the structure to cater for army requirements, rates for the same would be arrived as per Punjab CSR or based on Market rate + 10% contractors profit including over head charges.
- 18.10 For all super structure items piers abutments wing walls/return walls and for concerting well staining only steel shuttering shall be used.
- 18.11 Concrete used in super structure shall be controlled concrete and shall be weigh batched
- 18.12 Design criteria for pre stressed concrete girder shall be as per IRC 18-2000 or other relevant code for post tensioned/ pre tensioned concrete.
- 18.13 The founding level for wells can be raised above that stipulated in DNIT by a maximum of 2.0 m Subject to codal provision regarding grip length. The corresponding decreases in allowable safe bearing capacity shall be assumed @ 1.0 t/m<sup>2</sup> per meter rise of founding level. Any deviation in founding level from that shown in DNIT is subject to financial adjustment

#### **CLAUSE 19 OTHER ITEMS**

- 19.1 Wearing coat shall consist of 25mm thick mastic asphalt over 40 mm AC wearing coat laid as per MORT & 11 specification for purpose of design its load shall be assumed as that of 100 mm PCC wearing coat.

- 19.2 Expansion Joint elastomeric Strip seal type expansion joint procured from manufacturers approved by M.O.S.T be provided at the junction of units of superstructure 15 years cost free maintenance guarantee shall be made available by the contractor from the manufacturer and be made available to the department at the time of installation
- 19.3 The expansion joints shall be robust, durable watertight and replaceable. These shall be provided over the full width of Deck and follow the profile including Kerb, Foot Path and crash barrier.
- 19.4 Fabricated steel parts of the expansion joints shall be positioned accurately before the concreting of that portion of deck slab.  
Presence of manufacturer's representative and the time of positioning of embedded parts and installation of expansion joints is mandatory.

19.5 **PARAPETS/ RAILING**

Construction of the railing/ parapets should go well with superstructure, spans proposed and with the surrounding and add aesthetic appearance of the bridge and also justify the IRC codal requirements. Inner railing shall be of crash barrier and shall have a GI pipe 75 mm dia of high grade fitted into 16 mm thick steel plate @ 2m C/c and as approved by the Engineer – in – charge.

- 19.6 Crash barrier shall extend up to the end of retaining walls.

19.7 **WING OR RETAINING WALLS**

Suitably designed RCC wing walls on separate well foundations of the length as shown in GAD shall be provided so as to retain earth behind abutments and to prevent it from falling in to the bearing and the same is to be governed by IRC -78-2000 Clause – 715

19.8 **AESTHETIC REQUIREMENT**

The Bridge shall be well proportioned and shall be aesthetically pleasing for appearance the external finish shall suited to these requirements and be in harmony with nature and disposition of the material and surroundings. Only steel shuttering shall be used for all exposed R.C.C. works. Sharp edges of concrete shall be chamfered (10mm x 10mm).

**CLAUSE 20: LOAD TEST**

**20.1 LOAD TEST (OTHER THAN PILES)**

The Contractor shall carry out Load Test for all loads required to simulate the design assumptions on one foundation of each span of High Level Bridges. The foundation or super-structure to be tested shall be decided

by Engineer. In case the department decides not to carry out any or all load test specified herein, the contractor shall specify the rebate to be offered for each and all the tests.

## **20.2 LOAD TESTING**

20.2.1 Delete

20.2.2 Delete

20.2.3 Delete

20.2.4 If a load test on any part of the bridge or on a complete span of the bridge is required to be carried out and deemed necessary for any one or more of the clauses specified below:

- (i) the work test cubes failing to attain the specified strength;
- (ii) shuttering being prematurely removed;
- (iii) concreting being improperly cured; and
- (iv) any other circumstances attributed to the negligence or defective material or workmanship on the part of the contractor which in the opinion of the Engineer results in structure or part thereof being of less than the expected strength whatsoever the reason may be. The contractor shall make all arrangement for carrying out such tests to the entire satisfaction of the Engineer at his own cost and nothing extra is payable on this account.

20.3 If the department requires may further test to be carried out than that specified in clause 9.1 on foundation or any other component of the bridge on the complete superstructure, the contractor shall have to make all arrangements for carrying out same and make available results on the same with their interpretation to the Engineer. For these types of tests the contractor shall be entitled to payment as per schedule II In case any defect has been found in the structure, nothing shall be payable to contractor for the test.

20.3.1 In the event of load testing being ordered by the Engineer the contractor shall:

- (i) Prepare all necessary calculations and details of arrangements for such load testing well in time, the magnitude of the test, mode and method of carrying out the test, the application of loads, duration of keeping the loads, the equipment to be provided and observations to be made during and after placing the loads in position etc. and shall get the same approved from the Engineer well in time.
- (ii) Make all necessary arrangements for taking observations and the centering equipments etc. that may be needed for measuring the settlement, deflections, etc. required for the test to the entire satisfaction of Engineer.
- (iii) Provide Labour and make all observations during the test.

20.3.2 After the test the contractor shall submit a report on the results of the test. The Engineer shall then communicate as to whether the test has been satisfactory or not and if any further tests or reconstruction or strengthening are necessary to correct any faults revealed by the tests.

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

20.3.4 When the tests by the Engineer having been completed. The contractor shall remove the loading might still be on the bridge as well as on the surroundings.

#### **CLAUSE 21 : PROCEDURE FOR LOAD TESTING SUPER STRUCTURE**

Testing of super-structure shall be carried out strictly as per Annexure.

#### **CLAUSE 22: PROCEDURE FOR LOAD TEST SUB-STRUTURE**

Procedure Recommended By MORT&H/IRC Shall Be Adoped

#### **CLAUSE 23: Deleted**

#### **CLAUSE 24: Deleted**

**CLAUSE 25:** arrangements for cross camber – the cross camber in bridge deck shall be provided at slope of 2.5% and center cross camber shall be provided in deck slab.

#### **CLAUSE 26: DRAINAGE SPOUTS**

The longitudinal drainage shall be secured by means of drainage spouts fixed in the deck slab and at suitable intervals not exceeding 10 metre centre to centre and the detail of the spouts shall be as per MORT&H standard drawing relevant to the deck with notifications to ensure that the drained water does not fall on any structural member.

#### **CLAUSE 27: RIVER TRAINING AND PROTECTION WORK**

For river training/protection work/ guide bunds etc., the design and construction shall be based on the IRC-89-1997. The thickness of stone boulders pitching shall not be less than 1.5 metre over 30 cm thick filter media. The size of boulders in wire crate both in apron and in pitching shall be as 18-40 Kg. and size of crate shall be determined as per velocity and discharge considerations.

**CLAUSE 28: EARTHEN EMBANKMENT**

Construction of earthen embankment shall be with selected earth from approved borrow area at proctor density by vibratory roller as per specifications & directed by the engineer in charge (Ref. MORT&H specification) for road and bridge works section 2502.1 to 2502.6 river bed material/earth dredged from wells may be used in earthwork only if found conforming to desired specifications. No dredging for purpose of earthwork shall be made in the vicinity say 3.0 Km of the proposed structures.

**CLAUSE 28.1: FILTER MEDIA**

Filter media shall consist of broken/crushed stone aggregate of hard stone of nominal size as per IRC-89-1997 (free from disintegrated pieces deleterious and organic matter) laid under stone pitching of sloping faces of embankment.

**CLAUSE 28.2: BOULDERS FOR PITCHING & APRON**

Boulder weighing 18 to 40 Kg shall be used for apron and pitching in wire crates as per MORT&H specification.

**CLAUSE 29: TURFING WITH SODS**

Turfing shall consist of perennial forming grass on guide bund and approach slopes as directed by Engineer in charge as per section 307 of MORT&H specifications for roads & bridge works.

**CLAUSE 30: SUBGRADES**

Sub grades shall consist of earthen/miscellaneous back fills with approved material obtained from roadway and drain excavation, borrow pits or other sources. All embankment sub grades, earthen shoulders and miscellaneous back fill shall be constructed in accordance with the requirements of specifications and in conformity with the lines, grades and cross-section shown on the drawings or as directed by the Engineer in charge and compacted with vibratory roller as per MORT&H specifications for Roads and Bridge works sec. 305.

**CLAUSE 30.1: SUB-BASE**

Sub base shall consist of granular material having CBR value more than 30% and lay in uniform layer with motor grader and compacted with vibratory/static Roller to achieve the desired proctor density as per MORT&H specifications for Roads and Bridge works Sec. 401.

**CLAUSE 30.2: BASE**

Base shall consist of Laying & compacting clean graded crushed stone aggregates to WMM (wet mix macadam) laid and compacted in layers with vibratory/static rollers to achieve the designed protector's density as per MORT&H specifications for Roads and Bridge works Sec. 406.

**CLAUSE 30.3: PRIMER COAT**

Primer coat shall consist of laying medium setting emulsion @7.5 kg/10 sqm over granular surface as per MORT&H specifications for Roads and Bridge works Sec. 502.

**CLAUSE 30.4: TACK COAT**

Tack coat shall consist of laying medium setting coat emulsion @2.5Kg/10 sqm of surface area as per MORT&H specifications for roads and Bridge works Sec. 503.

**CLAUSE 30.5: BITUMINOUS MACADAM**

Bituminous macadam 75 mm thick shall consist of specified graded crushed stone aggregates mixed with bitumen of 60/70 grade with minimum contents of bitumen @ 3.40% of total weight of mix, with electronically operated hot mix plant and laid with sensor paver finisher and rolled with vibratory roller to achieve the desired density. The contractor shall get the mix and the work shall be carried out as per MORT&H specifications for roads and bridge works Sec. 504.

**CLAUSE 30.6: SEMI DENSE BITUMINOUS CARPET**

SDBC 40 mm thick shall consist of approved aggregates and bitumen of CRMB 55 grade with minimum contents of bitumen @5.00% of total weight of mix. The mix shall meet with the requirements set forth in table 500-15 page 181 of MORT&H specifications for Roads and Bridge works. The contractor shall get the mix design approved from the Engineer in charge before laying of any mix and the work shall be carried out in accordance with MORT&H specifications for Roads and Bridge works Sec. 508.

**CLAUSE 31: FIXING MS ANTI CRASH RAILING ON APPROACHES**

Railing on shoulders of the approaches shall consist of mild steel standard W section galvanized as per MORT&H/ASSHTO specifications for Roads and Bridge works clause 810. The railing shall be provided on the part

length of approaches on both sides. Any deviation in length of railing shall be subject to financial adjustment as per Schedule S-II.

**CLAUSE 32: ELECTRIFICATION**

All electrical fitting components should be ISI marked of approved sources and design. The spacing of steel electric lighting poles shall be provided on each side at 30m spacing (staggered spacing 15 metre c/c). The height of electric poles shall be 9m from the top of surface of carriage way. The main aluminum conductor wire shall be of 25 sq. mm 3.5 core PVC insulated armoured and served cable and the sub wires shall be 4 sq. mm made of copper. Adequate No. of junction boxes and electric panel shall be provided as per requirement and as approved by the Engineer in Charge. The electric lamp shall be of 250 watts sodium vapour lamp.

**CLAUSE 33: ECOLOGICAL BALANCE**

The contractor shall maintain the ecological balance by preventing deforestation, water pollution and defacing of natural landscape. The contractor shall so conduct his construction operation as to prevent and destruction, scarring or defacing of

natural surrounding in the vicinity of work or damage to any tree, scrub or water course unless any of same is specifically required to be cleared or removal for construction purpose. Such removal shall only be done with prior approval of Engineer who may require the contractor to compensatory plantation at his cost.

No separate payment shall be made for compliance with provisions of this clause and all costs shall be deemed to have been included in the bid.

The contractor shall make his own arrangement for the disposal of the spoils from the works to such place where the same shall not cause nuisance and should be acceptable to the authorities concerned.

**CLAUSE 34: PAINTING/CAT EYES, CAUTIONARY BOARDS, OVER HEAD GANTRY SIGN BOARDS**

15 cm wide thermoplastic road marking paint line in white colour shall be provided in front of crash barrier on both sides of the Bridge up to the end of approaches as per MORT&H specifications.

10 cm wide thermoplastic paint centre line in white colour shall be provided on approaches and Bridge deck as per MORT&H specifications.

Cat-eyes of approved design and make shall be provided at 10m interval on curves on both sides of the approaches to clearly define the curvature of carriageway as per MORT&H specifications.

Single legged cautionary sign boards 90×90×90 made of aluminum sheeting with micro prismatic sign of approved make shall be provided on both sides of bridge including MS angle support on curves complete in all respects as per MORT&H specifications.

Overhead gantry signage board made of aluminum sheeting with micro prismatic sign for 12 metre span having 7 metre clearance from finished road surface shall be provided on both sides of the bridge as per MORT&H specifications at location and matter shall be decided by the Engineer in charge.

**CLAUSE 35: WATER CHUTES & KERB CHANNEL ON APPROACHES**

Water chutes at interval of 20 meter on both sides of approaches shall be provided as per the cross section and specifications / as per design approved by the Department Kerb and Channel shall be provided along the metalled width of approach as per DNIT.

**CLAUSE 36: STONE PITCHING & APPRON**

Stone boulder pitching and apron shall be provided as per direction of the Engineer in charge. as shown in the drawing appended in DNIT 2 as per schedule of work. Any deviation in length shall be subject to financial adjustment as per schedule S – II

Certified that I/We have read and clearly understood the above terms and conditions.

**Signature of the tenderer**

**Executive Engineer  
Const. Divn. PWD B&R  
Ropar**

**1. WITNESS**

Name \_\_\_\_\_  
Address \_\_\_\_\_

**2. WITNESS**

Name \_\_\_\_\_  
Address \_\_\_\_\_

**ANNEXURE****LOAD TESTING****A. FOR SUPERSTRUCTURE****i) TEST LOAD**

The load for testing of any span of the superstructure shall be equal to 1.2 times the live loads plus impact. The arrangement for applying the test load on the bridge shall be decided and marked on the span to be tested, well in advance of the load test.

**ii) INSTRUMENTATION**

iii) The instrumentation for load tests shall consists of:

- (i) Devices for measurement of deflections, and
- (ii) Devices for measurement of temperature.

iv) Deflections shall be measured at critical locations as decided by the Engineer, by means of dial gauges fixed on firm supports, independent of the structure to be tested. These supports may be in the form of masonry blocks or heavy steel tripods driven into blast or any other convenient device which is not likely to be disturbed during the course of load testing.

v) Temperature shall be measured by the thermometers placed at the top of the bridge deck and below the deck, on the upstream and downstream faces.

**B TEST PROCEDURE**

i) Three days before the load testing, the deflections of the beams of the span under consideration shall be observed at hourly intervals alongwith the temperature observations without any superimposed load.

ii) Prior to load testing, the superstructure of the span to be tested shall thoroughly examined for any signs of distress (such as any existing hair cracks) and recorded to as to differentiate them from any distress and may occur during the load test. These signs of distress shall be closely watched during the tests.

iii) The position of the wheels for the critical vehicle and the worst positions on the deck shall be predetermined and indicated. The initial observations without loads shall be observed. Then the test loads shall be applied to the structure at the predetermined position to be approved by the Engineer depending upon the type of superstructure by increments of 20% with the interval of about 2 hours in between the load increments and the full load shall be maintained for a period of 24 hours.

- (iv) The temperature and deflections shall be observed at hourly intervals during loaded and in the final loaded position.
- (v) The load shall then to be removed by equal decrements of 20% with 2 hours intervals between the decrements and the hourly record of temperature and deflections made as before. The observed deflections shall be corrected and temperature effects by correlating the observed values (with the superimposed load) with those (without the superimposed loads) corresponding to similar hours of the particular days and similar temperatures, and the net deflections due to the superimposed load worked out.
- (vi) Alternatively, for applying temperature corrections, simultaneously observations may be made on a similar adjoining span without any load while the one being tested in loaded.

**CRITERIA FOR ACCEPTANCE**

The load test shall be treated as satisfactory, if:

- (i) The actual deflections after temperature corrections are equal to or less than the theoretical deflections.
- (ii) Within 24 hours of removal of load, the structure shows a recovery of at least 75% of the maximum deflection during the 24 hours under the maximum test load and
- (iii) The structure shows no signs of distress or defects during the load test and while keeping the maximum test load.

## Annexure-A

## Particulars of work site

## NEAREST RAILWAY STATION:

The nearest Railway Station is at Kiratpur Sahib which is 5 Km from bridge site.

Location : As shown in Index Plan.

## POSTAL FACILITIES

The nearest post office and telegraph office is at Kiratpur Sahib

- i) Name of the Road : Nurpur Bedi Bunga Sahib road
- ii) Distance of Site : 1.54 Km from Bunga Sahib
- iii) District : Rupnagar

## Design Parameters

## a) Hydraulic Data:

Particulars of Bridge					Hydraulic Data								
Sr. No.	Name of River	Chainage of road in Km	Length of Bridge in m	Length of Wing Wall m	Discharge cumsec	Mean design velocity m/Sec	Bed Level M	HFL M	Min. Vertical Clearance m	Bed Slope	Max. Scour level M		Propose span arrangement
											Abutment	Pier	
1.	Satluj River	8	676.28	11.0	13552	3.2	271.48	279.4	1.50 (Min..)	1:500	268.185	261.74	18 span 37.5 metre c/c of expansion joints

**b) Soil & Formation level particulars:**

S. No	Particulars of Bridge	Particulars of soil					Particulars of levels					
		Chainage KM	Max. Allowable bearing pressure ton/sqm. at Founding Level	Chesion (avg)	Silt Factor	Angle of internal friction	Bottom Founding well level M	Top level of Cap M	Deck level M	Lowest water level	Sub. soil water level	
1	Satluj River	8.00	44.50	44.50	0.0	2.0	30°	248.18	271.18	283.900	271.8	269.80

Note 1: Type of foundation : RCC circular well/double D well

Note 2: Chainage is taken off the Nurpur Bedi Road to Bunga Sahib from (BM) Kiratpur Sahib off take with respect to top of road line which is RL 283.03 m.

1.4. Length of approaches to Bridge over Satluj River at Sarai Ka Pattan is 600 metre on Nurpur Bedi Side and 600 towards Bunga Sahib side.

- a) The carriage way, raised kerb with concrete crash railing on Bridge shall be as per GAD.
  - b) Founding levels shall be shown in the table above/GAD.
  - c) In case where the contractor on his own desires to take the foundation to the level below the specified in the design data for design requirements, nothing extra will be payable to the contractor on this account. However, bearing capacity may be increased @ 1.0 t/m<sup>2</sup> for each metre increase in depth of foundation.
- 1.4.1 In this case of bridge across Satluj river, the length of approaches 1200m. The approaches shall be given a back slope of 1:2 (vertical: horizontal), that is width of the approach on each side of the existing ground level shall be equal to 12m plus four times the difference of height between existing bed level and formation level. The department shall secure due rebate from the payment to the contractor as per variation schedule S-II in case where approaches are existing and require widening only.
- 1.4.2 The well foundation shall be designed as per IRC:78-2000 ignoring relief due to skin friction in case of cohesion less soils.
- 1.4.3 The soil strata in wells are predominantly medium sand mixed with gravel. Nothing extra shall be paid for sinking through other strata or boulders if encountered during sinking.
- 1.4.4 Deleted
- 1.4.5 Notwithstanding the values given in DNIT or General Arrangement Drawing the maximum allowable Gross Bearing capacity shall be as follow.
- (i) Satluj at chainage 8000 : 44.50 t/sqm. at founding level 248.18 (from Nurpur Bedi side take off point)

### Annexure (B)

CONSTRUCTION OF HIGH LEVEL BRIDGE ON SATLUJ RIVER (INCLUDING APPROACHES) CROSSING NURPUR BEDI BUNGA SAHIB ROAD AT SARAI KA PATTAN IN DISTT. ROPAR.

Schedule of work:  
See Clause 11.1 to

Sr. No.	Description of various item of work
1.	Construction of high level bridge over Satluj river on Nurpur Bedi Bunga Sahibroad at sarai ka pattan in distt. ropar including approaches having minimum clear linear water way 654.64m at HFL as per DNIT and also with minimum clear length of bridge between outer ends of the DIRT WALL not less than 676.88M with 7.5 m clear road roadway and 1.5 M raised kerb along with 0.45metre wide Anti Crash concrete railing 0.3 m wide safe for 2 lanes of "A" class loading or single lane of class 70-R loading which ever gives worst effect and produces severe stresses.
2.	Suitably designed RCC wall type pier and pier foundation as required with proper depth depending upon the Max. Scour depth/levels as specified in DNIT.
3.	Suitably designed RCC abutment and abutment foundation to meet the site requirements given in the Technical Data and specifications commensurate with the design proposed with levels not higher than those specified in the DNIT.
4.	Properly designed POT / PTFE Bearing to support the decking system for road way.
5.	Properly designed approaches on both side of the Bridge.
6.	Suitable arrangement for expansion joint in deck slab including its procurement and fixing extending upto crash barrier.
7.	Providing and fixing drainage spout for drainage of rain water and wearing coat as per DNIT.
8.	Providing and fixing lightening on bridge including fitting etc. complete in all respect as per DNIT.
9.	Wing wall / dirt walls, return walls as may needed as specified in the DNIT with proper weep holes for drainage of rain water.
10.	Provision for carrying telephonic and electric lines etc. in proper embedded MS pipes in crash barrier/deck as per provision in DNIT.
11.	Load testing of foundation and superstructure.
12.	<p><b>Work of Approaches to High Level Bridges :</b></p> <p>1) Const. of 1200 m approach road (600m towards Bunga Sahib dn 600m towards Noorpur Bedi having 12m formation width, 7.5m metalled width consisting of 300mm thick GSB, 225mm thick stone aggregate of WMM specification, Primer Coat with bitumen @7.5kg/sqm, 75mm thick BM and 40mm thick SDBC complete as per MORT&amp;H specifications.</p>

	2) Kerb/Channel precast or cast in situ along road side, catch pits, brick suite as per drawing.
13.	<p><b>Protection Work To Approaches</b></p> <p>1 Cement concrete M 20 blocks for a length of 130 m (100m u/s &amp; 30m d/s) on each side in 12m wide apron as per drawing.</p> <p>2 Stone boulder 18-40 kg in wire crates of length of 770m (500 u/s &amp; 270m d/s) and 785 m (500m u/s &amp; 285 d/s) on each side on apron as per drawing.</p> <p>3) 1500 mm thick stone pitching over 300 mm thick filter media as per drawing.</p>
14.	Providing and fixing of road signage i.e. cat eyes, informatory boards, cautionary board and delineators, traffic markings in hot applied thermoplastic paint and other road furniture for guidance and movement of traffic complete as per MORT&H Specifications supplemented with IRC Standards/ Guidelines complete in all respects as per direction and to the entire satisfaction of the Engineer.
15.	All other contingent works as required for completion of work and submission of “as built drawings” and rectification of defects in the completed work during the defects liability period and all other items as may be required to be carried out for completing the work in accordance with drawings and provisions of Contract and to ensure structural stability and safety.

16. Providing the following machinery & equipments for office use in connection with the project:

- a) Computer Intel Core 2 Duo(2.0 GHz or higher), 945 chipset (or higher side), 1GM DDR2SD RAM,160GB HDD, Super Multi DVD drive, Multimedia Keyboard/Internet Scroll Mouse, USB port, PS2 multimedia speaker, Wireless LAN Card and Modem, 17” color TFT Monitor, windows XP Operating System (with media), Laser Printer HP 1005 MFP, UPS 0.7KVA(with 30 minutes backup) and all other accessories with 2 years **onsite** warranty, Norton Anti Virus 2007 (with two years subscription and warranty), MS Office **latest professional version** (media with license), and Computer Table & Chair. 2 Nos.
- b) Providing and supplying of Inspection vehicles “ **INNOVA G-4 MODDEL (TOYOTA)**” Diesel (or equivalent model as approved by the employer), Colours White, including running operation and maintenance charges up to 4000Km per vehicle per month by the contractor, upto the completion of the project or intended completion date, which ever is later. 1 No.
- c) Providing and supplying of Inspection vehicles “ **BOLERO JEEP SLX MODDEL (MAHINDRA)** ” Diesel (or equivalent 1 No.

model as approved by the employer), Colours White, including running operation and maintenance charges up to 4000Km per vehicle per month by the contractor, upto the completion of the project or intended completion date, which ever is later.

- d) 1 Set of IRC codes / publication for use in design office. 1 Set

**(The vehicles are to be placed at the disposal of office of Chief Engineer(IP)and PIDB& shall be transferred in the name of PIDB on completion of project or its termination)**

Note: 1. The machinery and equipment shall be the property of PIDB on completion of the project or its termination.

2. If the contractor fails to provide by the start date and thereafter maintain the machinery and equipment the Engineer on behalf of employer will do so at the risk and cost of the contractor.

- 4.** Any other item which is not covered above, but is provided in DNIT or GAD drawing shall also be constructed.

Executive Engineer,  
Constn. Division PWD B&R Br.,  
Rupnagar.

**VOLUME – III**

**SECTION 6**

**FORM OF BID**

FORM OF BID

Description of the Works \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**BID**

To :

Address :

1. We offer to execute the Works described above and remedy any defects therein in conformity with the conditions of Contract, specification, drawings, Bill of Quantities and Addenda for the sum (s) of

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ ( )

2. We undertake, if our Bid is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Engineer's notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the document.

3. We agree to abide by this Bid for the period of \_\_\_\_\_ days from the date fixed for receiving the same, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

4. Unless and until a formal Agreement is prepared and executed this Bid together with your written acceptance thereof, shall constitute a binding contract between us.

5. We understand that you are not bound to accept the lowest or any tender you may receive

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 2005

Signature \_\_\_\_\_ in the capacity of \_\_\_\_\_

Duly authorized to sign bids for and on behalf of \_\_\_\_\_

(in Block capitals or typed)

Address

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Witness

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Address

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Occupation

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**VOLUME – III**

**SECTION 7**

**BILL OF QUANTITIES/  
SCHEDULE OF PAYMENT**

**PAYMENTS**

The lump sum bid amount for the work as described in the contract data, as per general arrangement drawings and also described in Annexure 'B' (Schedule of Works) shall be paid as per details included in Schedule S-I for each component of the work described therein individually and where applicable on prorata basis for each individual components.

For any variations in the quantum of work the payments shall be made or the recovery shall be affected at rates as provided in Schedule S-II. For any item not included therein the payment shall be made or the recovery shall be affected as per details in Schedule S-III.

**ANNEXURE-C**  
**SCHEDULE - S-I**  
**SCHEDULE FOR INTERNAL PAYMENTS**

(Valid for Lump sum tender based on contractor design). For the purpose of interim payment, schedule S-1 given as under will be followed for the Construction of H/L Bridge Over Satluj River ( Including Approaches) crossing Nurpur Bedi Bunga Sahib road at Sarai ka Pattan in Distt. Ropar

**BILLING SCHEDULE FOR INTERIM PAYMENTS**

Sr. No	Description of Item	% of lump sum price
1	a) On establishment of site office and office equipments	0.50
	b) On approval of first set of drawings and calculations for piers and abutments.	0.50
2.		
	a) On laying first cutting edge and casting well curbs of on wells and construction of coffer dam.	2.30
	b) On casting of well	14.0
	c) On sinking of all wells.	5.0
	d) i) On bottom plugging , sand filling, Intermediate and Top plugging of well for all Piers/abutments.	2.80
	e) on casting of all well caps.	2.25
<b>3</b>	<b>SUB –STRUCTURE</b>	
	a) On casting all piers/abutments including weep holes	2.50
	b) on casting all pier caps/abutments caps including stoppers.	2.50
	c) on providing and fixing bearings.	1.50
	d) On laying filter media and back filling	1.50
4.	<b>SUPER-STRUCTURE</b>	
	a) On casting beams ribs diaphragm and prestressing wires.	11.00

	b) On casting of deck slab	9.00
	c) On prestressing	3.00
	d) On casting of railings and approach slab and anti crash railing.	1.50
	e) On fixing expansion joints and other fixed items such as drainage spout, MS pipes, Electric junction boxes.	1.00
	f) On laying wearing coat.	1.00
	<b>CONSTRUCTION OF APPROACHES</b>	
1	Earth work in embankment including compaction & completion of Diversion road	1.75
2	On laying and compaction of grander sub	0.70
3	On laying and consolidation of wet mix macadam	0.75
4	On application of Primer Coat, Tack Coat 75mm thick BM 40 mm thick SDBC	1.40
5	On providing of Kerb and channels	0.25
6	On const. of catch puts ohhutes, boundry pillars, 350mm dia pipes along approach road painting to kerbs/centre line, edge line	0.50
7	On providing of crash railing along approach	1.00
8	On installation of informatory boards, cat eyes, delineator, warning boards, Gantries etc.	0.50
9	On providing of two no staff cars as directed by engineer in-charges	0.40
	<b>Protection work</b>	
1	On completion of pitching work	2.50
2	On completion of apron work i) In wire crates ii) In CC block	21.00 7.00
3	Site clearance	0.40
	Total	100.00

**Notes :**

1. This payment schedule is for construction of Bridge. The schedule of payment for other options will be evolved within the above laid down parameters, later on subject to the condition that offers received are lowest and meets the requirements laid in bidding document.
2. Part work done on any of the above items shall be paid for on prorata basis at the time of submitting each interim bill.
3. Operation of Billing Schedule shall be used on average height of structure in any component and shall be suitably adjusted on prorata basis for increase in height of approaches.
4. In case of change in drawings including additional quantum of work/less quantum of work, the payment/ recovery shall be affected after execution of that item of work and not on prorata basis in advance.

**VOLUME – III**

**SECTION 8**

**SCHEDULE S-II**

**SCHEDULE S-II**

(Valid for Lump sum Tender based on Contractor's design)  
(Schedule of Item for Extra Work and Deviations)  
Variation Schedule (S II)

Any change in the quantum of work will be paid or recovered at the rates given below:

<b>Sr. No.</b>	<b>Description of Item</b>	<b>Unit</b>	<b>Total Rate</b>
	<b><u>FOR BRIDGE WORK : FOUNDATIONS</u></b>		
1	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling upto 3 mtr.	Cum	50.43
1 (b)	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling upto 3 mtr to 6 mtr.	Cum	64.80
2	Providing & laying filter media behind abutments, wing walls/return walls complete as per drawing and Technical specifications.	Cum	978.00
3	Providing and Laying Cutting Edge of Mild Steel weighing 40 kg per metre for Well Foundation complete as per Drawing and Technical Specification. [CSR 18.3b ]	Qtl.	10300.10
4	R.C.C. (M30) Mechanical Mixed & Vibrated for well curbs complete as per drawings as per Technical specification section 1200, 1500 & 1700.	Cum	5117.03
5	P.C.C. having Cement Content 363 Kg / Cum for bottom plugging of wells complete as per drawing and Technical specification section 1200, 1500 & 1700.	Cum	4568.00
6	RCC (M30) Mechanical mixed and vibrated for well steining complete as per drawing & Tech. Specification 1200, 1500 & 1700	Cum	4693.95
7	PCC (M15) for Top Plugging, (Mechanical Mixed) of wells complete as per drawing & Technical Specification	Cum	3364.00
8	R.C.C. (M30) for well caps complete as per drawing & Tech. specifications section 1200, 1500 & 1700	Cum	4398.00
9	Sinking of wells <b>7 Mtr Dia</b> in soil containing admixture of clay exceeding 20 % or admixture of kankar upto 15%		

	Depth below bed level Up to 3.00 m	Per metre	14692.45
	Depth beyond level 3.00 m to 10m	Per metre	20930.19
	Depth beyond level 10m to 20 m	Per metre	29023.90
	Depth beyond level 20 m to 23.10 m	Per metre	54390.69
10	Sinking of wells <b>Twin D Type</b> in soil containing admixture of clay exceeding 20 % or admixture of kankar upto 15% (ABUTMENT & CRIB WELLS UNDER WING WALL)		
	Depth below bed level Up to 3.00 m	Per metre	20528.14
	Depth beyond level 3.00 m to 10m	Per metre	24356.96
	Depth beyond level 10m to 20 m	Per metre	43314.06
	Depth beyond level 20 m to 23.10 m	Per metre	69319.47
11	Sand Filling in Wells complete as per drawing and Technical Specification clause 1207 N	cum	458.00
	<b><u>SUB STRUCTURE</u></b>		
12	RCC M35 grade Mechanical mixed and vibrated for various components of sub-structure complete as per drawing and Technical Specifications Section 1500 & 1700		
i	For Height upto 5.00 m	cum	4817.83
ii	For Height from 5.00 m to 10.0 m	cum	4936.89
13	Supplying, fitting and fixing in position true to line and level POT-PTFE bearing consisting of a metal piston supported by a disc or unreinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainless	Per MT	223.00
14	Providing and fixing weep holes in RCC abutment wing well complete as per drawing and Technical Specifications clause 2205 (N).	mtr	343.00
15	Providing and laying of an elastomeric strip seal expansion joint, catering to right or skew (less than 20 deg., moderately curved with maximum horizontal movement upto 50 mm, complete as per approved drawings and standard specifications to be installed b	mtr	13011.00
16	Back filling behind abutment, wing wall and return wall complete as per drawing and Technical Specification	cum	760.00
	<b>Super structure</b>		

17	Furnishing and Placing Reinforced/ Prestressed cement concrete in super-structure as per drawing and Technical Specification		
i)	RCC Grade M40	cum	6182.00
18	Furnishing and Placing Reinforced/ Prestressed cement concrete in stoppers as per drawing and Technical Specification		
i)	RCC Grade M40	cum	6182.00
19	56 mm thick compacted wearing coat including tack coat complete as per drawing and Technical Specifications clause 2201 512	sqm.	531.00
20	RCC (M30) grade mechanical mixed and vibrated concrete excluding steel reinforcement for anti crash railing complete as per drawing and technical specifications.	mtr	3463.78
21	Providing and fixing drainage spouts complete as per drawing & Technical Specifications clause 2204 (N)	Nos.	5980.00
22	Providing and applying 2 coats of water based cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 sqm.	sqm.	113.00
23	HYSD (Tor Steel) bar reinforcement in superstructure complete as per drawing and Technical Specifications Section 1600 N	MT	72119.67
24	PCC M15 Grade leveling course below approach slab complete as per drawing and Technical specification	cum	3647.00
25	Reinforced cement concrete approach slab including reinforcement and formwork complete as per drawing and Technical specification	cum	3647.00
26	High tensile steel wires/strands including all accessories for stressing, stressing operations and grouting complete as per drawing and Technical Specifications	MT	134086.00
27	Providing and fixing 2 no 75 mm dia M.S. pipe for telephone/electric cable etc. On both sides of bridge in anti crash railing	metre	580.00
28	Providing and fixing of electric junction boxes on both sides	Nos.	560.00
29	Provision for supply and erection of 9.00m length steel tubularswaged & welded electric lighting pole complete as per ISI 2713-1980 (Part -I & II )SP-28 type	Nos.	12000.00
30	Provision for Island in running water	Nos.	273251

31	Provision for steel trusses for staging and stressing the super structure (steel used to be used 20 times )	Per Span	652500/-
32	Provision for flase steining for casting of well caps	Per each	113512/-

**FOR APPROACHES**

<b>Sr. No.</b>	<b>Description of Item</b>	<b>Unit</b>	<b>Total Rate</b>
	Construction of Embankment with Material obtained from Borrowpits		
1	Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2.		
		Cum	157.72
2	Preparation of sub grade including making of trenches and compaction of bed.		
	Nurpur Bedi side	Sqm	0.82
	Bunga Side	Sqm	0.82
3	Providing, laying and consolidation of granular material as per MORT& H specifications 225 mm thick compacted thickness complete in all respect		
	Nurpur Bedi side	Cum	712.00
	Bunga Side	Cum	485.00
4	Providing, laying and consolidation of stone aggregate to Wet Mix Macadam as per MORT&H specifications.		
	Nurpur Bedi side	Cum	966.00
	Bunga Side	Cum	764.00
5	Painting road surface with Primer coat surfacing dressing as per MORT&H Specification with bitumen emulsion@7.50 kg per 10 sqm.		
	Nurpur Bedi side	Sqm	27.00
	Bunga Side	Sqm	27.00
6	Providing and laying tack coat with bitumen emulsion @2.50 Kg. per 10 Sqm as per MORT&H specification		
	Nurpur Bedi side	Sqm	9.79
	Bunga Side	Sqm	9.78

7	Providing and laying of 75 mm thick Bituminous Mecadam complete in all respects as per MORT&H Specification.		
	Nurpur Bedi side	MT	2107.27
	Bunga Side	MT	2021.82
8	Providing and laying of 40 mm thick Semi dense bitumen carpet complete in all respects as per MORT&H Specification.		
	Nurpur Bedi side	MT	2863.91
	Bunga Side	MT	2792.61
9	Supplying and laying & fixing of kerb & Channel of plain cement concrete 1:2:4	Mtr	308
10	Construction of water chutes @50 m centre to centre as per drawing	mtr	1311.49
11	Construction of top and bottom catch pit	Each	7766
12	Provision for 350 mm dia RCC hume pipes of 1 mtr. length to be fixed along the approach road and on curves	Each	654
13	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material .	Hectare	19422
14	(CSR24.37)RCC 1:2:4boundry pillars of standard designfixed in position including finishing but excluding painting	Each	401
15	Painting to kerb including preparation of surface priming coats and two coats of ready mixed paint complete in all respects. (CSR 16.24, 16.25 & 16.26) (14+4.15+13 = 31.15 + 315% = 129.27	Sqm	129.27
16	Providing 10 cm thick center line boundary line, stop line with thermoplastic paint as per IRC 35-1997	sqm	675.15
17	Provision for providing 1.00 m dia pipe culvert in approach road	each	133585.00
18	Providing and fixing of metal beam crash barrier along sides of approaches	mtr	3224

Sr. No.	Description of Item	Unit	Total Rate
<b>PROTECTION WORK</b>			
1	<b>Boulder Apron Laid in Wire Crates</b>		
	Providing and laying of boulder apron laid in wire crates made with 4mm dia GI wire conforming to IS: 280 & IS:4826 in 100mm x 100mm mesh (weaved diagonally) including 10 per cent extra for laps and joints laid with stone boulders weighing not less than 40 kg each.	CUM	1945
2	Providing and laying 1500mm thick Pitching on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment complete as per drawing and Technical specifications	cum	992
3	Providing and laying 300 mm thick Filter material underneath pitching in slopes complete as per drawing and Technical specification	cum	995
4	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.	cum	50
5	Providing and laying of apron with cement concrete blocks of size 0.5x0.5x0.5m cast in-situ and made with nominal mix of M-15 grade cement concrete with a minimum cement content of 250 kg / cum as per IRC: 21-2000.	CUM	3431

Sr. No.	Description of Item	Unit	Rate
<b>FOR BOARDS GANTARY ETC.</b>			
1.	Providing and Fixing over head gantry across the road as per drawing and design with prismatic type name plates etc. including letter and figures.	Per each	700000/-
2.	Providing and Fixing 1200 mm x 900 mm size two legged different type of Boards as per drawing and design with prismatic type name plates etc including letter and figures.	Per each	16000/-
3.	Providing and Fixing 900 mm x 600 mm size two legged different type of Boards as per drawing and design with prismatic type name plates etc including letter and figures.	Per each	12000/-
4.	Providing and Fixing 900 mm x 900 mm x 900 mm size single legged triangular different type of Boards as per drawing and design with prismatic type name plates etc including letter and figures.	Per each	6000/-
5.	Providing and Fixing Hazard marker as per drawing and design with prismatic type name plates etc including letter	Per each	5000/-

	and figures.		
6.	Providing and Fixing different type of cat eyes, as per drawing and design i. Dual directional ii. Single directional	P. each P. each	600/- 400/-
7	Providing and Fixing short stands delineators as per drawing and design with prismatic type reflective tape	Per each	800/-

**SCHEDULE S-III****SCHEDULE OF ITEM FOR EXTRA WORK / DEVIATIONS**

For any work not covered in Schedule S-II, the payments shall be made as follows:

- (i) For any item of extra work / deviation, the payment shall be @ C.S.R + C.P. (as on date of tender). For any reduction in scope / quantity of work the recovery shall be @ C.S.R. + C.P. (as on dated of tender).
- (ii) For items not covered in (i) above, the payment for the same be made on the basis of the rates approved by the competent authority.

**Note :** C.P. refers to ceiling premium on C.S.R. 1987 on date of tenders.

**VOLUME – III**

**SECTION 9**

**SECURITIES AND OTHER FORMS**

**PERFORMANCE BANK GUARANTEE**

To

\_\_\_\_\_ [name of Engineer]

\_\_\_\_\_ [address of Engineer]

WHEARAS \_\_\_\_\_ [name and address of Contractor]  
(hereinafter called "the Contractor") has undertaken, in pursuance of Contract  
No. \_\_\_\_\_ dated \_\_\_\_\_ to execute.

\_\_\_\_\_ [name of Contract and brief description of  
Works]

(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 the obligation in  
accordance with the Contract;

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

NOW THEREFORE we hereby affirm that we are the Guarantor and  
responsible to you on behalf of the Contractor, up to a total of  
\_\_\_\_\_ [amount of guarantee]\* \_\_\_\_\_ (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 presenting us with the demand.

We further agree that no change or addition to or other modification of the  
terms of the Contract or of the works to be performed thereunder or of any of the  
Contractor documents which may be made between your 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 unbalance Bids, if any and denominated in India Rupees.

**BANK GUARANTEE FOR ADVANCE PAYMENT**

To

\_\_\_\_\_ [name of Engineer]  
\_\_\_\_\_ [address of Engineer]  
\_\_\_\_\_ [name of Contractor]

Gentlemen :

In accordance with the provision of the Conditions of Contract sub-clause 51.1 (“Advance Payment”) of the above mentioned Contract \_\_\_\_\_ [name and address of Contractor] (hereinafter called “the contractor”) shall deposit with \_\_\_\_\_ [name of Engineer] a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of \_\_\_\_\_ [amount of Guarantee]\* \_\_\_\_\_ [in words]

We, the \_\_\_\_\_ [bank of financial institution], as instructed by the contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to \_\_\_\_\_ [name of Engineer] on his first demand without whatsoever right of obligation on our part and without his first claim to the Contractor, in the amount not exceeding \_\_\_\_\_ [amount of guarantee]\* \_\_\_\_\_ [in words].

We further agree that no change or addition to or other modification of the terms of the contractor or Works to be performed thereunder or of any of the Contract documents which may be made between \_\_\_\_\_ [name of Engineer] and the Contractor, shall in any way release us from any liability under his guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until \_\_\_\_\_ [name of Engineer] receives full payment of the same amount from the Contractor.

Yours truly

Signature and Seal: \_\_\_\_\_  
Name of Bank\Financial Institution \_\_\_\_\_  
Address \_\_\_\_\_  
Date \_\_\_\_\_

\* An amount shall be inserted by the Bank or Financial Institution representing the amount of the Advance Payment, and denominated in Indian Rupees.

**INDENTURE FOR SECURED ADVANCES**

## FORM 31

(for use in cases in which the contract is for finished work and the contractor has entered into an agreement for the execution of a certain specified quantity of work in a given time)

This indenture made the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_ BETWEEN \_\_\_\_\_ (hereinafter called the contractor which expression shall were the context so admits or implies be deemed to include his executors, administration and assigns) or the one part and the Engineer of the other part.

Whereas by an agreement dated \_\_\_\_\_ (hereinafter called the said agreement) the contractor has agreed.

AND WHEREAS the contractor has applied to the Engineer that he may be allowed advance on the security of materials absolutely belonging to him and brought by him to the site of the works the subject of the said agreement for use in the construction of such of the works as he has undertaken to executive at rates fixed for the finished work (inclusive of the cost of materials and Labour and other charges).

AND WHEREAS the Engineer has agreed to advance to the Contractor the sum of Rupees \_\_\_\_\_ on the security of materials the quantities and other particulars of which are detailed in Accounts of Secured Advances attached to the Running Account bill for the said works signed by the Contractor on \_\_\_\_\_ and the Engineer has reserved to himself the option of making any further advance or advances on the security of other materials brought by the Contractor to the site of the said works.

NOW THIS INDENTURE WITNESSETH that in pursuance of the said agreement and in consideration of the sum of Rupees \_\_\_\_\_ on or before the execution of these presents paid to the Contractor by the Engineer (the receipt where of the Contractor doth hereby acknowledge) and of such further advances (if any) as may be made to him as a for said the contractor doth hereby covenant and agree with the Governor and declare as follows:

- (1) That the said sum of Rupees \_\_\_\_\_ so advanced by the Engineer to the Contractor as aforesaid and all or any further sum of sums advanced as aforesaid shall be employed by the Contractor in or towards expending the execution of the said works and for not other purpose whatsoever.
- (2) That the materials details in the said Account of Secured Advances which have been offered to and accepted by the Engineer as security are absolutely the Contractor's own property and free from encumbrances of any kind and the contractor will not make any application for or receive a

further advance on the security of materials which are not absolutely his own property and free from encumbrances of any kind and the contractor indemnified the Engineer against all claims to any materials in respect of which an advance has been made to him as aforesaid.

- (3) That the materials detailed in the said account of Secured Advances and all other materials on the security of which any further advance or advances may hereafter be made as aforesaid (hereafter called the said materials) shall be used by the Contractor solely in the execution of the said works in accordance with the directions of the Engineer.
- (4) That the Contractor shall make at his own cost all necessary and adequate arrangements for the proper watch, safe custody and protection against all risks of the said materials and that until used in construction as aforesaid the said materials shall remain at the site of the said works in the Contractor's custody and on his own responsibility by him. In the event of the said materials or any part thereof being stolen, destroyed or damaged or becoming deteriorated in a greater degree than is due to reasonable use and wear thereof the Contractor will forthwith replace the same with other materials of like quality or repair and make good the same required by the Engineer.
- (5) That the said materials shall not be any account be removed from the site of the said works except with the written permission of the Engineer or an officer authorized by him on that behalf.
- (6) That the advances shall be repayable in full when or before the Contractor receives payment from the Engineer of the price payable to him for the said works under the terms and provisions of the said agreement. Provided that if any intermediate payments are made to the Contractor on account of work done than on the occasion of each such payment the Engineer will be at liberty to make a recovery from the Contractor's bill for such payment by deducting there from the value of the said materials than actually used in the construction and in respect of which recovery has not been made previously, the value for this purpose being determined in respect of each description of materials at the rates at which the amounts of the advances made under these presents were calculated.
- (7) That if the Contractor shall at any time make any default in the performance or observance in any respect of any of the terms and provisions of the said agreement or of these presents the total amount of the advance or advances that may still be owing of the Engineer shall immediately on the happening of such default be repayable by the Contractor to be the Engineer together with interest thereon at twelve per cent per annum from the date or respective dates of such advance or advances to the date of repayment and with all costs, charges, damages and expenses incurred by the **Engineer** in or for the recovery thereof or

the enforcement of this security or otherwise by reason of the default of the Contractor and the Contractor hereby covenants and agrees with the **Engineer** to reply and pay the same respectively to him accordingly.

- (8) That the Contractor hereby charges all the said materials with the repayment to the Engineer of the said sum of Rupees\_\_\_\_\_ and any further sum of sums advanced as aforesaid and all costs, charges, damages and expenses payable under these presents PROVIDED ALWAYS and it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the power contained therein if and whenever the covenant for payment and repayment here-in-before contained shall become enforceable and the money owing shall not be paid in accordance there with the **Engineer** may at any time thereafter adopt all or any of the following course as he may deem best :
- (a) Seize and utilize the said materials or any part thereof in the completion of the said works on behalf of the contractor in accordance with the provisions in that behalf contained in the said agreement debiting the contractor with the actual cost of effecting such completion and the amount due to the contractor with the value of work done as if he had carried it out in accordance with the said agreement and at the rates hereby provided. If the balance is against the Contractor, he is to pay same to the **Engineer** on demand.
  - (b) Remove and sell by public auction the seized materials or any part thereof and out of the moneys arising from the sale retain all the sums aforesaid repayable or payable to the **Engineer** under these presents and pay over the surplus (if any) to the contractor.
  - (c) Deduct all or any part of the moneys owing out of the security deposit or any sum due to the Contractor under the said agreement.
- (9) That except in the event of such default on the part of the contractor as aforesaid interest on the said advance shall not be payable.
- (10) That in the event of any conflict between the provisions of these presents and the said agreement the provisions of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents the settlement of which has not been here-in-before expressly provided for the same shall be referred to the Engineer whose decision shall be final and the provision of the Indian Arbitration and Reconciliation Act for the time being in force shall apply to any such reference.

## **LETTER OF ACCEPTANCE**

**XEN**

\_\_\_\_\_ (Date)

To

Contractor] \_\_\_\_\_ [Name and address of the

\_\_\_\_\_  
\_\_\_\_\_

Dear Sirs,

This is to notify you that your Bid dated \_\_\_\_\_ for execution of the \_\_\_\_\_ (name of the contract 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.

We accept/do not accept that \_\_\_\_\_ be appointed as the Adjudicator<sup>2</sup>. 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 upto 28 days from the date of expiry of defect liability period i.e. upto \_\_\_\_\_ and sign the contract, failing which action as stated in para 34.3 of ITB will be taken.

Yours faithfully.

Authorized Signature  
Name of title of Signatory  
Name of agency

- 
1. Delete "corrected and" or "and modified" if only one of these actions applies. Delete as corrected and modified in accordance with the Instructions to Bidders. If corrections or modifications have not been affected.
  2. To be used only if the Contractor disagrees in his Bid with the Adjudicator proposed by the Engineer in the "Instructions of Bidders"

**ISSUE OF NOTICE TO PROCEED WITH THE WORK**

**Note:** No Separate notice to proceed with the work shall be issued. However the detailed acceptance letter sent by this office with intended date of start shall also be considered notice to proceed with the work.

**AGREEMENT FORM**

## Agreement

This agreement, made the \_\_\_\_\_ day of \_\_\_\_\_ between \_\_\_\_\_ (name and address of Engineer) [hereinafter called "the Engineer] and \_\_\_\_\_ (name and address of contractor) hereinafter called "the Contractor" of the other part.

Whereas the Engineer is desirous that the contractor execute

\_\_\_\_\_ (Name and identification number of Contract) (hereinafter called "the works") and the Engineer 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 form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the Engineer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Engineer to execute and complete the Works and remedy and defects therein in conformity in all aspects with the provisions of the contract.
3. The Engineer 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.

**XEN**

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 Engineer \_\_\_\_\_

Binding signature of Contractor \_\_\_\_\_

**UNDERTAKING**

I, the undertaking 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 it shall be binding on us and may be accepted at any time before the expiration of that period.

\_\_\_\_\_  
(Signed by the Authorised Officer of the Firm)

\_\_\_\_\_  
Title of the Officer

\_\_\_\_\_  
Name of Firm

\_\_\_\_\_  
DATE

**VOLUME – IV**

**SECTION 10**

**DRAWINGS**

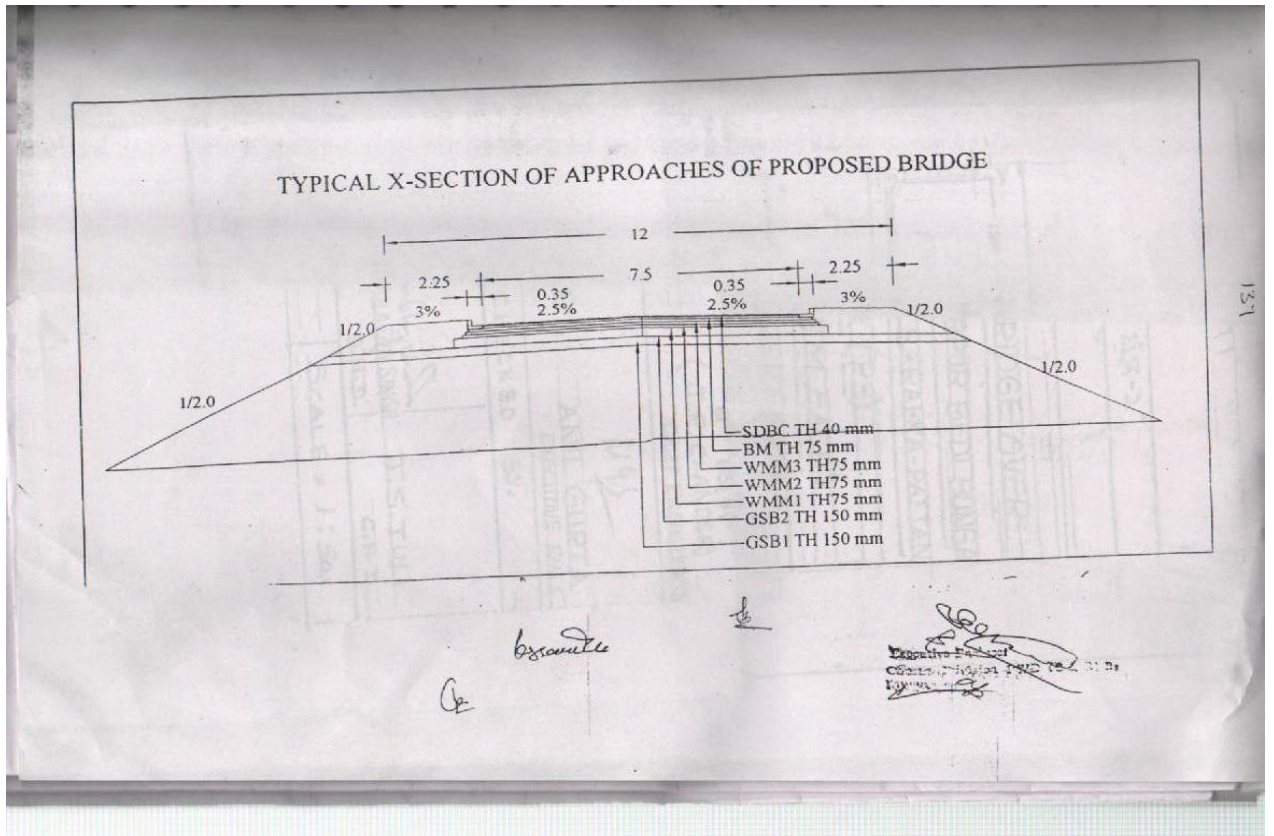
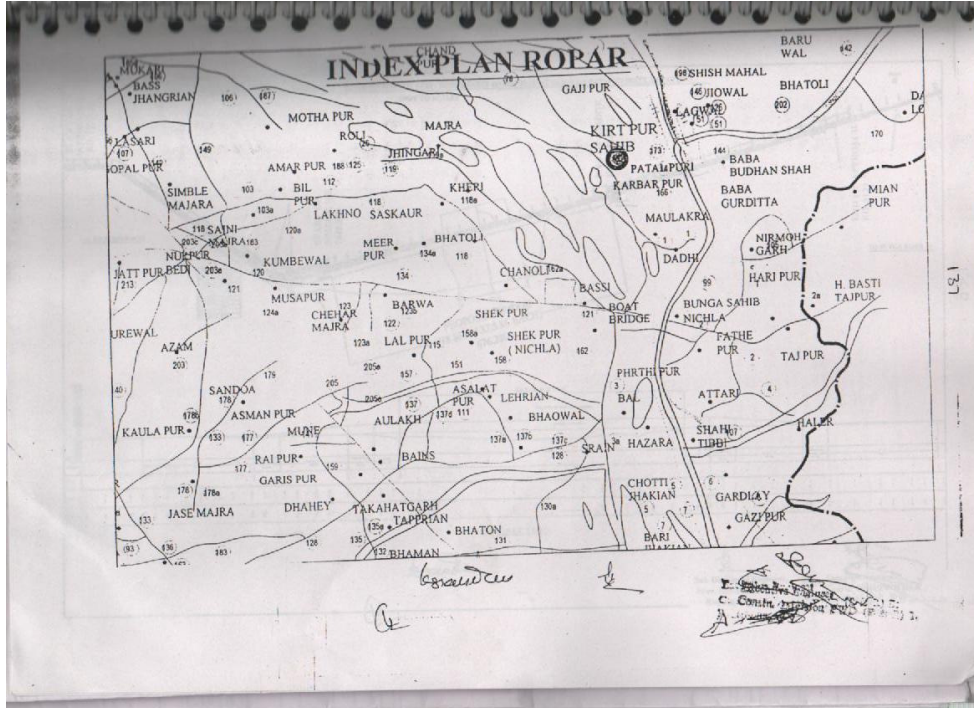
## **DRAWINGS**

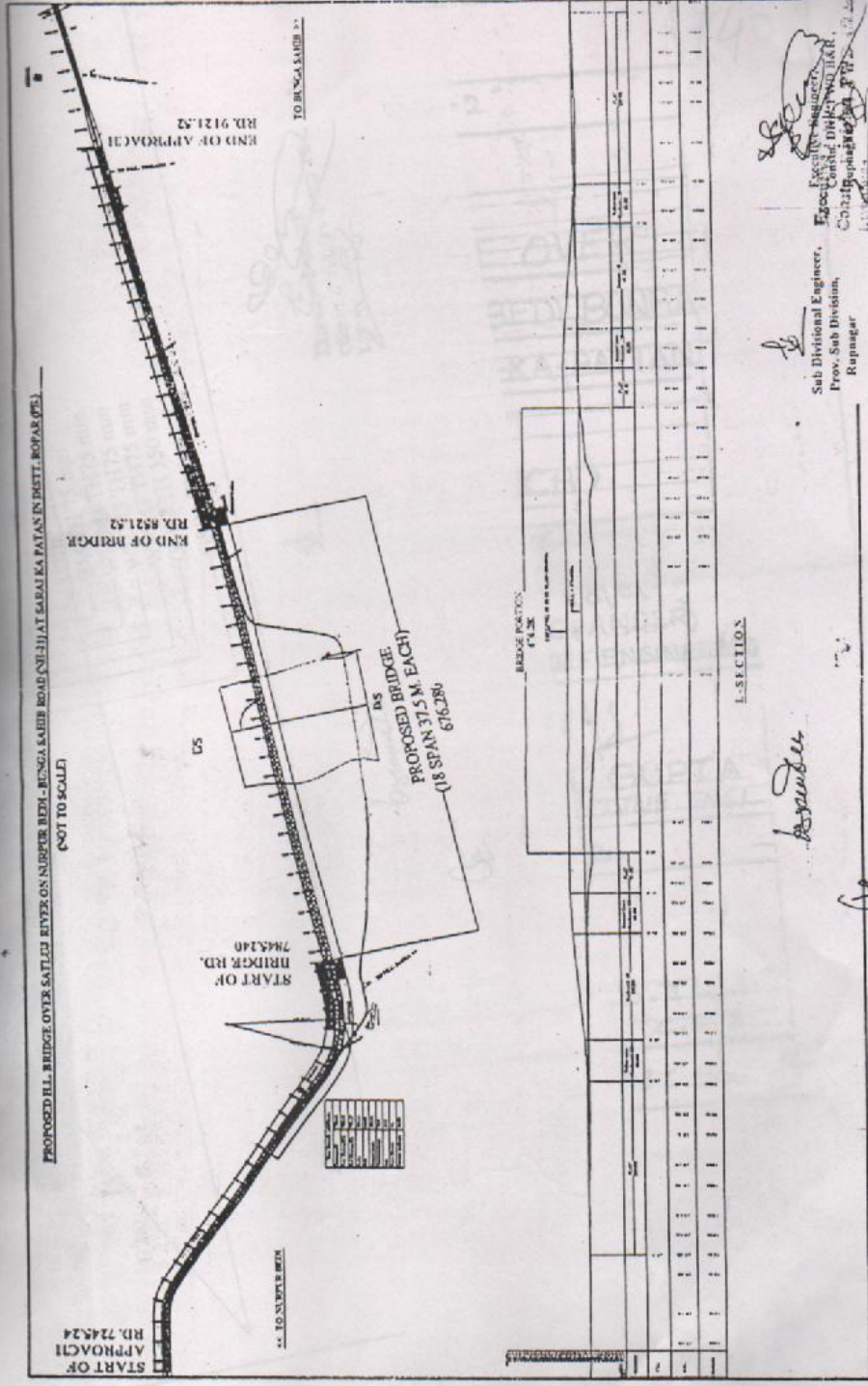
The detailed drawings can be seen in the office of Executive Engineer, Construction Division, Punjab PWD B&R Branch, Ropar on any working day. Any other information in this regard can be obtained from the same office. However the following drawings are attached for identification site etc.

	Page No.
1. Index Plan	137
2. Survey Plan	138
3. Typical Cross Section	139
4. G.A.D.	140
5. Typical Cross section of Protection work at A-A	141
at B-B	142
6. Soil Investigation report	143-175

The remaining drawing/ plan etc. can be seen in the office of the Executive Engineer, Construction Division, Punjab PWD B&R Branch, Ropar.

Index plan

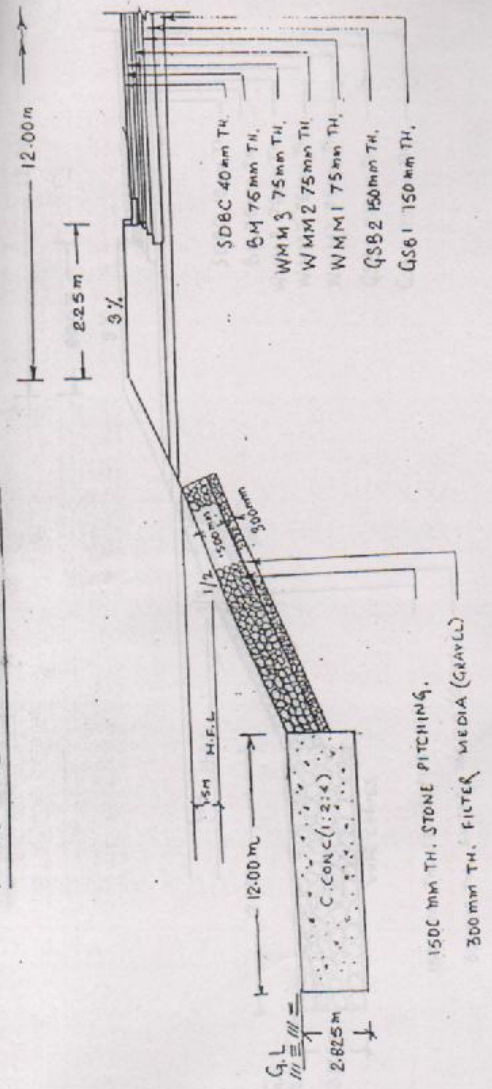








CROSS-SECTION OF APPROACH SHOWING DETAIL OF PROTECTION WORK

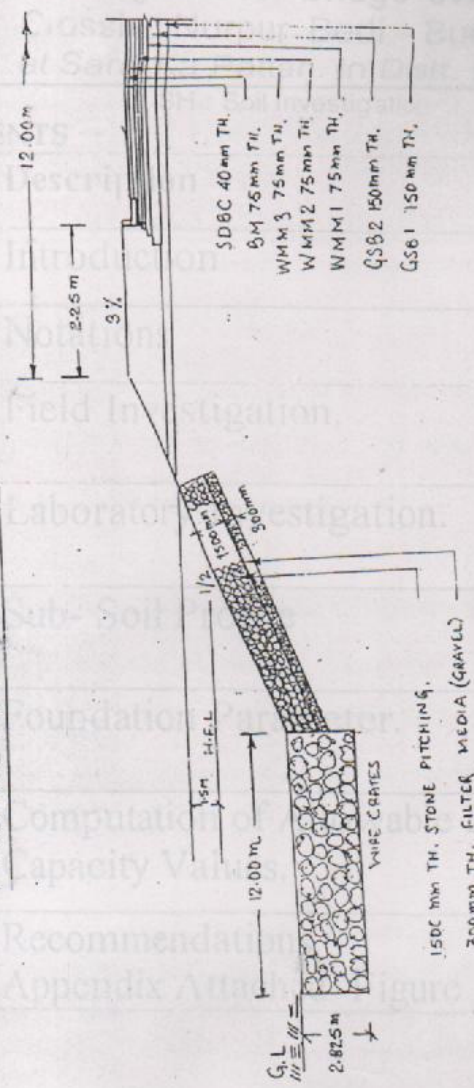


SECTION - AA

*[Signature]*  
 Executive Engineer  
 District Engineer  
 District Engineer  
 District Engineer

*[Signature]*  
 Engineer

CROSS-SECTION OF APPROACH SHOWING DETAIL OF PROTECTION WORK



SECTION - B-B

*[Signature]*

Checked by: *[Signature]*

Drawn by: *[Signature]*

*[Signature]*

*[Signature]*