



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED**

**(MINISTRY OF ROAD TRANSPORT & HIGHWAYS)**

**GOVT. OF INDIA**

**NATIONAL COMPETITIVE BIDDING**

**(Through E - TENDERING MODE)**

**Name of Work: Rehabilitation And Restoration of Sinking Portion NH-54 from Km 289+340 to Km 289+420 at Lawngtlai in the state of Mizoram.**

**CONTRACT PACKAGE NO: NHIDCL/RO/CW/A-T/P-VI**

**BID DOCUMENT**

**Tender Inviting Authority**

**Executive Director (Projects), Regional Office-Aizawl, Mizoram**

**June 2020**

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**(SECTION-I)**  
**NOTICE INVITING E-TENDER**  
**(E-TENDERING MODE ONLY)**

**National Highways & Infrastructure Development Corporation Ltd.**  
**Notice Inviting BID/TENDER**  
**National Competitive Bidding through E-Tendering only**

No. NHIDCL/RO/CW/A-T/P-VI

Date: 01/06/2020

1. NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED of India (hereinafter called “the Employer”) hereby invites *Item rate Contracts* bids on two bid systems through “e-tendering mode” from experienced firms/organizations (hereinafter referred to as the “Bidders”) to bid for the works detailed in the table as mentioned below from the eligible bidders, excluding those firms who have been declared as non-performing by MoRTH/NHAI/NHIDCL or the firms those are black listed/debarred for specified period by MoRTH/NHAI/NHIDCL.

Name of the Work	NH-NO	Length	State/UT	Estimated Civil Cost (Rs in Cr)	Period of Completion
Rehabilitation And Restoration of Sinking Portion NH-54 from Km 289+340 to Km 289+420 at Lawngtlai in the state of Mizoram	54	80 mts	Mizoram	1.47 Cr excluding GST	4 Months

2. The Scope of Work involves ‘Rehabilitation And Restoration of Sinking Portion NH-54 from Km 289+340 to Km 289+420 at Lawngtlai in the state of Mizoram’ on (Item Rate Contract). Detailed information regarding the scope of work may be seen in the Bid document.

3. **Cost of Bid Document: Rs. 10,000/-** at the time of the submission of the Bid proposal, in the form of Demand Draft only in favour of “Executive Director (P), National Highways & Infrastructure Development Corporation Limited, payable at Aizawl. In case the bidder is not able to get the draft made, NEFT/RTGS can be done in the favour of the following accounts and receipt for the same may be provided and uploaded alongwith the bids.

Sl. No	Particulars	Details
1	Name of the Beneficiary	National Highways and Infrastructure Development Corporation Limited
2	Beneficiary Bank Account No.	79601010002070
3	Beneficiary Bank Branch	IFSC SYNB0007960
4	Beneficiary Bank Branch Name	Syndicate Bank, Aizawl
5	Beneficiary Bank Address	Lower Chanmari, Aizawl

4. **Earnest Money Deposit/Bid Security:** Bidder must submit Bid Securing Declaration. In case the bid is withdrawn or modified during the period of its validity or if the bidder fail to sign the contract in case the work is awarded to the bidder or the bidder fail to submit a performance security before the deadline defined in clause 7 of the Request for Proposal (RFP), then the bidder will be suspended for participation in the tendering process for the works of MoRTH/NHAI/NHIDCL and works under other Centrally Sponsored Schemes, for a period of one year from the bid due date of this work.

5. The bidders have to submit their bids online in electronic format with Digital Signature. The bid cannot be uploaded without Digital Signature. No proposal will be accepted in physical form.

6. To participate in bidding process, bidders have to get (DSC) “Digital Signature Certificate” as per Information Technology Act-2000, to participate in online bidding. This certificate will be required for digitally signing the bid. Bidder can get above mentioned digital certificate from any approved vendors. The Bidder, who already posses valid “Digital Signature Certificate” (DSC) need not to procure new Digital Signature Certificate

7. Bidder shall submit the following documents in physical form in original and in scanned copy to be uploaded.

(i) Letter comprising “ **Form of Letter of Application**”.

(ii) Bid Document Fee.

(iii) Undertaking for **Bid Securing Declaration**.

(iv) Written Power of Attorney of the signatory (whose digital signature certificate is used during e-tender submission) of the bidder to commit the bid.

(v) An affidavit on a Stamp Paper, duly attested from the Notary Public, that the information furnished with the bid documents is correct in all respects

8. The detailed tender document can be viewed from the website [www.nhidcl.com](http://www.nhidcl.com) & <https://eprocure.gov.in> as per the Critical date sheet in the succeeding paras.

9. The Complete Bid Document can be downloaded with effect from 01.06.2020 (1400 Hrs) and will be open upto 29.06.2020(1400 Hrs) at the NHIDCL e-tendering portal free of cost. To participate for bidding, bidders have to pay non-refundable document fee of Rs. 10000/- in the form of DD or Banker’s cheque drawn/NEFT/RTGS on any schedule bank in India in favour of “**Executive Director (P), Regional Office-Aizawl, 3rd Floor, T-86, Tuikhuahtlang, Aizawl, Mizoram-796001 Email:romizoram@nhidcl.com**”. The amendments/clarifications to the bid documents, if any will be hosted on the above websites only.

10 The bidders have to submit their bids online in electronic format with Digital Signature. The bid cannot be uploaded without Digital Signature. No proposal (Except the documents as mentioned in point 7 above) will be accepted in physical form. All the required information for bid must be filled and submitted online.

11. The bid should be submitted online in the prescribed format given in the website. No other mode of submission is acceptable. Also no change in format is permissible.

12. Bidders should get ready with the scanned copies of cost of documents as specified in the tender documents. The original instruments in respect of cost of documents and relevant documents will be submitted to the Tenders Inviting Authority by Registered post/courier/by hand as per time schedule specified.

13. The last date of online submission of the bid is 29.06.2020 (1400 hrs) (as mentioned on the e-portal only) (“**Bid Due Date**”). The Bids would be opened on two stages (A) Technical Bid and (B) Financial Bid. Technical Bid will be opened on 30.06.2020 (1400) Hrs at National Highways & Infrastructures Development Corporation Limited C/o Regional Office-Aizawl, 3<sup>rd</sup> Floor, T-86, Tuikhuahtlang, Aizawl, Mizoram-796001, Email: **ro-mizoram@nhidcl.com**. Date of opening of Financial Bid will be intimated later. Representatives of the bidders (maximum of two) who choose to attend may attend the online opening of the bids at **RO-Aizawl-Mizoram**, on the date & time as mentioned above. However, such representatives shall be allowed to attend the opening of the bids only if they produce letter of authority on the letter head of the bidder, at the time of opening of bids as mentioned above.

14. The preliminary requirements (detailed requirements are given in the Bid Document) of bidding firm / contractor for above packages are mentioned as under:

Average Annual Turn-over during last 5 years	Single Work of similar nature in any year during last 5 years	Time for Completion
1.47 Crore	0.36 Crore	4 Months

**15. Critical Data Sheet**

S. No	Description	Period
1	Date of issue of NIT	01.06.2020
2	Date of issue of Sale of Tender Documents	01.06.2020 (1400 Hrs)
3	Last date of receipt of pre-bid queries	18.06.2020 (1700 Hrs)
4	Date of Pre-Bid meeting	19.06.2020 (1500 Hrs)
5	Date of uploading of reply to the pre-bid queries	22.06.2020 (1500 Hrs)
6	Last Date of submission of Tender/Bid (online & hard copy)	29.06.2020 (1400 Hrs)
7	Date of Opening of Technical Bid	30.06.2020 (1400 Hrs)

8	Date of Uploading of list of Technically Qualified Applicants	To be intimated later
9	Date of Opening of Financial Bids of Qualified Applicants	To be intimated later
10	Date of issue of letter of award (LOA)	To be intimated later
11	Validity of Bid	120 days

16. For any clarifications, the following office may be contacted:

**Executive Director (Projects)**

Regional Office-Aizawl, 3<sup>rd</sup> Floor, T-86,

Tuikhuahtlang, Aizawl, Mizoram-796001

**Email:ro-mizoram@nhidcl.com**

17. Conditional bids would be rejected. NHIDCL reserves the right to accept/reject any or all the bids without assigning any reasons thereof.

**SECTION-(II)**

**INSTRUCTIONS TO BIDDERS & APPENDIX TO BID**

**Table of Clauses**

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**Section II**  
**Instructions to Bidders (ITB)**  
**A. General**

**1. Scope of Bid**

1.1 The Employer ( i.e. Managing Director, National Highways & Infrastructure Development Corporation Limited (NHIDCL) invites bids for the work “Rehabilitation And Restoration of Sinking Portion NH-54 from Km 289+340 to Km 289+420 at Lawngtlai in the state of Mizoram” as defined in this document hereinafter referred to as “the Works”. The name and identification number of works is provided in the Notice Inviting Tender.

1.2 The successful Bidder will be expected to complete the works by the intended completion date specified in the Contract Data (Part 1 General Conditions of Contract).

1.3 Throughout these bidding documents, the terms “bid” and “tender” and their derivatives (bidder/tenderer,bid/tender,bidding/tendering, etc.) are synonymous.

1.4 The work will be indent/work order based which shall be placed upon the contractor based on site requirement.

1.5 The quantities given in the BOQ are indicative and may not be required to be fully executed.

**2. Source of Funds**

2.1 The expenditure on this project will be met by National Highways & Infrastructure Development Corporation Ltd (NHIDCL).

2.2. If the L-1 bidder fails in performing the obligations as per the Contract, NHIDCL will have the liberty to get it done at the risk and cost of the Contractor who has been L-1.

**3. Eligible Bidders**

3.1 This Invitation for Bids is open to all bidders meeting the qualification requirements prescribed in this document.

3.2 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices by the Central Government, the State Government or any public undertaking, autonomous body, authority by whatever name called under the Central or the State Government.

**4. Qualification of the Bidder**

4.1 Deleted

4.2 All bidders shall furnish the following information and documents with their bids in Section-III, Qualification Information.

- (a) Scanned copies of original documents defining the constitution or legal status, place of registration, and principal place of business; scanned copy of written power of attorney of the signatory of the Bid to commit the Bidder; & original copy of written power of attorney to be submitted in the envelop of physical form. (Pl refer clause 12.2 of ITB)
- (b) Scanned copy of total monetary value of civil engineering construction works performed for each of the last five years (2014-15,2015-16,2016-17,2017-18 & 2018-19) duly certified by CA.
- (c) Scanned copy of experience certificate in works of a similar nature and size for each of the last five years with certificates from the concerned officer of the rank of Executive Engineer or equivalent;
- (d) Scanned copy of evidence of availability (either owned or leased or rented) of items of construction equipment named in the Appendix to ITB Clause 4.4 B (b) (i).
- (e) Scanned copy of details of the technical personnel proposed to be employed for the contract having the qualification defined in Appendix to ITB Clause 4.4 B (b) (ii).
- (f) Scanned copy of reports on the financial standing of the Bidder, and a certificate from Chartered Accountant as a proof of turnover for the last five financial years.
- (g) Scanned copy of information regarding any litigation or arbitration during the last five years in which the Bidder is involved, the parties concerned, the disputed amount, and the present status;
- (h) Scanned document in support of evidence of access to line(s) of credit and availability of other financial resources facilities (10% of Civil Cost put to tender), certified by the Bankers (Not more than 3 months old).
- (i) Deleted
- (j) Scanned undertaking that the bidder will be able to invest a minimum cash upto 25% of contract value of work, during implementation of work.
- (k) Deleted
- (l) Deleted
- (m) Bid Securing Declaration.
- (n) Undertaking of Disinvestment.
- (o) Form of Letter of application

**4.3 Bids from joint ventures, consortiums, combination or any sort of arrangement between two or more than two entities are not allowed.**

**4.4 A. To qualify for award of the contract, each bidder in its name should have the following;**

(a) Achieved an average annual financial turnover for the estimated value of Civil work (in all classes of civil engineering construction works only) equal to the amount indicated in NIT during last five years ending 31<sup>st</sup> March of the previous financial year duly certified by Chartered Accountant.

Satisfactorily completed (not less than 90% of Contract Value) as a prime contractor (or as a nominated subcontractor, provided further that all other qualification criteria are satisfied) similar works during last five years ending last day on month previous to the one in which bids are invited.

(b) Experience in successfully completing or substantially completing at least one contract of road i.e. State Highway, National Highway with similar or higher work specification of at least 25% of value of proposed Contract within the last five years..

(Following escalation factor shall be used to bring the value of such completed works at the level of current financial year i.e.' 2019-20).

<b>Year</b>	<b>Multiplying Factor</b>
Year-1	1.1
Year-2	1.21
Year-3	1.33
Year-4	1.46
Year-5	1.61

**4.4 B (a)** Each bidder must upload the scanned copies of following documents along with the submission of online bidding:

(i) An affidavit on a Stamp Paper, duly attested from the Notary Public, that the information furnished with the bid documents is correct in all respects; and

(ii) Such other certificates as defined in Section- III.

(iii) Failure to submit the certificates/documents as specified above shall make the bid non-responsive.

**(b)** Each bidder must demonstrate:

(i) Evidence of availability (either owned or leased or rented) of the key equipment's for this work as stated in the Appendix to Instruction to Bidder.

(ii) Availability for this work of personnel with qualification & experience as stated in the Appendix to Instruction to Bidder.

**4.5** Contractor's' experience and resources shall not be taken into account in determining the bidder's compliance with the qualifying criteria.

Bidders who *inter alia* meet the minimum qualification criteria will be qualified only if their available BID capacity is more than the total BID value. The available BID capacity will be calculated as per following, based on information provided in the format provided in this RFP:

Assessed Available **BID capacity** = **(A\*N\*2.5 - B + C)**, Where

A = Maximum value of civil engineering works excluding the amount of bonus received, if any, in respect of EPC Projects executed in any one year during the last five years (updated to the price level of the year indicated in table at Note-3 below) taking into account the completed as well as works in progress. The **projects** include turnkey project/ Item rate contract/ Construction works.

B = Value (updated to the price level of the year indicated in table at Note-3 below) of existing commitments, works for which Appointed Date/ Commencement Date has been declared or on-going works to be completed during the period of completion of the works for which BID is invited. For the sake of clarification, it is mentioned that works for which LOA has been issued but Appointed Date/ Commencement Date not declared as on Bid Due Date shall not be considered while calculating value of B.

C = The amount of bonus received, if any, in Projects during the last 5 years (updated to the price level of the year indicated in table at Note-3 below).

**Note:**

1. The Statement showing the value of all existing commitments, works for which Appointed Date/ Commencement Date has been declared and ongoing works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Client or its Engineer-in-charge not below the rank of Executive Engineer or equivalent in respect of Projects or Concessionaire / Authorised Signatory of SPV in respect of BOT Projects and verified by Statutory Auditor.

2. The amount of bonus received, if any, in Projects should be countersigned by the Client or its Engineer-in-charge not below the rank of Executive Engineer or equivalent in respect of Projects.

3. The factor for the year for updation to the price level is indicated as under:

Year	Year-1	Year-2	Year-3	Year-4	Year-5
Up-dation factor	1.1	1.21	1.33	1.46	1.61

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

(i) made misleading or false representations in the forms, statements, affidavits and attachments submitted in proof of the qualification requirements; and/or

(ii) Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc. or debaring from MORTH/NHAI/NHIDCL work etc.

(iii) Tampered the bid document in any manner.

**5. One Bid per Bidder**

5.1 Each Bidder shall submit only one Bid for a particular package. A Bidder who submits more than one Bid will cause be disqualified.

## 6. Cost of Bidding

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

## 7. Site Visit

7.1 The Bidder, at his own cost, responsibility and risk, is encouraged to visit, examine and familiarize himself with the Site of Works and its surroundings including source of earth, water, road aggregates etc. and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense. He may contact the Regional Office-Aizawl, 3<sup>rd</sup> Floor, T-86, Tuikhuahtlang, Aizawl, Mizoram-796001 of NHIDCL in this regard.

## **B. Bidding Documents (online)**

### **8. Content of Bidding Documents**

8.1 The set of bidding documents comprises the documents listed below and addendum (if any) issued in accordance with Clause 10:

#### **Volume- I:-**

1. Notice Inviting Tender
2. Instructions to Bidders & Appendix to Bid
3. Qualification Information
4. Forms Bank Guarantee, Agreement & LOA
5. Conditions of Contract & Contract Data
6. Scope of Work
7. Technical Specifications
8. Implementation Manual & Maintenance Intervention Levels

#### **Volume - II:-**

9. Bill of Quantities, Bidders will be required to quote a single percentage above/below the overall estimated amount. This percentage would be applicable all the items of work in the Contract for working out the rates for each item of work (Should be filed in the prescribed format uploaded on e-portal). The bidder should fill the requisite details in the prescribed format online uploaded on E-portal.

### **8.2 DELETED**

8.3 The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, specifications, bill of quantities, etc. 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. Clarifications on Bid Documents**

9.1 A prospective Bidder requiring any clarification on the bid documents may notify the Employer in writing or by cable ("cable" includes facsimile) or through e-tender portal at the Employer's address indicated in the Notice Inviting Tender. The Employer will respond to any request for clarification received earlier than 10 days prior to the deadline for submission of bids. Copies of the

Employer's response will be hosted on website or which are required in the opinion of the Employer 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 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 question on any matter that may be raised at that stage.

9.2.3 The bidder is requested to submit any questions in writing or by electronic mail so as to reach the Employer not later than one week before the meeting.

9.2.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of the enquiry) and the responses given will be transmitted without delay on website. Any modifications of the bid documents listed in Clause 8.1, which may become necessary as a result of the pre-bid meeting or which are required in the opinion of the Employer shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 10 and not through the minutes of the pre-bid meeting.

9.2.5 Deleted

## **10. Amendment of Bidding Documents**

10.1 Before the deadline for submission of bids, the Employer may modify the Bidding Documents by issuing amendments/addendums etc.

10.2 Any amendments/ addendum etc thus issued shall be part of the bidding documents and shall be hosted on CPP Portal i.e. [www.eprocure.gov.in](http://www.eprocure.gov.in) & [www.nhidcl.com](http://www.nhidcl.com). Bidders are advised to keep them self-updated of all addendums issued on e-tendering portal by daily checking the e-tendering portal and, NHIDCL does not assume any responsibility in case the bidder fails to do so and does not take any action, if required, with respect any relevant addendum.

10.3 To give prospective bidders reasonable time to take an addendum into account in preparing their bids, the Employer shall extend, as necessary, the deadline for submission of bids, in accordance with Clause 20.2.

## C. Preparation of Bids

### 11. Language of Bid

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

### 12. Documents Comprising the Bid

12.1 The e-bid submitted by the Bidder shall be in two separate parts:

**Part I** - This shall be named **Technical Bid** and shall comprise of information submitted in Section-III.

**Part II**- It shall be named **Financial Bid** and shall comprise of Priced bill of quantities/percentage quote by the bidder.

12.2 Document to be submitted in physical form must reach the Regional Office-Aizawl, NHIDCL by Date of Submission of Bid.

Though the scanned copies of following documents is required to be uploaded during submission of e-bid on the e-tendering portal i.e. [www.eprocure.gov.in](http://www.eprocure.gov.in), As per clause 12.1 above, the following original document in physical form shall be submitted in a sealed envelope (**Otherwise the bid will be treated as Non-Responsive**) as per schedule date and time mentioned in the critical data sheet on the date of submission of bid and addressed to the addressee given in the NIT duly super scribed "Name of Work, Bid due date and time." Name and address of the bidder should also be indicated on the envelope.

(i) Letter comprising " **Form of Letter of Application**".

(ii) Bid Document Fee.

(iii) Undertaking for **Bid Securing Declaration**.

(iv) Written Power of Attorney of the signatory (whose digital signature certificate is used during e-tender submission) of the bidder to commit the bid.

(v) An affidavit on a Stamp Paper, duly attested from the Notary Public, that the information furnished with the bid documents is correct in all respects

12.3 The following documents, which are not submitted with the bid, will be deemed to be part of the bid

Section	Particulars
1	Notice Inviting Tender
2	Instruction to the bidders
3.	Conditions of Contract
4.	Contract Data
5.	Technical Specifications

### **13. Bid Prices**

**13.1** The Contract shall be for the Works as described in Clause 1.1 based on the priced Bill of Quantities and percentage quote submitted by the Bidder.

**13.2** The bidder shall quote bid prices on appropriate format enclosed as part of tender document on e-tender portal i.e. [www.eprocure.gov.in](http://www.eprocure.gov.in). Bidders will be required to quote a single percentage above/below the overall estimated amount. This percentage would be applicable all the items of work in the contract for working out the rates for each item of work.

**13.3** All duties, taxes (except service tax), royalties and other levies payable by the Contractor under the Contract, or for any other cause, shall be included in the rates, prices, and total percentage quoted by the Bidder. The GST would be applicable over and above the total amount after the percentage quote of the bidder. The BOQ sheet may be referred.

**13.4** The rates and prices quoted by the Bidder shall be fixed for the duration of the Contract and shall not be subject to adjustment.

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

**14.1** The unit rates given in the BOQ is in Indian Rupees. All payments shall be made in Indian Rupees.

### **15. Bid Validity**

**15.1** Bids shall remain valid for a period of 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 Employer as non-responsive.

**15.2** In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidder's responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, 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. Earnest Money / Bid Security/ Forfeiture/ Debarment**

Bidder must submit Bid Securing Declaration. In case the bid is withdrawn or modified during the period of its validity or if the bidder fail to sign the contract in case the work is awarded to the bidder or the bidder fail to submit a performance security before the deadline defined in clause 7 of the Request for Proposal (RFP), then the bidder will be suspended for participation in the tendering process for the works of MoRTH/NHAI/NHIDCL and works under other Centrally Sponsored Schemes, for a period of one year from the bid due date of this work.

## **17. Alternative Proposals by Bidders**

**17.1** Bidder shall submit offers that fully comply with the requirement of the Bidding Documents. Conditional offer or alternate offer will not be considered further in the process of evaluation and the bid will be declared non-responsive.

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

**18.1** The Bidder shall submit e-bid comprising of the document as described in clause 12 of the ITB.

**18.2** DELETED.

**18.3** DELETED.

**18.4** The document to be submitted in the physical form along with the Bank Guarantee/Demand draft for Fees/Security shall be typed or written in ink and shall be signed by a person duly authorized to sign on behalf of the bidder. All the pages of the documents as mentioned here shall be signed by the person/persons signing the bid. Document as mentioned here shall contain no overwriting, alternation or additions except those to comply with instructions, issued by the employer or as necessary to correct errors made by the bidder, in which case such corrections shall be made by scoring out the cancelled portion, writing the correction and signing and dating it along with the stamp by the person or persons signing the Bid.

## **D. Submission of Bids**

### **19. Marking of Bids**

The document to be submitted in physical form as per clause 12.2 of ITB shall be submitted in a sealed Envelope super scribed as “Documents in physical Form” at the top left corner.

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

**20.1** Complete e-Bid to be uploaded on CPP portal before due date & time. The Envelope containing “Documents in Physical Form” must also be received by the Employer at any of the following address:

**Executive Director(P), Regional Office-Aizawl, 3rd Floor, T-86, Tuikhuahtlang, Aizawl, Mizoram-796001 Email:ro-mizoram@nhidcl.com** not later than the date and time indicated in the NIT. In the event of the specified date for the submission of documents in Physical form being declared a holiday for the Employer, the same will be received up to the specified time on the next working day.

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

**20.2** NHIDCL assumes no responsibility for inability of a bidder to submit bids through NHIDCL’s e-tendering portal on account of delay in submission at bidder's end. Bidder shall ensure that they submit the bid well before the "Due Date & Time of Bid-Submission". NHIDCL shall not be responsible if bidder is not able to submit the bid on account of failure in network/internet connection or any other technical reason.

### **21. Late Submission of Document in physical Form.**

Any document in physical form if received by the Employer after the deadline prescribed in Clause 20 will be returned unopened to the Bidder and also the e-bid submitted by such bidder shall not be considered.

### **22. Modification and Withdrawal of Bids.**

**22.1** Bidders may modify or withdraw their e-bids as directed on the e-tendering portal, before the Bid Due Date and time as prescribed in Clause 20.

**22.2** No bid may be modified after the deadline for online submission of bids.

**22.3** Withdrawal or modification of a Bid between the deadline for submission of bids and the expiration of the original period of bid validity specified in Clause 15.1 above or as extended pursuant to Clause 15.2 shall result in the forfeiture of the Bid security pursuant to Clause 16.

**22.4** Bidders may modify the prices of their bids before deadline of online submission of bid.

**22.5** No Late and delayed bids after Bid Due date/time shall be permitted in e tendering portal System. Time being displayed on our e-Tendering Portal shall be final and binding on bidder and bids have to be submitted by bidders considering this time only and not the time as per their location/country.

## **E. Bid Opening and Evaluation**

### **23. Bid Opening**

Bid opening shall be carried out in two stages. Firstly, 'Technical Bid' of all the bids received (except those received late) shall be opened on the date and time mentioned in Notice Inviting Tender (NIT). 'Financial Bid' of those bidders whose technical bid has been determined to be substantially responsible shall be opened on a subsequent date through online process of e-tendering, which will be notified to such bidders.

**23.1** The Employer will open the "Technical Bid" of all the bids received (except those received late), in the presence of the bidders/bidder's representatives who choose to attend at the time, date and place specified in the NIT. In the event of the specified date for the submission of bids being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day.

**23.2** In all cases, the Bid Securing Declaration of all bidders shall be verified. Thereafter, the Employer at the opening as the Employer may consider appropriate, will announce the bidders' names and such other details.

**23.3** The Employer will prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Clause 23.1.

**23.4** (i) The bids accompanied with valid bid security, bid document fee, will be taken up for evaluation with respect to the Information furnished in Part I of the Qualification Information and other bid.

(ii) Deleted

(iii) Deleted

(iv) As soon as possible, the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration. However, to assist in the examination, evaluation of technical bids, the Employer may at his discretion, ask any bidder for clarification of his bid, however, no additional documents in support of clarification will be entertained.

**23.5** The Employer shall inform the bidders whose technical bids are found responsive, of the date, time and place of opening of the financial bids. The bidders so informed, or their representative, may attend the meeting of opening of financial bids.

**23.6** At the time of the opening of the Financial Bid, the names of the bidders whose bids were found responsive in accordance with clause 23.5 will be announced. The financial bids of only these bidders will be opened. The responsive bidders names, the Bid prices, the total amount of each bid, pursuant to clause 22 and such other details as the Employer may consider appropriate will be announced by the Employer at the time of bid opening. Any Bid price, which is not read out and recorded, will not be taken into account in Bid Evaluation.

**23.7** The Employer shall prepare the minutes of the opening of the Financial Bids.

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

**24.1** Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other person not officially concerned with such process until the award to the successful Bidder has been announced. Any attempt by a Bidder to influence the Employer's processing of bids or award decisions may result in the rejection of his Bid

## **25. Clarification of Bids and Contacting the Employer**

**25.1.** To assist in the examination, evaluation, and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the Bid shall be sought, offered, or permitted

**25.2** Subject to sub-clause 25.1, no Bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded.

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

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

**26.1** During the detailed evaluation of "Technical Bids", the Employer will determine whether each Bid.

- (a) meets the eligibility criteria defined in Clauses 3 and 4 of ITB;
- (b) the required documents in physical form submitted by the bidder as well as the documents uploaded by the bidder are in order; and
- (c) is substantially responsive to the requirements of the Bidding Documents. During the detailed evaluation of the "Financial Bids", the responsiveness of the bids will be further determined

with respect to the remaining bid conditions, i.e., priced bill of quantities, technical specifications etc.

**26.2 DELETED.**

**26.3 DELETED.**

**27. DELETED.**

## **28. Evaluation and Comparison of Financial Bids**

**28.1** The Employer will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause 26.

**28.2 DELETED**

**28.3** If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's/Employer's estimate of the cost of work to be performed under the contract, the Employer 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 Employer may require that the amount of the performance security set forth in Clause 33 be increased and an additional performance security of 05 (five) percent may be obtained at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

### **Additional Performance Security**

(a) If the Bid Price offered by the Selected Bidder is lower than 10% but upto 20% of the estimated Project Cost, then the Additional Performance Security shall be calculated @20% of the difference in the (i) Estimated Project Cost (as mentioned in RFP)-10% of the Estimated Project Cost and (ii) the Bid Price offered by the selected Bidder.

(b) If the Bid Price offered by the Selected Bidder is lower than 20% of the Estimated Project Cost, then the Additional Performance Security shall be calculated @ 30% of the difference in the (i) Estimated Project Cost (as mentioned in RFP)-10% of the Estimated Project Cost and (ii) the Bid Price offered by the Selected Bidder.

(c) This Additional Performance Security shall be treated as part of the Performance Security.

**28.4** 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.

## **29. Price Preference**

29.1 There will be no price preference to any bidder

## **F. Award of Contract**

### **30. Award Criteria**

30.1 Subject to Clause 32, the Employer will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest evaluated Bid price, provided that such Bidder has been determined to be:

- a) Eligible in accordance with the provision of clause 3, and
- b) Qualified in accordance with the provision of clause 4

### **31. Employer's Right to accept any Bid and to reject any or all Bids**

31.1 Notwithstanding with Clause 30, the Employer reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Employer's action.

### **32. Notification of Award and Signing of Agreement.**

32.1 The bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the Part I *General Conditions of Contract* called the "Letter of Acceptance") will state the sum that the Employer will pay to 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").

32.2. The notification of award (LOA) will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause

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

32.4 Upon furnishing by the successful Bidder of the Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful.

### **33. Performance Security /Additional Performance Security**

33.1 Within 7 (seven) days after receipt of the Work Order, the successful Bidder shall deliver to the Employer a Performance Security of Five percent of the value of work order valid for the period of 28 days after the expiry of defect liability period of 12 (Twelve) months plus

additional security for unbalanced Bids in accordance with Clause 28.3 of ITB and sign the contract.

- 33.2 The performance security shall be either in the form of a Bank Guarantee or fixed deposit receipts in the name of the Employer, from a Bank as specified in case of bid security in Appendix to ITB.
  - 33.3 Failure of the successful bidder to comply with the requirement of sub-clause 33.1 shall constitute sufficient ground for cancellation of the award and forfeiture of the bid security.
  - 33.4 The successful bidder to whom 'LOA' has been issued is required to sign the agreement at Employer's office within 7 days of issue of LOA.
34. Advances- Deleted

### **35. Corrupt or Fraudulent Practices**

The Employer will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in computing 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 National Highways & Infrastructure Development Corporation Limited, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for the contractor, or in execution.

The Employer requires the bidders/Contractors to strictly observe the laws against fraud and corruption enforced in India, namely, Prevention of Corruption Act, 1988.

## Appendix to ITB

The Employer should fill out this Appendix to ITB before issuing the bidding documents. The insertions should correspond to the information provided in the Invitation for Bids.																			
Instructions to Bidders Clause Reference																			
(1.1)	The Employer is the “National Highways & Infrastructure Development Corporation Ltd” having its Corporate office at New Delhi and Regional Office at Aizawl.																		
(1.1)	Rehabilitation And Restoration of Sinking Portion NH-54 from Km 289+340 to Km 289+420 at Lawngtlai in the state of Mizoram																		
	<table border="1"> <thead> <tr> <th>Name of the Equipment</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>Tipper/Trucks</td> <td>2</td> </tr> <tr> <td>Hydraulic Excavator</td> <td>2</td> </tr> <tr> <td>Tandem Roller</td> <td>1</td> </tr> <tr> <td>Vibratory Roller</td> <td>2</td> </tr> <tr> <td>Front End Loader</td> <td>2</td> </tr> <tr> <td>Smooth Wheeled Roller</td> <td>2</td> </tr> <tr> <td>Water Tanker</td> <td>3</td> </tr> <tr> <td>Generator set (63/100/250 KVA)</td> <td>2</td> </tr> </tbody> </table>	Name of the Equipment	Quantity	Tipper/Trucks	2	Hydraulic Excavator	2	Tandem Roller	1	Vibratory Roller	2	Front End Loader	2	Smooth Wheeled Roller	2	Water Tanker	3	Generator set (63/100/250 KVA)	2
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Generator set (63/100/250 KVA)	2																		
	Any other equipment required for carrying out work as per Ministry’s specification.																		
	<p>Note:</p> <p>1. The bidder must produce the documentary evidence in support of his owning/leased/ rented of the above equipment’s. In case the bidder proposes to hire or take the above equipment on lease, he should, along with the lease/rent agreement, attach the proof of ownership of these equipment’s with the company/ entity from whom the equipment’s are proposed to be hired on lease/ rent. The bidder shall submit an undertaking as per Performa Appendix 1.7 (ITB, Section -2) of the bid document. However, bidder may assess the site requirement for additional plant/machinery/equipment’s for speedy completion at his cost.</p> <p>2. The bidder must upload scanned copy of the Documentary evidence in support of his owning/ leased/rented of the above</p>																		

	equipment. Any conditional evidence of deployment of above equipment or inadequate proof as required for any of the equipment shall make the bid non-responsive and financial bid shall not be opened.			
(4.4) (B) (b) (ii)	<b>The Number of Technical personnel, Qualifications and Experience will be as follows per part of work: The technical Personnel are as below:</b>			
Sl No	Personnel	Qualification	Particular Experience (minimum requirement)	No of Persons
1	Project Manager	B.E (Civil) or equivalent + 8 years Exp.	5 years on highway construction/maintenance work	1
2	Site Engineer	B.E (Civil) + 3 years Exp. or Diploma + 6 years Exp.	2 years on highway construction/maintenance work	2
3	Quantity Surveyor	B.E (Civil) + 3 years Exp. or Diploma + 6 years Exp.	2 years on highway construction/maintenance work	2
			Total	5
Note: The detailed signed and scanned CV's of the Key Technical Personnel at S No 1, signed by the key personnel himself, must be uploaded along with the bid. The name and educational qualification of other personnel should be given. Noncompliance of the above or non-furnishing of the CV as above or conditional deployment of any of the above personnel or proposal to employ lesser number of personnel than above shall make the bid non responsive and financial bid shall not be opened.				

### SECTION III

#### QUALIFICATION INFORMATION

The information to be filled in by the Bidder in this section & document submitted in physical form will be used for the purposes of post qualification as provided for in Clause 4 of the Instructions to Bidders. This information will not be incorporated in the Contract.

**Qualification Information**

**1. For Individual Bidders**

1.1 (a) Year of Constitution

(b) legal status of Bidder (Proprietorship/Partnership or Pvt. Ltd. firm)

*[Upload scanned copy of original]*

(c) Place of registration:

\_\_\_\_\_

(d) Principal place of business:

\_\_\_\_\_

1.2 Power of attorney of signatory of Bid *[Upload scanned copy & also supply Original copy in envelop of physical form]*

1.3. Total value of Civil Engineering construction work performed in the last five years (in Rs. \_\_\_\_ Lakhs) refer ITB Clause 4.4 A (a)

*(Upload scanned copies of certificate from Chartered Accountant & also supply original certificate from Chartered Accountant)*

2018-2019-----

2017-2018-----

2016-2017-----

2015-2016-----

2014-2015-----

Total -----

### Average per year

1.4 (a) Work performed as prime contractor, work performed in the past as a nominated sub-contractor provided further that all other qualification criteria are satisfied (in the same name) of a similar nature during the last five years as per ITB Clause 4.4A(b). 1.2 (a) Work performed as prime contractor, work performed in the past as a nominated sub- contractor provided further that all other qualification criteria are satisfied (in the same name) of a similar nature during the last five years as per ITB Clause 4.4A(b).

To calculate the value of "A" and "C"

1. A table containing value of Civil Engineering Works in respect of Projects (Turnkey projects / Item rate contract/ Construction works) undertaken by the Bidder during the last 5 years is as follows (the amount of bonus received, if any, shall be indicated separately):

2

Sl. No.	Year	Value of Civil Engg. Works undertaken Projects including bonus, if any (Rs. in Crores)	Amount of bonus (Rs. Crores)	Net Value excluding bonus (Rs. in Crores)
1	2018-19/2018			
2	2017-18/2017			
3	2016-17/2016			
4	2015-16/2015			
5	2014-15/2014			

3. Maximum value of projects that have been undertaken during the F.Y. out of the last 5 years and value excluding amount of bonus thereof is Rs. Crores

(Rupees \_\_\_\_\_). Further, value updated to the price level of the year

indicated in Appendix is as follows:

Rs. \_\_\_\_\_ Crores x \_ (Updation Factor as per Appendix) = Rs.

(Rupees \_\_\_\_\_ ) Crores

4. Amount of bonus received, if any. in Projects during the last 5 years (updated to the price level of the year indicated in Appendix):

SL No.	F.Y. /Calendar Year	Amount of Bonus (Rs. in Crores)	Updation Factor	Updated Amount of Bonus (Rs. in Crores)
1	2018-19/2018		1.10	
2	2017-18/2017		1.21	
3	2016-17/2016		1.33	
4	2015-16/2015		1.46	
5	2014-15/2014		1.61	
			Total (C)=	

<p>.....          .....          Name of the Statutory Auditor's firm:          Seal of the audit firm: (Signature, name and designation and Membership No. of authorised signatory)</p>	<p>.....          .....          Signature, name and designation of Authorised Signatory          For and on behalf of .....(Name of the Bidder)</p>
--	--

Date:

Place

To calculate the value of “B”

A table containing value of all the existing commitments and on-going works to be completed during the next \*\* years is as follows:

Sl. No.	Name of Project/ Work	Percentage of participation of Bidder in the project	Date of start / appointed date of project	Construction period as per Agreement/ LOA	Value of contract as per Agreement/LOA <sup>B</sup>	Value of work completed	Balance value of work to be completed	Anticipated date of completion	Balance value of work at 2017-18/2017 price level
					Rs. in Crore	Rs. in Crore	Rs. in Crore		Rs. in Crore
1	2	3	4	5	6	7	8= (6-7)	9	10(3x 8x #)

# Updation Factor as given below:

For Year	F.Y. / Calendar Year	Updation Factor
1	2018-19/2018	1.10
2	2017-18/2017	1.21
3	2016-17/2016	1.33
4	2015-16/2015	1.46
5	2014-15/2014	1.61

The Statement showing the value of all existing commitments, anticipated value of work to be completed in the period of construction of the project for which bid is invited and ongoing works as well as the stipulated period of completion remaining for each of the works mentioned above is verified from the certificate issued that has been countersigned by the Client or its Engineer-in-charge not below the rank of Executive Engineer or equivalent in respect of EPC Projects or Concessionaire / Authorised Signatory of SPV in respect of BOT Projects. No awarded / ongoing works has been left in the aforesaid statement which has been awarded to M/s.....individually / and other member M/s ..... and M/s ....., as on bid due date of this RFP.

..... ..... Signature, name and designation of Authorised Signatory For and on behalf of (Name of the Bidder)	..... ..... Name of the Statutory Auditor’s firm: Seal of the audit firm: (Signature, name and designation and Membership No. of authorised signatory)
---	--

Date: Place	
----------------	--

<sup>B</sup> In case balance period of construction is less than the value of period of construction of the project for which bid is invited, then full value of contract as per Agreement/LOA to be mentioned, else, anticipated value of work to be completed in the period of construction of the project for which bid is invited is to be mentioned. In the absence of the anticipated value of work to be completed, the proportionate value shall be considered while evaluating the Assessed Available Bid Capacity.

1.4. Availability of Key Equipment essential for carrying out the Works [Ref. Clause 4.4(B)(b) (i)]. The Bidder should list all the information requested below.

Item Equipment	of	Requirement		Availability Proposals			Page No of the proof attached
		No.	Capacity	Owned/ Leased/ rented	Nos./ Capacity	Age/ Condition	

Note: the bidder must upload the documentary evidence in support of his owning/leased/ rented of the above equipments. In case the bidder proposes to hire or take the above equipment on lease, he should, along with the lease/rent agreement, attach the proof of ownership of these equipments with the company/ entity from whom the equipments are proposed to be hired on lease/ rent. The bidder shall submit an undertaking as per performa appendix 1.7 (itb, section - 2) of the bid document.

1.5 Qualification and Experience of Key Personnel required for administration and execution of the Contract [Ref. Clause 4.4 (B) (b) (ii)]. Upload biographical data for technical personnel (Refer also to Cl. 4.2 (e) of Instruction to Bidders).

(Refer also to Sub Clause 9.1 of the Conditions of Contract).

Position	Name	Qualification	Total Professional Experience (Years)	Experience in the proposed position (Years)
Project Manager				
Site Engineer				
Quantity Surveyor				

NOTE: THE DETAILED AND SIGNED CV'S OF THE KEY TECHNICAL PERSONNEL AT S. NO. 1, SIGNED BY THE KEY PERSONNEL HIMSELF, MUST BE UPLOADED ALONG WITH THE BID. THE NAME AND EDUCATIONAL QUALIFICATION OF OTHER PERSONNEL SHOULD BE GIVEN.

---

1.6. Information on litigation history in which the Bidder is involved.

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

2. Bidders should upload the scanned copy of the following affidavits/ undertakings as per formats enclosed hereinafter & also send original copy of Affidavit :-

- (i) Affidavit (it should be on stamp paper attested by Notary Public)
- (ii) Undertaking regarding minimum investment of cash towards working capital.
- (iii) Undertaking that the Bids shall remain valid for the period specified in Clause 15.

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

(CLAUSE 4.2 (g) OF ITB)

BANK CERTIFICATE

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

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

Date:

\_\_\_\_\_

(Signature) Name of Bank

Senior Bank Manager Address of the Bank

AFFIDAVIT

1. I, the undersigned, do hereby certify that all the statements made in the enclosed attachments are true and correct.

2. The undersigned also hereby certifies that neither our firm M/s \_\_\_\_\_ have abandoned any work on National Highways in India nor any contract awarded to us for such works have been rescinded, during last five years prior to the date of this bid.

3. The undersigned hereby authorise(s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by NHIDCL to verify this statement or regarding my (our) competence and general reputation.

4. The undersigned understands and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the NHIDCL and within the prescribed time.

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

\_\_\_\_\_  
Name of the Representative

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

\_\_\_\_\_  
Date  
To be notarized by Notary

UNDERTAKING

I, the undersigned do hereby undertake that our firm M/s \_\_\_\_\_ would invest a minimum amount up to 25% of the value of the work during implementation of the Contract towards the working capital.

\_\_\_\_\_

(Signed by an Authorised Representative of the Firm)

\_\_\_\_\_  
Name of the Representative

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

\_\_\_\_\_  
DATE

UNDERTAKING

I, the undersigned do hereby undertake that our firm M/s \_\_\_\_\_ agree to abide by this bid for a period of \_\_\_\_\_ days after the date fixed for receiving the same and it shall be binding on us and may be accepted at any time before the expiration of that period.

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

\_\_\_\_\_  
Name of the Representative

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

\_\_\_\_\_  
DATE

(On the letter head of the bidder)  
**Appendix 1.7 [Ref. clause 4.4 B (b) (i)]**

**Undertaking**

I, the undersigned do hereby undertake that our firm M/s ..... agree to provide and will deploy required equipment as mentioned in the Appendix to ITB of the work .....further it is certified that the documents submitted as an evidence of availability of the key equipments for this work as stated in the Appendix to ITB, are genuine and correct. If anything contrary to the details as submitted is found at any stage NHIDCL would be at liberty to debar/blacklist my firm for an appropriate period as decided by NHIDCL.

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

\_\_\_\_\_  
Name of the Representative

\_\_\_\_\_  
Name of Firm  
(Seal of the company)

\_\_\_\_\_  
Date

Guidelines of the Department of Disinvestment

No. 6/4/2001-DD-II  
Government of India  
Department of Disinvestment

Block 14, CGO Complex  
New Delhi  
Dated: 13<sup>th</sup> July 2001

OFFICE MEMORANDUM

Sub: Guidelines for qualification of Bidders seeking to acquire stakes in Public Sector Enterprises through the process of disinvestment

Government has examined the issue of framing comprehensive and transparent guidelines defining the criteria for Bidders interested in PSE-disinvestment so that the parties selected through competitive bidding could inspire public confidence. Earlier, criteria like net worth, experience etc. used to be prescribed. Based on experience and in consultation with concerned departments, Government has decided to prescribe the following additional criteria for the qualification/ disqualification of the parties seeking to acquire stakes in public sector enterprises through disinvestment:

- (a) In regard to matters other than the security and integrity of the country, any conviction by a Court of Law or indictment/ adverse order by a regulatory authority that casts a doubt on the ability of the Bidder to manage the public sector unit when it is disinvested, or which relates to a grave offence would constitute disqualification. Grave offence is defined to be of such a nature that it outrages the moral sense of the community. The decision in regard to the nature of the offence would be taken on case to case basis after considering the facts of the case and relevant legal principles, by the Government of India.
- (b) In regard to matters relating to the security and integrity of the country, any charge-sheet by an agency of the Government/ conviction by a Court of Law for an offence committed by the bidding party or by any sister concern of the bidding party would result in disqualification. The decision in regard to the relationship between the sister concerns would be taken, based on the relevant facts and after examining whether the two concerns are substantially controlled by the same person/ persons.
- (c) In both (a) and (b), disqualification shall continue for a period that Government deems appropriate.
- (d) Any entity, which is disqualified from participating in the disinvestment process, would not be allowed to remain associated with it or get associated merely because it has preferred an appeal against the order based on which it has been disqualified. The mere pendency of appeal will have no effect on the disqualification.
- (e) The disqualification criteria would come into effect immediately and would apply to all Bidders for various disinvestment transactions, which have not been completed as yet.
- (f) Before disqualifying a concern, a Show Cause Notice why it should not be disqualified would

be issued to it and it would be given an opportunity to explain its position.

(g) Henceforth, these criteria will be prescribed in the advertisements seeking Expression of Interest (EOI) from the interested parties. The interested parties would be required to provide the information on the above criteria, along with their Expressions of Interest (EOI). The Bidders shall be required to provide with their EOI an undertaking to the effect that no investigation by a regulatory authority is pending against them. In case any investigation is pending against the concern or its sister concern or against its CEO or any of its Directors/ Managers/ employees, full details of such investigation including the name of the investigating agency, the charge/ offence for which the investigation has been launched, name and designation of persons against whom the investigation has been launched and other relevant information should be disclosed, to the satisfaction of the Government. For other criteria also, a similar undertaking shall be obtained along with EOI.

sd/

(A.K. Tewari)

Under Secretary to the Government of India

(On the letter head of the bidder)

**Undertaking**

I, the undersigned do hereby undertake that no investigation by a regulatory authority is pending against us and abide the conditions of the “Guidelines of the Department of Disinvestment”.

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

\_\_\_\_\_  
Name of the Representative

\_\_\_\_\_  
Name of Firm  
(Seal of the company)

\_\_\_\_\_  
Date

## SECTION-IV

(On the letter head of the bidder)

### **Undertaking regarding Bid Securing Declaration**

I hereby submit a declaration that the bid submitted by the undersigned, on behalf of the bidder, [Name of the bidder], shall not be withdrawn or modified during the period of validity, i.e. not less than 180 (one Hundred eighty) days from the bid due date.

I, on behalf of the bidder, [Name of the bidder], also accept the fact that in case the bid is withdrawn or modified during the period of its validity or if we fail to sign the contract in case the work is awarded to us or we fail to submit a performance security before the deadline defined in clause 7 of the Request for Proposal (RFP), then [Name of the bidder] will be suspended for participation in the tendering process for the works of MoRTH/NHAI/NHIDCL and works under other Centrally Sponsored Schemes, for a period of one year from the bid due date of this work.

(Signature of the Authorised Signatory)  
(Official-Seal)

**Format for Power of Attorney for signing of BID**

Know all men by these presents, We..... (name of the firm and address of the registered office) do hereby irrevocably constitute, nominate, appoint and authorize Mr./ Ms (name), ..... son/daughter/wife of ..... and presently residing at ..... , who is presently employed with us and holding the position of ..... , as our true and lawful attorney (hereinafter referred to as the “Attorney”) to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our BID for the Project proposed or being developed by the National Highways & Infrastructure Development Corporation Ltd (the “Authority”) including but not limited to signing and submission of all applications, BIDs and other documents and writings, participate in Pre-BID and other conferences and providing information/ responses to the Authority, representing us in all matters before the Authority, signing and execution of all contracts including the agreement and undertakings consequent to acceptance of our BID, and generally dealing with the Authority in all matters in connection with or relating to or arising out of our BID for the said Project and/ or upon award thereof to us and/or until the entering into of the EPC Contract with the Authority.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, ....., THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS ..... DAY OF ..... 2.....  
For .....

(Signature, name, designation and address) of person authorized by Board Resolution

(in case of Firm/ Company)/ partner in case of

Witnesses:

- 1.
- 2.

Accepted

.....

(Signature)

(Name, Title and Address of the Attorney)

Person identified by me/ personally appeared before me/

Partnership firm

(Notarised)

Attested/

Authenticated\* (\*Notary to specify as applicable) (Signature Name and Address of the Notary)

Seal of the  
Notary Registration No.  
of the Notary

Date:.....

*Notes:*

- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.*

- *Wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/ power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.*
- *For a Power of Attorney executed and issued overseas, the document will also have to be legalised by the Indian Embassy and notarised in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalised by the Indian Embassy if it carries a conforming Appostille certificate.*

FORM OF BANK GUARANTEE

[Performance Security/Additional Performance Security]

To  
Executive Director (Projects)  
Regional Office-Aizawl, 3<sup>rd</sup> Floor, T-86,  
Tuikhuahtlang, Aizawl, Mizoram-796001  
Email:ro-mizoram@nhidcl.com

WHEREAS \_\_\_\_\_ [name and address of Contractor]  
(hereafter called the “Contractor”) has undertaken, in pursuance of Letter of Acceptance (LOA) No.  
\_\_\_\_\_ Dated \_\_\_\_\_ for construction of \_\_\_\_\_ [name  
of the Project] (hereinafter called the “Contract”).

AND WHEREAS the Contract requires the Contractor to furnish an {Performance Security/  
Additional Performance Security} for due and faithful performance of its obligations, under and in  
accordance with the Contract, during the {Construction Period/ Defects Liability Period and  
Maintenance Period} in a sum of Rs..... cr. (Rupees crore) (the “Guarantee Amount”<sup>1</sup>).

AND WHEREAS we, ..... through our branch at ..... (the “Bank”) have agreed to  
furnish this Bank Guarantee (hereinafter called the “Guarantee”) by way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as  
follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful  
performance of the Contractor’s obligations during the {Construction Period/ Defects Liability  
Period and Maintenance Period} under and in accordance with the Contract, and agrees and  
undertakes to pay to the Authority, upon its mere first written demand, and without any demur,  
reservation, recourse, contest or protest, and without any reference to the Contractor, such sum  
or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the  
Authority being required to prove or to show grounds or reasons for its demand and/or for the sum  
specified therein.

2. A letter from the Authority, under the hand of an officer not below the rank of General  
Manager, NHIDCL that the Contractor has committed default in the due and faithful performance  
of all or any of its obligations under and in accordance with the Contract shall be conclusive, final  
and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to  
whether the Contractor is in default in due and faithful performance of its obligations during and  
under the Contract and its decision that the Contractor is in default shall be final and binding on  
the Bank, notwithstanding any differences between the Authority and the Contractor, or any  
dispute between them pending before any court, tribunal, arbitrators or any other authority or  
body, or by the discharge of the Contractor for any reason whatsoever.

3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.

4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.

5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Contract or to extend the time or period for the compliance with, fulfillment and/ or performance of all or any of the obligations of the Contractor contained in the Contract or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Contract or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Contract.

7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.

8. The Guarantee shall cease to be in force and effect on \*\*\*\*\$. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.

9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the

envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

§ Insert date atleast 2 (two) years from the date of issuance of this Guarantee (in accordance with Clause 2.21 of the RFP). The Contractors can submit the BG for periods of two years at one time and keep on renewing the same till the DLP is over if they have problems in getting the BG in one go for the entire DLP.

11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Contract.

12. This Guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

13 This guarantee shall also be operatable at our..... Branch at Aizawl, Mizoram (Complete Address of bank branch is mandatory), from whom, confirmation regarding the issue of this guarantee or extension / renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment there under claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.

The guarantor/bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform & shall invariably send an advice of this Bank Guarantee to the designated bank of NHIDCL, details of which is as under:

Sl. No	Particulars	Details
1	Name of the Beneficiary	National Highways and Infrastructure Development Corporation Limited
2	Beneficiary Bank Account No.	79601010002070
3	Beneficiary Bank Branch	IFSC SYNB0007960
4	Beneficiary Bank Branch Name	Syndicate Bank, Aizawl
5	Beneficiary Bank Address	Lower Chanmari, Aizawl

Signed and sealed this ..... day of ....., 20..... at .....

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by: (Signature)

(Name) (Designation) (Code Number) (Address)

## FORM OF LETTER OF APPLICATION

To,

**Executive Director (Projects)**

Regional Office-Aizawl, 3<sup>rd</sup> Floor, T-86,

Tuikhuahtlang, Aizawl, Mizoram-796001

**Email:ro-mizoram@nhidcl.com**

**Sub:** BID for Rehabilitation And Restoration of Sinking Portion NH-54 from Km 289+340 to Km 289+420 at Lawngtlai in the state of Mizoram.

Dear Sir,

With reference to your RFP document dated \*\*\* \*\*\$, I/we, having examined the Bidding Documents and understood their contents, hereby submit my/our BID for the aforesaid Project. The BID is unconditional and unqualified.

2. I/ We acknowledge that the Authority will be relying on the information provided in the BID and the documents accompanying the BID for selection of the Contractor for the aforesaid Project, and we certify that all information provided in the Bid along with the supporting documents are true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying the BID are true copies of their respective originals.

3. This statement is made for the express purpose of our selection as Contractor for the development, construction, rehabilitation and augmentation of the aforesaid Project and maintenance of the Project during the Defect Liability Period.

4. I/ We shall make available to the Authority any additional information it may find necessary or require to supplement or authenticate the BID.

5. I/ We acknowledge the right of the Authority to reject our BID without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.

6. I/ We certify that in the last two years, I/we have neither failed to perform for the works of Expressways, National Highways, ISC & EI works,, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against us, nor been expelled or terminated by Ministry of Road Transport & Highways or its implementing agencies for breach on our part.

7. I/ We declare that:

(a) I/ We have examined and have no reservations to the Bidding Documents, including any Addendum issued by the Authority; and

(b) Deleted.

(c) I/We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable

practice or restrictive practice, as defined in Clause 35 of the RFP document, in respect of any tender or request for proposal issued by or any Agreement entered into with the Authority or any other public sector enterprise or any government, Central or State; and

(d) I/ We hereby certify that we have taken steps to ensure that in conformity with the provisions of Clause 35 of the RFP, no person acting for us or on our behalf has engaged or will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice; and

(e) the undertakings given by us along with the Application in response to the RFP for the Project and information mentioned for the evaluation of the BID Capacity as per Section 3 were true and correct as on the date of making the Application and are also true and correct as on the BID Due Date and I/we shall continue to abide by them.

8. I/ We understand that you may cancel the Bidding Process at any time and that you are neither bound to accept any BID that you may receive nor to invite the Bidders to BID for the Project, without incurring any liability to the Bidders, in accordance with the RFP document.

9. I/We believe that I/we satisfy(s) the Threshold Technical Capacity, Net Worth criteria and meet(s) the requirements as specified in the RFP document.

10. Deleted.

11. I/ We certify that in regard to matters other than security and integrity of the country, I/we have not been convicted by a Court of Law or indicted or adverse orders passed by a regulatory authority which could cast a doubt on our ability to undertake the Project or which relates to a grave offence that outrages the moral sense of the community.

12. I/ We further certify that in regard to matters relating to security and integrity of the country, I/we have not been charge-sheeted by any agency of the Government or convicted by a Court of Law.

13. I/ We further certify that no investigation by a regulatory authority is pending either against us or against our CEO or any of our directors/ managers/ employees.

14. Deleted.

15. I/ We undertake that in case due to any change in facts or circumstances during the Bidding Process, we are attracted by the provisions of disqualification in terms of the guidelines referred to above, we shall intimate the Authority of the same immediately.

16. I/We further acknowledge and agree that in the event such change in control occurs after signing of the Agreement upto its validity. It would, notwithstanding anything to the contrary contained in the Agreement, be deemed a breach thereof, and the Agreement shall be liable to be terminated without the Authority being liable to us in any manner whatsoever.

17. I/ We hereby irrevocably waive any right or remedy which we may have at any stage

at law or howsoever otherwise arising to challenge or question any decision taken by the Authority in connection with the selection of the Bidder, or in connection with the Bidding Process itself, in respect of the above mentioned Project and the terms and implementation thereof.

18. In the event of my/ our being declared as the Selected Bidder, I/we agree to enter into a Agreement in accordance with the draft that has been provided to me/us prior to the BID Due Date. We agree not to seek any changes in the aforesaid draft and agree to abide by the same.

19. I/ We have studied all the Bidding Documents carefully and also surveyed the project highway and the traffic. We understand that except to the extent as expressly set for thin the Agreement, we shall have no claim, right or title arising out of any documents or information provided to us by the Authority or in respect of any matter arising out of or relating to the Bidding Process including the award of Agreement.

20. Deleted.

21. Deleted.

22. The documents accompanying the Technical BID, as specified in the RFP, have been submitted in separate files.

23. I/ We agree and understand that the BID is subject to the provisions of the Bidding Documents. In no case, I/we shall have any claim or right of whatsoever nature if the Project / Contract is not awarded to me/us or our BID is not opened or rejected.

24. The BID Price has been quoted by me/us after taking into consideration all the terms and conditions stated in the RFP, draft Agreement, our own estimates of costs and after a careful assessment of the site and all the conditions that may affect the project cost and implementation of the project.

25. I/ We agree and undertake to abide by all the terms and conditions of the RFP document.

26. Deleted.

27. I/ We shall keep this offer valid for 120 (one hundred and twenty) days from the BID Due Date specified in the RFP.

28 I/ We hereby submit our BID and offer a BID Price as indicated in Financial Bid for undertaking the aforesaid Project in accordance with the Bidding Documents and the Agreement.

In witness thereof, I/we submit this BID under and in accordance with the terms of the RFP document. Yours faithfully,

Date:  
Place:

(Signature, name and designation  
of the Authorised signatory)

Name & seal of Bidder

Details of Bidder (to be annexed with letter of application)

1. (a) Name:  
(b) Country of incorporation:  
(c) Address of the corporate headquarters and its branch office(s), if any, in India:  
(d) Date of incorporation and/ or commencement of business:
2. Brief description of the Bidder including details of its main lines of business and proposed role and responsibilities in this Project:
3. Details of individual(s) who will serve as the point of contact/ communication for the Authority:
  - (a) Name:
  - (b) Designation:
  - (c) Company:
  - (d) Address:
  - (e) Telephone Number:
  - (f) E-Mail Address:
  - (g) Fax Number:
4. Particulars of the Authorised Signatory of the Bidder:
  - (a) Name:
  - (b) Designation:
  - (c) Address:
  - (d) Phone Number:
  - (e) Fax Number:
  - (f) Class III Digital Signature Certificate ID number

5. Deleted.

6(a) I/ We certify that in the last two years, we have neither failed to perform for the works of Expressways, National Highways, ISC & EI works, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitral award against us, nor been expelled or terminated by Ministry of Road Transport & Highways or its implementing agencies for breach on our part.

(b) I/ We certify that we do not fall in any of the categories of being a Non-Performing entity given at Clause 2.1.14 of Instructions to Bidders in the projects of Expressways, National Highways, ISC and EI works of Ministry of Road Transport & Highways or its implementing agencies and furnished the complete details.

7(a) I/ We further certify that no investigation by a regulatory authority is pending either against us or our sister concern or against our CEO or any of our directors/managers/employees.

(b) I/ We further certify that no investigation by any investigating agency in India or outside is pending either against us or our sister concern or against our CEO or any of our directors/managers/employees.

A statement by the Bidder disclosing material non-performance or contractual non-compliance in current projects, as on bid due date is given below (attach extra sheets, if necessary) w.r.t. para 2.1.14.

Name of the Bidder: \_\_\_\_\_

Sr. No.	Categories of Non-Performer	Project 1	Project 2
(i)	Fails to complete or has missed more than two milestones in already awarded two or more projects, even after lapse of 6 months from the scheduled completion date, unless Extension of Time has been allowed on the recommendations of the Independent Engineer due to Authority's default;		
(ii)	Fails to complete a project, as per revised schedule, for which One Time Fund Infusion (OTFI) has been sanctioned by the Authority;		
(iii)	Physical progress on any project is not commensurate with the funds released (equity+debt+grant) from the escrow account and such variation is more than 25% in last one year as observed by the Independent Engineer in one or more projects;		
(iv)	Punch List Items in respect of any project are pending due to Bidder's default in two or more Projects even after lapse of the prescribed time for completion of such items;		
(v)	Fails to fulfil its obligations to maintain a highway in a satisfactory condition inspite of two rectification notices issued in this behalf;		
(vi)	Fails to attend to Non Conformity Reports (NCRs) issued by the Independent/ Authority's Engineer on the designs/ works constructed by the Bidder pending for more than one year in two or more projects.		
(vii)	Fails to make premium payments excluding the current instalment in one or more projects.		
(viii)	Damages/Penalties recommended by the Independent/ Authority's Engineer on the Bidder during O&M period and the remedial works are not taken up in two or more projects.		

(ix)	Fails to achieve financial closure in two or more projects within the given or extended period (which shall not be more than six months in any case).		
(x)	Fails to submit the Performance Security within the permissible period in more than one project(s).		
(xi)	Rated as an unsatisfactory performing entity/ non-		

	performing entity by an independent third party agency and so notified on the website of the Authority.		
--	---	--	--

I/ We certify that the list is complete and covers all the projects of Expressways, National Highways, ISC and EI works of Ministry of Road Transport & Highways or its implementing agencies and that we do not fall in any of the above categories of being a Non-Performing entity.

(Signature, name and designation of the authorised signatory) For  
and on behalf of.....

**FORM OF LETTER OF ACCEPTANCE**

No. ....

Dated .....

To

M/S.....

---

**Sub:** Rehabilitation And Restoration of Sinking Portion NH-54 from Km 289+340 to Km 289+420 at Lawngtlai in the state of Mizoram.

Sir,

Based on your bid submitted on ..... in compliance of bidding document of NHIDCL for execution of the work of “Rehabilitation And Restoration of Sinking Portion NH-54 from Km 289+340 to Km 289+420 at Lawngtlai in the state of Mizoram”, it is hereby notified that your bid for a contract price of Rs \_\_\_\_\_ (Rupees in words...) has been accepted for and on behalf of NHIDCL.

2 You are hereby requested to furnish Performance Security plus additional security in the form detailed in para. 33.2 of ITB for an amount equivalent to Rs \_\_\_\_\_ (Rupees in words... ) within 10 days as per provisions of clause 33.1 of ITB of the bid document and sign the contract agreement failing which the actions as stipulated in clause 33.3 of ITB shall be taken.

Thanking you,

Yours faithfully,

(.....)

**Executive Director (P)**

## FORM OF AGREEMENT

This agreement made the \_\_\_\_\_ day of \_\_\_\_\_ 2020 between the National Highways & Infrastructure Development Corporation Ltd., New Delhi (hereinafter called “the Employer” of the one part and \_\_\_\_\_ (here in after called “the Contractor”) of the other part.

AND WHEREAS the Employer invited bids from eligible bidders for the execution of certain works, viz “Rehabilitation And Restoration of Sinking Portion NH-54 from Km 289+340 to Km 289+420 at Lawngtlai in the state of Mizoram”

AND WHEREAS pursuant to the bid submitted by the Contractor, vide \_\_\_\_\_ (here in after referred to as the “BID” or “OFFER”) for the execution of works, the Employer by his letter of acceptance dated \_\_\_\_\_ accepted the offer submitted by the Contractor for the execution and completion of such works and remedying of any defects thereon, on terms and conditions in accordance with the documents listed in para 2 below.

AND WHEREAS the Contractor by a deed of undertaking dated \_\_\_\_\_ has agreed to abide by all the terms of the bid, including but not limited to the amount quoted for the execution of Contract, as stated in the bid, and also to comply with such terms and conditions as may be required from time to time.

AND WHEREAS the contractor has agreed to undertake such works and has furnished a performance security pursuant to clause 33 of the instructions to bidders (Section-I).

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this agreement words and expressions shall have the same meaning as are respectively assigned to them in the conditions of contract hereinafter referred to;

2. The following documents shall be deemed to form and be read and construed as part of this agreement viz.

- (a) Contract Agreement,
- (b) Letter of Acceptance
- (c) Notice to proceed with the works
- (d) Contractor's Bid,
- (e) Contract Data,
- (f) Conditions of Contract
- (g) Technical Specifications,
- (h) Drawings, if any
- (i) Scope of Work
- (j) Bill of Quantities, and

- (k) Any other document listed in the Contract Data.
- (l) RFP

3. The foregoing documents shall be construed as complementary and mutually explanatory one with another. Should any ambiguity or discrepancy be noted then the order of precedence of these documents shall be subject to the order as listed above and interpreted in the above order of priority.

4. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the works and remedy any defects therein in conformity in all respects with the provisions of the contract.

5. the employer hereby covenants to pay the contractor in consideration of the execution and completion of the works and remedying of defects therein, the 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.

IN WITNESS WHEREOF the parties here to have caused this agreement to be executed the day and year above written. Signed, sealed and delivered by the said Employer through his Authorized Representative and the said Contractor through his Power of Attorney holder.

Binding Signature of Employer \_\_\_\_

For and on behalf of National Highways & Infrastructure Development Corporation

Binding Signature of Contractor \_\_

For and on behalf of M/s. \_\_\_\_\_

In the presence of		In the Presence of
1. Name :	1.	Name:
Address:		Address:
2. Name :	2.	Name:
Address:		Address:

**(SECTION-V)**

**CONDITIONS OF CONTRACT**

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## Section V Conditions of Contract

### A. General

#### 1. Definitions

1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Capital initials are used to identify defined terms.

**Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid.

**The Completion Date** is the date of completion of each work order as certified by the Engineer.

**The Contract** is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in Clause 2.2.

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

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

**The Contractor's Bid** is the completed upon the online submission of the Bid and subsequent submission of documents to be submitted in the physical form as required under the ITB.

**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 Certificate** is the certificate issued by Engineer, after the Defect Liability Period has ended and upon correction of Defects by the Contractor.

**Defect liability period** for work shall be 06Months from the date of completion certificate issued by the Engineer.

**The Employer** is the party as defined in the Contract Data, who employs the Contractor to carry out the Works. The Employer may delegate any or all of its functions to a person or body nominated by him for specified functions.

**The Engineer** is the person named in the Contract Data (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Engineer) who is responsible for supervising the execution of the Works and administering the Contract.

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

**The Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Work Order. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer by issuing an extension of time after the approval from Employer.

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

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

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

**Specification** 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 the date within 7 days after the date of issue of Work Order.

**Temporary Works** are works designed, constructed, installed and removed from NHIDCL, which varies the works.

**Validity** is the period of one year from date of signing of contract agreement which may be extended by the employer.

A **Variation** is an instruction given by the Engineer after the approval from NHIDCL, which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install, maintain, and handover to the Employer, as defined in the Contract Data.

**Work Order** is the order containing the detailed scope of work to be executed at site indicated in the order when issued by the employer as and when required.

## **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 these Conditions of Contract.

**2.2** The documents forming the Contract shall be interpreted in the following order of priority.

- (a) Agreement,
- (b) Letter of Acceptance
- (c) Contractor's Bid,
- (d) Contract Data,
- (e) Conditions of Contract
- (f) Technical Specifications,
- (g) Drawings, if any

- (h) Implementation Manual
- (i) Scope of Work
- (j) Bill of Quantities, and
- (k) Any other document listed in the Contract Data.

### **3. Language and Law**

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

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

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

### **5. Delegation**

5.1 The Engineer, duly informing the Employer, 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 that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.

### **7. Subcontracting**

7.1 The Contractor may not subcontract any portion of work, in Contract Data, with the prior approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.

7.2 The Contractor shall not be required to obtain any consent from the Employer for:

- a. the sub-contracting of any part of the Works for which the Sub-Contractor is named in the Contract;
- b. the provision of labour or labour component.
- c. the purchase of Materials which are in accordance with the standards specified in the Contract.

7.3 Beyond what has been stated in clauses 7.1 and 7.2, if the Contractor proposes sub-contracting of any part of the work during execution of the Works, because of some unforeseen circumstances to enable him to complete the Works as per terms of the Contract, the Employer will consider the following before according approval:

- a) The Contractor shall not sub-contract the Works more than 50% of the work order(s) issued.
- b) The Contractor shall not sub-contract any part of the Work without prior consent of the Employer. Any such consent shall not relieve the Contractor from any liability or obligation under

the Contract and he shall be responsible for the acts, defaults and neglects of any of his sub-Contractor, his agents or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents and workmen.

7.4 The Engineer should satisfy himself before recommending to the Employer whether

- a) The circumstances warrant such sub-contracting; and
- b) the sub-Contractor so proposed for the Work possess the experience, qualifications and equipment necessary for the job proposed to be entrusted to him in proportion to the quantum of Works to be sub-contracted.

## **8. Other Contractors**

The Contractor shall cooperate and share the Site with other Contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors, as referred to in the Contract Data. The Contractor shall also provide facilities and services for them as described in the Schedule. The 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 technical personnel named in the Contract Data or other technical persons approved by the Engineer. The Engineer will approve any proposed replacement of technical personnel only if their relevant qualifications and experience are substantially equal to or better than those of the personnel stated in the Contract Data. If the personnel stated in the contract data are not deployed on site by the contractor, it will be treated as a breach of contract and action will be taken as per clause 53.

9.2 If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or 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 Works in the Contract.

## **10. Employer's and Contractor's Risks**

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

## **11. Employer's Risks**

11.1 The 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 to 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 at his cost shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of defect liability period for events (a) to (d), 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 to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
- d) Personal injury or death.

**13.2** Insurance 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 Indian Rupees to rectify the loss or damage incurred.

**13.3** If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be 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, may rely on any Site Investigation Reports referred to in the Contract Data, supplemented by any other information available to him, before submitting the bid.

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

Queries on the Contract Data, if raised in written form, will be clarified by PMU responsible for execution of the work. For this work, PMU office at Lawngtlai, headed by General Manager (Projects) may be contacted.

## **16. Contractor to Construct the Works & do maintenance**

The Contractor shall construct, install and maintain the Works in accordance with the documents forming part of the contract.

**17. The Works to be completed by the Intended Completion Date indicated in each work order.**

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 of each work order.

**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 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.

**19. Safety**

**19.1** The Contractor shall be responsible for the safety of all activities on the Site. The contractor shall make necessary arrangements for safety of traffic as the road.

**19.2** All the construction activities are to be performed on the Highways with heavy traffic. For the safety of road users, and that of labourer working at site, traffic management installations are to be set up by the contractor in accordance with MORT&H clause no. 112. A schematic figure / arrangement showing various components of traffic management installations should be submitted by the contractor to the engineer for his approval.

**20. Discoveries**

**20.1** Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall 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 Employer shall give complete possession of the Site to the Contractor on the date of signing of agreement.

## **22. Access to the Site**

**22.1** The Contractor shall allow access to the Site and to any place where work in connection with the Contract is being carried out, or is intended to be carried out to the engineer and any person/persons/agency authorized by:

- a. The Engineer
- b. The Employer

## **23. Instructions**

**23.1** The Contractor shall carry out all instructions of the Engineer, which comply with the applicable laws where the Site is located.

**23.2** The Contractor shall permit the Employer 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 Employer if so required by the Employer.

## **24. Deleted**

## **25. ARBITRATION**

The procedure for arbitration will be as follows:

- (a) In case of Dispute or difference arising between the Employer and a domestic contractor relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 arbitrators one each to be appointed by the Employer and the Contractor. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as presiding 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 General of Indian Road Congress.
- (b) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause (a) and (b) above within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, then the Secretary General of Indian Road Congress shall appoint the arbitrator. A certified copy of the order of the Secretary General of Indian Road Congress making such an appointment shall be furnished to each of the parties.
- (c) Arbitration proceedings shall be held at New Delhi, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.
- (d) The decision of the majority of arbitrators shall be final and binding upon both parties.
- (e) The cost and expenses of Arbitration proceedings will be borne equally by both parties in accordance with the following fee structure (the signing of the contract shall be the acceptance of the fee structure given below by both the parties):

S. No.	Particulars of fee and other charges	Schedule Amount payable per Arbitrator/ per case
1.	Arbitrator fee	Rs.15,000/- per day subject to a publishing the Award within 12 months. 12 months will be reckoned from the date of first meeting.
2.	Reading Charges	Rs.15,000/-
3.	Secretarial Assistance and Incidental Charges (telephone, fax, postage etc.)	Rs.10000/-
4.	Charges for Publishing/ declaration of the Award	Maximum of Rs.10000/-
5.	Other expenses (As per actual Against bills subject to maximum of the prescribed ceiling given below) Traveling Expenses, Lodging and Boarding	Economy class by air, first class AC by train, AC car by road. (i) Up to Rs.15,000/- per day (metro cities) (ii) Up to Rs.7,000/- per day (other cities) (iii)Rs.3,000/- per day own arrangement)
6.	Local Travel	Rs.1,500/- per day
7.	Extra charges for days other than hearing / meeting days (maximum for 2 days	Rs.3,500/- per day
<b>Note:-</b>	<b>Lodging, boarding and traveling expenses shall be allowed only for those members who are residing 100kms. Away from place of meeting. Delhi, Mumbai, Chennai, Kolkata, Bangalore and Hyderabad shall be considered as Metro Cities.</b>	

However, the expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings shall be borne by each party itself.

- (f) 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.

26 Deleted

## **B. Time Control**

### **27. Programme**

**27.1** The Employer shall issue the indent of work in stages specifying the time limit for the same as and when required as per site condition.

**27.2** Within time stated in the Contract data the contractor shall submit to the Engineer for approval a Programme as per Clause 22.1 showing the general methods, arrangements, order, and timing for all the activities in the works along with cash flow forecast.

**27.3** 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 sequences of the activities.

**27.4** 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.

**27.5** The Engineer's approval of the programme shall not alter the Contractors 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 Completion Date**

**28.1** The Engineer shall extend the Completion Date in case full justification exists, only after the approval of NHIDCL, 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 Works, which would cause the Contractor to incur additional cost. No price variation will be payable during the extended period.

**28.2** The Engineer shall decide whether and by how much time to extend the Intended Completion Date within 21 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 cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Indented Completion Date.

## **29. Delays Ordered by the Engineer**

**29.1** The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works. Delay/delays totaling more than 30 days will require prior written approval of the Employer.

## **30. Management Meetings**

**30.1** The Engineer may require the Contractor to attend a management meeting. The business of a management meeting shall be to review the plans for the Works.

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

## C. Quality Control

### Identifying Defects

**31.1** 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.

### 32. Tests

**32.1** The contractor shall be solely responsible for:

- a. Carrying out the mandatory tests prescribed in the documents forming part of contract.
- b. For the correctness of the test results, whether preformed in his laboratory or elsewhere.

**32.2** 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.

**32.3** Subject to further condition in contract data

### 33. Correction of Defects noticed during the Defect Liability Period.

**33.1** It is the terms of contract that Short Term Improvement and Maintenance of road shall be of very high standard, requiring no major repairs for at least Twelve (12) months after the date of completion of works.

**33.2** If any defects including shrinkage, cracks and other faults appear in the work within Twelve months of "Taking over" certificate, 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 for Twelve months thereafter. The Defects Liability shall be extended for as long as defects remain to be corrected.

**33.3** Every time notice of a defect is given, the Contractor shall correct the notified defect at his own cost within the length of time specified by the Engineer's notice. If the contractor is in default the Engineer shall cause the same to be made good by other workmen and deduct the expenses from any sums that may be due to the contractor.

### 34. Uncorrected Defects

**34.1** If the Contractor has not corrected a Defect/completed the work, to the satisfaction of the Engineer, within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect corrected/completed, and the Contractor will pay this amount.

**34.2** If the Contractor has not completed the work to the satisfaction of the engineer, within the time specified in the Employer's notice/indent, in no case exceeding one month, the engineer will assess the cost of having the work completed through some agency and the contractor will pay this amount in addition to the damages specified as per clause 45.

## **D. Cost Control**

### **35. Bill of Quantities**

**35.1** The Bill of Quantities shall contain items for the construction, installation, testing, and commissioning and maintaining works to be done by the Contractor.

**35.2** The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rates in the Bill of Quantities for each item for the work executed.

### **35.3 Changes in the Quantities**

**35.3.1** Deleted

**35.3.2** Deleted

#### **35.3.3 Change of scope**

The proposed section of National Highway in the contract is being made to Two lane hence, the contractor shall not claim anything from NHIDCL on account of earlier termination of the contract i.e. before the expiry of the scheduled contract period on account of award of work for two laning of the Highway.

Work order will be issued based on as and when required basis. The work may be required to be partially executed or may not be executed at all by NHIDCL. No claim whatsoever from any of the selected bidders on this account shall be entertained in this regard.

## **36. Variations**

**36.1** The Engineer shall, having regard to the scope of the Works and the sanctioned estimated cost, have power to order only after approval from NHIDCL / as per NHIDCL guidelines, in writing, Variations within the scope of the Works he considers necessary or advisable during the progress of the Works. Such Variations shall form part of the Contract and the Contractor shall carry them out and include them in updated Programmes produced by the Contractor. Oral orders of the Engineer for Variations, unless followed by written confirmation, shall not be taken into account.

## **37. Payments for Variations**

**37.1** If rates for Variation items are specified in the Bill of Quantities, the Contractor shall carry out such work at the same rate.

**37.2** If the rates for Variation are not specified in the Bill of Quantities, the Engineer shall derive the rate from similar items in the Bill of Quantities

37.3 If the rate for Variation item cannot be determined in the manner specified in Clause 37.1 or 37.2, the Contractor shall, within 14 days of the issue of order of Variation work, inform the Engineer the rate which he proposes to claim, supported by analysis of the rates. The Engineer shall assess the quotation and determine the rate based on prevailing market rates within one month of the submission of the claim by the Contractor and approval from NHIDCL will be taken. As far as possible, the rate analysis shall be based on the standard data book and the current schedule of rates of the district public works division. The decision of the Employer on the rate so determined shall be final and binding on the Contractor

### **38. Cash Flow Forecasts**

38.1 When the Programme is updated, the Contractor shall provide the Engineer withan updated cash flow forecast.

### **39. Payment Certificates**

39.1 The Contractor shall submit to the Engineer, statements on completion of 50% of the value of the work executed less the cumulative amount certified previously supported with detailed measurement of the items of work executed.

39.2 Deleted

39.3 The value of work executed shall be determined, based on measurements by the Engineer.

39.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

39.5 The value of work executed shall also include the valuation of Variations and Compensation Events.

39.6 The Engineer / Employer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

39.7 The final bill shall be submitted by the contractor within 30 days of the actual date of completion of the work; otherwise the Engineers certificate of the measurement and of the total amount payable for work accordingly shall be final and payment made accordingly within a period of sixty days as far as possible.

## **40. Payments**

40.1 Payments shall be adjusted for deductions for advance payments (if any), security deposit, other recoveries in terms of the Contract and taxes at source, as applicable under the law. The Employer shall pay the Contractor the amounts Engineer had certified within 15 days of the date of each certificate.

40.2 The Authorized Representative of the Employer shall make the payment certified by the Engineer.

40.3 Items of the Works for which no rate or price has been entered in the Bill of Quantities, will not be paid for by the Employer and shall be deemed to be covered by other rates and prices in the Contract.

## **41. Compensation Events**

41.1 The following shall be Compensation Events unless they are caused by the Contractor:

- a) The Engineer orders a delay or delays exceeding a total of 30 days.
- b) The effects on the Contractor of any of the Employer's Risks.

41.2 If a Compensation Event would prevent the Works being completed before the Intended Completion Date, the Intended Completion Date shall be extended. The Engineer shall decide whether and by how much the Intended Completion Date shall be extended after the approval of the employer.

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

## **42. Taxes & Currencies for payments**

42.1 The rates quoted by the Contractor shall be deemed to be inclusive of the sales and other levies, duties, royalties, cess, toll, taxes (except service tax) of Central and State Governments, local bodies and authorities that the Contractor will have to pay for the performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at source as per applicable law. The service tax shall be reimbursed (if applicable) subject to production of proof of such payment by the contractor (proof should contain name of work).

42.2 All payments will be made in Indian Rupees.

## **43. Price Adjustment - Deleted**

43.1. Deleted

43.2. Deleted

## **44. Security Deposit / Retention Money**

44.1 The Employer shall retain security deposit of five percent of the amount from each payment due to the Contractor until Completion of the whole of the Works.

44.2 The security deposit/retention money and the performance security will be released to the Contractor when the Defect Liability period is over, and the Engineer has certified that the Defects, if any, notified by the Engineer to the Contractor before the end of this period have been corrected.

44.3 If the contractor so desires then the Security Deposit/retention money can be released on submission of unconditional Bank Guarantee at the following two stages:-

- (a) At a point after the progress of work in financial term (gross value of work done) has reached 50% of the contract amount
- (b) After the retention money has been deducted to the full value (5% of the Contract Amount).

#### **45. Liquidated Damages**

45.1 The Contractor shall pay liquidated damages to the Employer at the rate or part thereof stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's other liabilities.

45.2 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 in the next payment certificate. The contractor shall not be paid interest on the over payment of liquidated damages.

#### **46. Advance Payment: Deleted**

#### **47. Securities**

47.1 Subject to further condition in contract data, the Performance Security equal to ten percent of the contract price and additional security for unbalanced bids shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in the form given in the Contract Data and by a prescribed bank. The Performance Security shall be valid until a date 28 days after the expiry of Defect Liability Period and the additional performance security for unbalanced bids shall be valid until a date 28 days from the date of issue of the certificate of completion. The validity shall account for additional 3 months time to account for BG verification, signing of contract and start date

#### **48. Cost of Repairs**

48.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Liability Period shall be remedied/ rectified by the Contractor at their cost if the loss or damage arises from the Contractor's acts or omissions.

## **E. Finishing the Contract**

### **49. Completion**

**49.1** The Contractor shall request the Engineer to issue a certificate of Completion of each work order, and the Engineer will do so upon deciding that the Work is completed.

### **50. Taking Over**

**50.1** The Employer shall take over the Site and the Works within seven days of the Engineer's issuing a certificate of Completion.

### **51. Final Account**

**51.1** The Contractor shall supply to the Engineer with 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 Defects 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.

### **52. Operating and Maintenance Manual**

**52.1** If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them within 28 days from date of issue of certificate of completion.

**52.2** If the Contractor does not supply the Drawings and/or manuals by the stipulated date or they do not receive the Engineer's approval, the Engineer shall withhold the amount equal to Rs. 5 lakhs from payments due to the Contractor.

### **53. Termination**

**53.1** The Employer may terminate the Contract if the Contractor causes a fundamental breach of the Contract.

**53.2** Fundamental breaches of Contract include, but shall not be limited to the following:

- a) The Contractor stops work for 10 days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Engineer;
- b) The Contractor is declared as bankrupt or goes into liquidation other than for approved reconstitution or amalgamation;
- c) The Engineer/Employer 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;

- d) The Contractor does not maintain a Security, which is required;
- e) The Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in clause 45;
- f) The Contractor fails to provide insurance cover as required under clause 13;
- g) If the Contractor, in the judgment of the Employer, has engaged in the corrupt or fraudulent practice in competing for or in executing the Contract. For the purpose of this clause, “corrupt practice” means offering, giving, receiving, or soliciting of anything 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 Employer and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid process at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.
- h) If the Contractor has not completed at least thirty percent of the value of Work required to be completed after half of the completion period has elapsed;
- i) If the Contractor fails to set up a field laboratory with the prescribed equipment, within the period specified; and
- j) Any other fundamental breach as specified in the Contract Data.

53.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

53.4 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 but in no case later than 7 days.

#### **54. Payment upon Termination**

54.1 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 and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

54.2 Save and except Cl. 35.3.3, if the Contract is terminated at the Employer's convenience, the Engineer shall issue a certificate for the value of the work done, 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 payments outstanding on 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. In case of termination on account of award of 2laning work stated in Cl. 35.3.3, the Engineer shall issue a certificate for the value of work done till termination, less advance payments outstanding, less other recoveries due in terms of contract and less taxes due to be deducted at source as per applicable law.

#### **55. Property**

55.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer for use for completing balance work if the Contract is terminated because of the Contractor's default.

## **56. Release from Performance**

56.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of the Employer 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 a commitment was made.

## **F. Other Conditions of Contract**

### **57. Labour**

57.1 The Contractor shall, make arrangements of his own cost and expenses for the engagement of all staff and labour, local or others; for their payment, housing, feeding and transport; and for compliance with various labour laws/ regulations.

57.2 The Contractor shall, as asked 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 numbers 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.

## **58. COMPLIANCE WITH LABOUR REGULATIONS**

58.1 During the currency of the Contract, the Contractor and his sub-Contractors shall abide at all times by all existing labour enactments and rules made there under, 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 notified already or that may be notified 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 Employer indemnified in case any action is taken against the Employer 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 Employer 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/Employer shall have the right to deduct any money due to the Contractor including from his performance security/retention money. The Employer/Engineer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer. The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer 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 during 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 the prescribed minimum years (say, five years) of service or more or on death the rate of prescribed minimum days" (say, 15 days) wages for every completed year of service. The Act is applicable to all establishments employing the prescribed minimum number (say, 10) or more employees.
- (c) **Employees P.F. and Miscellaneous Provision Act 1952:** The Act Provides for monthly contributions by the Employer plus workers at the rate prescribed (say, 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 Employer by Law. The principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ prescribed minimum (say 20) or more contract labour.
- (f) **Minimum Wages Act 1948:** - The Employer is 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. Constructions of buildings, roads, runways are scheduled employment.
- (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 provides 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 establishment employing prescribed minimum (say, 20) or more workmen. The Act provides for payments of annual bonus within the prescribed range of percentage of wages to employees drawing up to the prescribed amount of wages, calculated in the prescribed manner. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. States may have

different number of employment size.

**j) Industrial Disputes 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 prescribed minimum (say, 100, or 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get these certified by the designated Authority.

**l) Trade Unions Act 1926:** - The Act lays down the procedure for registration of trade unions of workmen and Employers. 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 regulations 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 prescribed minimum (say, five) 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 up to 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 the prescribed minimum (say, 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 Employer 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 workplace etc. The Employer 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 the prescribed minimum (say, 10) persons or more with aid of power or another prescribed minimum (say, 20) or more persons without the aid of power engaged in manufacturing process.

## **59. Drawings and Photographs of the Works**

59.1 The contractor shall do photography/videography of the site firstly before the start of the work, secondly mid-way in the execution of different stages of work and lastly after the completion of the work. No separate payment will be made to the contractor for this.

59.2 The Contractor shall not disclose details of Drawings furnished to him and works on which he is engaged without the prior approval of the Engineer in writing. No photograph of the works or any part thereof or plant employed thereon, except those permitted under clause 59.1, shall be taken or permitted to be taken by the Contractor or by any of his employees or any employees of his sub-Contractors without the prior approval of the Engineer in writing. No photographs/ Videography shall be published or otherwise circulated without the approval of the Engineer in writing.

## **60. The Apprenticeship Act 1961**

**60.1** The Contractor shall duly comply with the provisions of the Apprenticeship Act 1961 (III of 1961), the rules made there under and the orders that may be issued from time to time under the said Act and the said Rules and on his failure or neglect to do so he shall be subject to all liabilities and penalties provided by the said Act and said Rules.

**CONTRACT DATA TO GENERAL CONDITIONS OF CONTRACT**

Sl No.	Items marked "N/A" do not apply in this Contract.	Clause Reference
	<p>The Employer is :-            Managing Director, NHIDCL            Address: 3<sup>rd</sup> Floor, PTI Building 4 - Parliament Street,            New Delhi</p> <p>Name of Authorized Representative:-  <b>Executive Director (Projects)</b>  <b>National Highways &amp; Infrastructure Development Corporation Limited</b>            Regional Office-Aizawl, 3<sup>rd</sup> Floor, T-86, Tuikhuahtlang,            Aizawl, Mizoram-796001  <b>Email:ro-mizoram@nhidcl.com</b></p>	
2	The Engineer is:	<b>General Manager (Projects), Lawngtlai NHIDCL</b> <b>PMU-</b>
3	The Intended Completion Date for work under package will be 4 months based on value of Work Order (s) issued.	[ Cl 1.1, 13.1 & 38]
4	The location of the site is given under Bid Notice (Section I)	[Cl.1.1]
5	The Start Date shall be within 7 days after the date of issue of the Notice to proceed with the work.	[Cl.1.1]
6	The name and identification number of the Contract is given in the Table given in Bid Notice (Section I)	[Cl.1.1]
	(a) The law which applies to the contract is the law of Union of India	[Cl 3.1]
	(b) The language of the Contract document is English	[Cl 3.1]
8	The Technical Personnel are as given in the ITB (Section II)	[Cl. 7.1]
9	<p>Amount for insurance are:</p> <p>a) Rupees equivalent to Contract price.            b) Rupees equivalent to 5% of Contract price.            c) Rupees Equivalent to 5% of contract price.            d) Rupees 20 lakhs for multiple incidents.            e) Insurance policies should be as per work order basis</p>	[Cl. 11.1]
	(a) Amount of liquidated damages for delay in completion of - 0.05 percent of the value of work order rounded off to the nearest thousand, per day with the minimum of Rs. 1000/- per day.	[Cl. 34.1]

	(b) Maximum limit of liquidated damages for delay in completion of work - 10 per cent of the value of each work order rounded off to the nearest thousand.	[Cl. 34.1]
11	The following documents also form part of the contract: Addendum/Corrigendum/any clarification to the Bid documents.	[Cl. 2.2]
12	Fees and type of reimbursable expenses to be paid to the Dispute Review Expert (To be Intimated later)	[Cl. 20.2]
13	Appointing Authority for the Dispute Review Expert - Secretary General of Indian Roads Congress, New Delhi.	[Cl. 21.1]
14	Appointing Authority for the Arbitrator/Presiding Arbitrator - Chairman of the Executive Committee of Indian Road Congress, New Delhi	[Cl. 47.1]

## (SECTION - VI)

### Scope of Work

NHIDCL aims at providing permanent solution at the sinking portion @chainage 289.360

1. **Brief of issue:-**A 2 X 2 culvert lies at the chainage 289+360 in the Lawngtlai Town. Due to sinking of the location for a length of 40 m abutting the culvert, the existing culvert has been completely damaged and approaches of the culverts have been settled considerably.

#### 2. Objective :

The main objective of the project is rehabilitation and restoration of sinking portion of NH-54 from Km 289+340 to Km 289+420 at Lawngtlai.

It is imperative to rehabilitation and restoration of sinking stretch of existing road by widening, improving curves and bends for obtaining proper sight distance. There is no alternate route available for the diversion of traffic .Hence road has to be widening on valley sides by providing Gabion RE Wall and diverting the traffic on this widened area. The original /existing width of road has to reconstruct with proper consolidation of soil underneath the pavement.

#### 3. Background:

The road selected for NH-54 is the oldest National Highway within Mizoram and runs through the State from North to South. This National Highway is the North - South Corridor of Mizoram, covering a maximum possible number of villages and towns. It passes through six District Headquarters within the State of Mizoram. NH-54 was taken over by Mizoram PWD from Border Roads Organization during Jan 2010 after extensive damages occurred to the road formation due to floods of 2008-2009. Mizoram PWD taken up rehabilitation and restoration work under Annual plan NH maintenance work in 2010-2011.

#### 4. Geology of Mizoram

The preliminary geological survey of the locations of all the structures on the ground was carried out after site visits. The site-specific geological data were collected and utilized in the design of various component of the project. The survey of the nearby area was also carried out to co-relate the geology of the project area.

The engineering geological investigations are the most important basis for assuming the design considerations for widening and slope protection work in hill road. Geological investigation involved-

- Topo Map and Satellite Imaginary studies
- Digitization of Topographic Maps
- Land Use, Drainage and Landslides studies with the help of GIS work

- **Geological Survey**

- Geological mapping for overall project area with the help of handy GPS, DGPS, Total Station and Geological Instruments.

Immature geology coupled with heavy rainfall is the main causes of slope instability resulting in landslides in the hilly regions of north-east India including Mizoram. The occurrence of landslide is more frequent within the township where anthropogenic activities are taking place. The present study has been taken up to study the landslide prone areas of Lawngtlai town using high resolution satellite data.

Landslide is the most frequently occurring geo-environmental hazard in the hilly Himalayan regions. It can cause damage in the road sector and residential areas. It becomes a disaster causing destruction of lives and properties when it occurs within the township or other human habitations. Geologically, Mizoram is a part of Tripura-Mizoram miogeosyncline, which in turn belongs to the broad Assam-Arakan geosynclinal basin. The area is represented by a repetitive succession of argillaceous and arenaceous sediments of Palaeogene-Neogene age. The general trend of the rock formations is N-S with dips varying from 20° to 50° either towards east or west. The sediments of Mizoram are divided into Barail, Surma and Tipam Groups.

## **5. Slope**

Slope plays an important role amongst the causative landslide factors as it represents the physical terrain conditions. Landslides are more prevalent in the steep slope areas than in moderate and low slope areas. The western aspects of the middle and the eastern parts, along Vengpui locality of the study area are characterized by very steep slope. Steep hillside slopes are also noticed in few places. The southern parts of the study area, around College Veng, on the other hand, are characterized by low and gentle slope. The slopes of the area are represented in terms of degrees, and are divided into five slope facets, viz., 0-15, 15-25, 25-30, 30-35, 35-40, 40-45, 45-60 and above 60 degrees. Weightage values are assigned in accordance with the steepness of the slope, where steeper slope has higher weightage value than gentler slope.

## **6. Geomorphology**

The study area comprises of highly dissected, undulating and moderately sloping structural hill ranges. Some of the hillocks are highly dissected with sharp ridges and steep slopes, whereas some areas are characterized by gentle and low dissected hillocks. This indicates that the topography is immature. A few flat lands are mostly confined along the streams and between the spurs. Geomorphologically, the whole area is divisible into Medium Structural Hill, Low Structural Hill and Valley Fill. High elevated areas are more susceptible to landslide than low elevated areas.

## **7. Lithology**

The study area is composed of rocks of Middle Bhuban and Upper Bhuban Formation of Surma Group. It exposes limited rock types, viz. sandstones, shales and siltstones, and their intermixtures in varying proportions. The Middle Bhuban Formation is conformably underlain by the Upper Bhuban Formation with gradational and transitional contact. The Middle Bhuban Formation is mainly

argillaceous with shale as the dominant rock type. It consists of assemblage of shale, siltstone, sandy shale and clayey bands with subordinate amount of sandstones. The Upper Bhuban Formation is mainly arenaceous with sandstone as the dominant rock type. It comprises of sandstone with subordinate amount of shale, siltstone with occasional clay bands. Six lithounits have been established for the study area purely based on the exposed rock types of the area. These are named as sandstone, shale-sandstone, siltstone-shale, shale-siltstone, crumpled shale and gravel-silt unit. It may be noted that the demarcation and correlation of the two formations is extremely difficult owing to more or less uniform lithological characters and absence of marker horizons and index fossils.

## **8. Geological Structure**

Structurally, the beds generally trend N-S to roughly NNW-SSE and dip on either side from 20° to 65° with local variations. Besides bedding planes, two to three sets of joints have been noted. The lineaments are well distributed within the study area, and are oriented in various directions. Few faults of small magnitude have been identified which are mostly transverse/oblique in disposition.

This zone is highly unstable, and is at a constant threat of landslides, especially during and after heavy rain. This zone has steep slopes with loose, unconsolidated materials, and also include areas where active landslides had occurred. This zone is dispersed in few places as found in Council Veng , eastern side of Sobji Bazar and below LDFA Playground along Pakhawngmawng stream. It is also found scattered in small patches along Chanmari Veng, Bungtlang road and along AOC stream below AOC Filling Station. The Lower part of Lawngtlai III locality along Khurpui stream and part of Thingkah locality also falls within this zone. It also include areas where unplanned quarrying, road cutting and other human activities are active. In addition, it is also found along the streams where toe-erosional activities are constantly taking place and also in other parts of the town area in small pockets. The vegetation in this zone is generally scarce. The rocks exposed are characterized by numerous bedding and joint planes which facilitate the chance of sliding down along the slope.



## 9. Causes of landslide formation

There are many underlying reasons for development of the landslide:-

- Geological causes :-the rock masses themselves, in the manner and conditions of their formation and basic physical - mechanical properties that reflect their ability to react to all external destruction agents faster or slower
- Geomorphological causes :-Related to morphogenetic development of the slope, i.e. shaping of the present relief under the influence of exogeneous geological factors, primarily cutting-in of the present drainage network: gullies, ravines, intermittent and permanent water streams
- Physical causes :-Related to climatic regime, intense precipitation, thawing of snow cover, effects of surface and underground water and frost-related dynamic processes during freezing and unfreezing of water in the soil saturated with water
- Technogenic causes :- uncontrolled ditching, cutting and excessive loading of slopes, construction of structures within the landslide, uncontrolled wastewater discharging on the slope and water from damaged sewerage networks and waterworks, septic tanks, inappropriate construction of foundations in soil for structures, and dynamic load of roads

## 10 Primary reasons for Sinking From Km 289+340 to 289+420

- Due seepage of water from surface runoff
- Due to lack of proper drainage system
- Due lack of proper compaction and uncontrolled ditching

## 11 Proposed Counter measures Scheme

- Construction of Toe wall at bottom
- Construction of Gabion Facia RE Wall
- Removal of unstable boulders and fragile parts of slope.
- Construction of embankment with biaxial geogrid for strengthening soil at sinking portion
- Laying perforated pipe for sub surface drainage
- Construction of Chimney drainage system to break the seepage line
- Construction of RCC Box culvert for channeling the nallah water
- Construction of surface drain
- Vegetation Erosion control blanket.
- Vetiver grass plantation of valley side slope.

## 12. Formation width and Carriageway:

The existing road is only Single lane standard, with a formation width of 6.25 metres and a carriage way as 3.75 metres.

## 13. Cost Estimate framed by NHIDCL.

Sl No	Item Description	Quantity	Units	Rates adopted by NHIDCL in costing	Total amount without GST
1	Supply and placing of gabion facia with integrated tail length 2m as secondary reinforcement for Reinforced soil system, made of Mechanically Woven Double Twisted Hexagonal Shaped Wire Mesh per IS 16014:2012 and MoRTH (Fifth Revision) Clause 3100, Mesh Type 10x12, Zn+10%Al alloy +PVC coated Mesh Wire dia. 2.7/3.7mm (ID/OD), mechanically edged / selvedged, with partitions at 1m interval, tying with lacing wire of dia 2.2/3.2 mm (ID/OD).	616	Cum	4931	3037496
2	Geogrid or Paralink (Uniaxle direction) of 200KN/m or GG200 (Breadth of Each roll=4.5m) , vertical spacing 1.0m Sq.m (10% extra Geogrid is added for Curvature & Overlap)	3200	Sq.m	412	1318400
3	Geogrid 40 kN/m (Biaxial Direction) (Breadth of each roll =3.95m) ,vertical spacing 0.25m for strengthing of soil at sinking portion	896	Sq.m	239	214144
4	Non woven Geotextile behind the Gabion 150 GSM 3 Sq.m Geotextile is required for each box	840	Sq.m	44	36960

5	Non woven Geotextile behind Chimney drain 150 GSM both side i.e retained side & structural fill side	1280	Sq.m	44	56320
6	110mm Dia, CI-2 (4.00 Kg. Pres.) 6 Mtr. Long UPVC Pipe (Perforated 8-10 Perforated @ 75mm Triangular Grid) (As per IS Specification No. 4985/2000)	360	Rm	543	195598.8
7	Non woven Geotextile for wrap around the pipe 150 GSM 3.9 Sq.m per pipe of 6 m length, No of pipe i) Transverse direction@5 m c/c = ( 80/5+1) = 17 nos. & longitudinal pipe = 80m = 14 nos. @6m length Total Pipe of 6m length = (17+14) = 31 nos.	120.9	Sq.m	110	13299
8	Providing and laying of Filter media for Chimney drain with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and technical specification.	384	Cum	2797	1074048
9	Embankment Construction with Material Obtained from Borrow Pits (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) (Within a lead of 5Km.)	9280	Cum	240	2227200
10	Excavation in Hilly Areas in Ordinary Soil By Mechanical Means (Excavation in ordinary soil in hilly area by mechanical means including cutting and trimming of side slopes and disposing of excavated earth with all lifts and lead .)				0
10A	Case-I : Disposal of cut material with all lifts and lead upto 1000 metres.	8988	Cum	212	1905456
11	Construction of M20 grade lined surface drains specified lines, grades, levels and dimensions as per drawing or technical specification section 309 and 1700	300	Rm	2339	701811
12	Gabian Structure for Retaining Earth (Providing and construction of a gabain structure for retaining earth with segments of wire crates of size 7 m x 3 m x 0.6 m each divided into 1.5 m compartments by cross netting, made from 4 mm galvanised steel wire @ 32 kg per 10sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double				0

	twist, mesh size not exceeding 100 x 100 mm, filled with boulders with least dimension of 200 mm, all loose ends to be tied with 4 mm galvanised steel wire				
12A	Top Layer	80	Cum		0
12B	Middle Layer	80	Cum		0
12C	Bottom Layer	160	Cum		0
12D	Total	320	Cum	4722	1511040
13	<b>Vetiver grass</b> (Preparation of seed bed on previously laid top soil, furnishing and placing of seeds, fertilizer, including watering for 3 months all as per clause 308.)	1064	Sqm	256	272384
14	Supply and Installation of Non woven Coir Erosion Control Blanket for slope surface erosion protection including labours, tools and tackels complete as per the Technical specification mentioned in the tender document.	1064	Sqm	486	516646.48
15	Dismantling of Structures (Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres)				0
15 A	Dismantling Stone Masonry				0
15 B	Rubble stone masonry in cement mortar.	570	Cum	632	360240
15 C	Removing all type of hume pipes and stacking within a lead of 1000 metres including earthwork and dismantling of masonry works.				0
	Above 900 mm	7.5	Rm	846	6345
16	Construction of RCC Box Culvert Type 1	1		2269239	2269239
	Total				15716627.28
	Deduction of 6% to make the estimate tax free exclusive of VAT, Sales tax etc				942997.6368
	<b>Net Civil Cost with GST and other taxes</b>				<b>14773629.64</b>

**13 Item Wise work as per the BOQ:** The bidder has to fill in their rates in the BOQ sheet enclosed as the tender is item rate contract.

**SECTION-VII**

**TECHNICAL SPECIFICATIONS**

## TECHNICAL SPECIFICATIONS

(The Clause mentioned below to the relevant items are applicable only) PREAMBLE:

The Technical Specifications contained herein shall be read in conjunction with the other Bidding Documents as specified.

### GENERAL REQUIREMENTS

The Technical Specifications in accordance with which the entire work described hereinafter shall be executed and completed by the Contractor shall comprise of the following:

#### PART – I – GENERAL TECHNICAL SPECIFICATIONS

The General Technical Specifications shall be the “SPECIFICATIONS FOR ROAD AND BRIDGE WORKS” (FIFTH REVISION, April 2013) issued by the Ministry of Road Transport & Highways, Government of India and published by the Indian Roads Congress, hereinafter referred to as MORT&H Specifications.

#### PART – II – SUPPLEMENTARY TECHNICAL SPECIFICATIONS

The Supplementary Technical Specifications shall comprise of various Amendments/Modifications/Additions to the „SPECIFICATIONS FOR ROAD AND BRIDGE WORKS” referred to in PART-I above and Additional Specifications for particular item of works not already covered in Part - I.

A particular clause or a part thereof in “SPECIFICATIONS FOR ROAD AND BRIDGE WORKS” (FIFTH REVISION, April 2013), referred in Part-I above, where Amended/Modified/Added upon and incorporated in Part-II, referred to above, the Amendment/ Modification/ Addition supersedes the relevant clause or part of the clause.

When an Amended/Modified/Added Clause supersedes a Clause or part thereof in the said Specifications, then any reference to the superseded clause shall be deemed to refer to the Amended/Modified/Added Clause or part thereof.

In so far Amended/Modified/Added Clause may come in conflict or be inconsistent with any of the provisions of the MOST Specifications under reference, the Amended/Modified/Added clause and the additional specifications shall always prevail.

522 In the absence of any definite provisions on any particular issue in the aforesaid Specifications, reference may be made to the latest codes and specifications of IRC and BIS in that order, Where even these are silent, the construction and completion of the works shall conform to sound engineering practice as approved by the Engineer and, in case of any dispute arising out of the interpretation of the above, the decision of the Engineer shall be final and binding on the Contractor.

PART - II

**AMENDMENTS/MODIFICATIONS/ADDITIONS TO EXISTING CLAUSES OF GENERAL TECHNICAL SPECIFICATIONS (PART- I).**

**SECTION 100 - GENERAL**

Clause 102 Definitions:

The following abbreviation shall be added in this Clause: "MOST"  
- Ministry of Surface Transport, Govt. of India (Now Ministry of Road Transport and Highways)  
"NHIDCL" - National Highways & Infrastructure Development Corporation Ltd.

Clause 106 Construction Equipment:

Clause 106 (a) Add the following sentence. "The trial run is to be carried out laying the relevant pavement material and it is not to be part of the permanent works. The trial is to be carried out on prior approval of equipment by Engineer-in-Charge."

Add Sr. No. (g)

"The Contractor shall furnish to the engineer the detailed technical literature and other relevant documents regarding the performance of plant/equipment for approval prior to its purchase or mobilization on site."

Clause 107 Contract Drawings:

Clause 107.3 Deleted this Sub-Clause entirely. Clause 108.4 The clause shall be read as follows:

"Identification of quarry sites and borrow areas shall be the responsibility of the Contractor. Materials procured from quarry sites and borrow areas identified by the Contractor and to be used in Works must comply with the requirements of quality as stipulated in the Technical Specifications for particular item of work".

Clause 109 Setting Out:

Clause 109.10 Add new sub-clause

"Before carrying out any survey work the Contractor shall submit to the Engineer for the approval a programme and methodology for the calibration of all optical and electronic survey equipment to be used on site during construction of the works. The Contractor will maintain calibration records for all such equipment in his site office, available at all times for inspection by the Engineer.

Clause 110            Public Utilities:

Clause 110.1        Revise the clause as under:

Existing services like water pipes, sewers, oil pipelines, cables, gas ducts etc. owned by various authorities including Public Undertaking and Local Authorities shall be checked and located by the Contractor prior to commencement of work.

Clause 110.2        Revise the clause as under:

The Contractor's programme must take into account the period of notice and duration of diversionary works of each body as existing at site. The Contractor must also allow for any effect of these services and alterations upon the Works and for arranging regular meetings with the various bodies at the commencement of the Contract and throughout the period of the Works in order to maintain the required co-ordination. During the period of the Works, the contractor shall have no objection if the public utility bodies and their decisions in the execution of their proposal in terms of programme and construction. Provided that, in the opinion of the Engineer, the Contractor has received reasonable notice thereof before the relevant alterations are put in hand.

Clause 111            Precautions for Safeguarding the Environment:

Clause 111.1        General

Add the following after the first paragraph:

The Contractor shall preserve existing trees, plants and other vegetation that are to remain within or adjacent to the works and shall use every precaution necessary to prevent damage or injury thereto. On completion of the Works, all areas disturbed by the Contractor's construction activities shall be restored in their original condition, or as may be acceptable to the Engineer. The cost of this work shall be deemed to be included in the rates generally.

Clause 111.4        Add the following sentence:

"The Contractor is to ensure that there is good drainage at all construction areas, to avoid creation of stagnant water bodies especially in urban/industrial areas, including water in old water bodies."

Clause 111.5        Pollution from Hot Mix Plants and Batching Plants

Add the following paragraph at the end of this Sub-clause.

The H.M.P. should be sited at least 500m away from the nearest habitation. The H.M.P. shall be fitted with a dust extraction unit in order that the exhaust gases comply with the requirements of the relevant current emission control legislation. "All operations at plants shall be undertaken in accordance with all current rules and regulations protecting the

environment.”

Clause 111.6 Substances Hazardous to Health

Add the following after the first paragraph as follows:

“The use of any herbicide or other toxic chemical shall be strictly in accordance with the manufacturer’s instructions. The Engineer shall be given at least 6 working days notice of the proposed use of any herbicide or toxic chemical.

A register of all herbicides and other toxic chemicals delivered to the site, shall be kept and maintained up to date by the contractor. The register shall include a name physical properties and characteristics, chemical ingredients, health and safety hazard information, safe handling and storage procedures, and emergency and first aid procedures for the product.”

Clause 111.9 Add the following sentence at the end of the para.

Vehicles delivering materials to the site shall be covered to avoid spillage of materials on public roads.

Clause 111.12 After the last sentence add the following :

“The costs of compliance with Clause 111 shall be deemed to be included in the rates for items included in the Bill of Quantities.”

Refer to Clause 114.2 (xv) of MOST Specification.

Clause 111.13 Add new Sub-Clause:

“The Discharge Standards promulgated under the Environment Protection Act, 1986 shall be adhered to strictly. All waste arising from the project is to be disposed of in a manner which is acceptable to the State Pollution Control Board and the Engineer.”

All vehicles and machinery employed in the execution of the works shall be regularly maintained to ensure that pollutant emission levels comply with the relevant requirements of current pollution control legislation. During routine servicing operations, the effectiveness of exhaust silencers must be checked and if found to be defective must be replaced. Notwithstanding this requirement, noise levels from any item of plant must comply with the relevant legislation for levels of sound emission. Non compliant plant is to be removed from site.

Vehicle maintenance and refuelling shall be carried out in such a fashion that spillage of fuels and lubricants do not contaminate the ground or nearby watercourse. An “oil interceptor” shall be provided for wash down and refuelling areas. Fuel storage shall in proper bounded areas. All spilt and collected petroleum products shall be disposed of in accordance with the relevant legislation.

Clause 111.14 Add the following New Sub-Clause:

All temporary accommodation must be constructed and maintained in such a fashion that uncontaminated water is available for drinking, cooking and washing. The sewage system for the camp must be properly designed, built and operated so that no health hazard occurs and no pollution to the air, ground or adjacent watercourses take place compliance with relevant legislation must be strictly adhered to Garbage bins must be provided in the camp and regularly emptied and the garbage disposed of in a hygienic manner. Construction camps are to be sited away from vulnerable people and adequate health care is to be provided for the work force.

Clause 111.15 Add the following New Sub-Clause:

All works are to be carried out in such a fashion that the damage or disruption to the flora and fauna is reduced to a minimum wherever possible. Trees or shrubs will only be felled or removed that impinge directly on the permanent works or necessary temporary works, after seeking approval of the Engineer.

Clause 112 Arrangement For Traffic During Construction:

Clause 112.1 General

Delete the last sentence and add the following:

“The Contractor shall submit, for the Engineer’s approval, a Traffic Control Plan 5 days prior to commencement of the temporary / permanent works.”

The plan shall include:

- i. Typical drawings for temporary diversions in accordance with Clause 112.3
- ii. Typical details of arrangements for construction under traffic including details of traffic arrangement after the cessation of work each day. Special consideration shall be given in the preparation of the Traffic Control Plan to the safety of pedestrians and workers at night. Temporary diversions will be constructed only with the approval of the Engineer.

Clause 112.2 Passage of Traffic along a part of the Existing Carriage way under improvement:

Delete this clause replace as follows:

“For strengthening of existing carriage way, where part of the existing carriage way is proposed to be used for passage of traffic & - shoulder are not available then, treated shoulders shall be provided on the side on which work is not in progress. If the existing shoulder width less than 1.5m the same shall be extended up to 1.5m for earth work duly

compacted. The top 15.0cm or as directed by the engineer including extended shoulder of 1.5m width shall be filled up by granular sub base material duly bounded with binding material and compacted. The sub base material shall conform to MOST specification Clause 401, the work of excavation and filling of granular sub-base material so carried out shall be paid under relevant items of bill of quantities. The contractor shall maintain the bypass/diversion during the period of construction by way of watering, compacting, and making good loss of sub-base material after filling up of the rutting/depression etc. by additional quantity of granular sub base material. The items operations like maintenance, making good the loss of material, watering, compacting, levelling and dressing along with additional quantity of sub-base material shall be considered as incidental to the work and no extra payment will be ade for these operations. The continuous length in which such works shall be carried out would be within a range of 200 to 500m at a place.

#### Clause 112.6                    Measurements for Payments and Rate

Add “and no extra payment will be made except the treatment of shoulders for earth work and granular sub-base as per Clause 112.2 above.” At the end of first paragraph.

#### Clause 112.7                    Side Roads and Property Accesses

Add new sub Clause:

“At all times, the Contractor shall provide safe and convenient passage for vehicles pedestrians and livestock to and from side roads and property accesses connecting to the roadway. Work which affects the use of side roads and existing accesses shall not be undertaken without providing adequate prior provisions to the satisfaction of the Engineer.”

#### Clause 112.8                    Plant and Equipment Add new sub Clause:

“During the day, plant and equipment working in a position adjacent to traffic and having a projection beyond the normal width of the item, for example, a grader blade shall have a fluorescent red marker attached to the outer end of the projection. During poor light conditions an additional traffic controller with an illuminated red marker shall direct traffic around such plant and equipment. At night, all plant items and similar obstructions shall be removed from the normal path of vehicles, to provide a lateral clearance of at least 6m where practicable, with a minimum clearance of 1.2m. Plant and equipment, within 6m of the normal path of vehicles, shall be lit by not less than two yellow steady lamps suspended vertically from the point of the obstruction nearest to a traffic lane, and one yellow steady lamps at each end of the obstruction on the side farthest away from the traffic lane.”

#### Clause 113 General Rules For the Measurement of Works for Payment:

Clause 113.2                    Measurements for Lead of Materials

Delete this Clause and replace with:

“The rates in the Bill of Quantities are deemed to include the costs of haulage from source of supply to the site for all materials required for the Works.”

Clause 114    Scope of rates for different items of work:

Add to Clause 114.2 (xvii). Cost of all provisions for executing the work safely including all protective clothing, barriers, earplugs etc.

Clause 115                    Methodology and Sequence of Work:

Substitute “28 days” for “30 days” in the 2<sup>nd</sup> line.

Clause 121                    Field Laboratory:

Clause 121.1                Scope

Delete this Clause and replace with:

“The work under this Clause covers the provision and maintenance of a fully equipped laboratory.” The equipment in the laboratory shall be as decided by Engineer, keeping in view of item of works prescribed in BOQ.

Clause 121.2                Description

Delete this Clause and replace with:

“The Contractor shall construct a fully furnished and equipped field laboratory to the satisfaction of the Engineer. The laboratory will be located at a site approved by the Engineer and must be of adequate size to perform all the tests required under the contract including sufficient light, electric and water supply. The Contractor shall provide working drawings incorporating all the services based on the information given in the changes for the approval of the Engineer prior to commencement of construction. An office must be provided in the laboratory for the exclusive use of the Engineer’s, Materials Engineer, adequate toilet and washing facilities must be provided. The contractor shall provide the field laboratory within one month from the date of the commencement of the work. Prior to this, contractor must make suitable alternative arrangements for the testing of materials, which are acceptable to the Engineer.

Clause 121.3                Laboratory Equipment shall be provided as prescribed by the Engineer relevant to items of work in BOQ.

Clause 121.3.2            For soils and aggregates

Delete item no. (xi) and (xii)

Clause 121.3.5 Add New Sub-Clause:

For Control of Profile and Surface

Evenness

- |      |                               |        |
|------|-------------------------------|--------|
| i)   | Theodolite                    | 2 sets |
| ii)  | Precision automatic level     | 2 sets |
| iii) | Precision staff               | 4 sets |
| iv)  | Camber templates 2 lane       |        |
|      | a) Crown type cross-section   | 4 sets |
|      | b) Straight run cross-section | 4 sets |

Steel Tape

- |    |           |        |
|----|-----------|--------|
| a) | 3 m long  | 4 sets |
| b) | 5 m long  | 4 sets |
| c) | 10 m long | 4 sets |
| d) | 20 m long | 4 sets |
| e) | 30 m long | 4 sets |

Clause 121.3.6 Add New Sub-Clause:

In addition clause 121.3 any equipment which is not mentioned in this clause but which is necessary for the work for complying with the provisions of the contract and Section 900 of MOST specifications or as required by the engineer shall be provided by the contractor. No extra payment shall be made to the contractor and it will be considered as incidental to the work.

Clause 121.6 Delete this Sub-Clause.

Clause 121.7 Substitute this Sub-Clause by the following:

“There is no separate item in the Bill of Quantities for establishing and maintenance of the laboratory and supply, erection maintenance of equipment and also running cost of testing. The rates quoted by the Contractor shall be deemed to cover the cost of all these items.”

Clause 126: Supply of Video Cassettes Description

The work consists of taking video films of important activities of the work as directed by the Engineer during the currency of the project and editing them and converting them to a CD (master CD+ 4 copies) film of playing time not less than 60 minutes and upto 180 minutes as directed by the Engineer. It shall contain narration of the activities in English by competent

narrator. The editing of the film and the script for narration shall be as approved by the Engineer. The CD shall be acceptable quality and the film shall be capable of producing colour pictures.

Measurement for Payment & Rates

No separate payment shall be made and the work shall be treated as incidental.

SECTION 300 – EARTHWORK EROSION CONTROL AND DRAINAGE

**Clause 301            Excavation for Roadway and Drains**

**Clause 301.3.3      Excavation - General**

Delete the last two sentences of last paragraph. And add,  
“The earthwork shall be carried out as per the sequences  
stated in this contract or as directed by engineer-in-charge”.

Clause 301.3.12    Back-filling

After the last sentence add the following:

“Density requirements for back filling shall be in accordance  
with Table 300-2” of MOST.

Clause 301.9            Rates

Clause 301.9.2        This Clause is replaced as follows:

“The contract unit rate for loosening and re-compacting at sub-  
grade level shall include full compensation for loosening to the  
specified depth, removing the loosened soil outside the roadway  
wherever considered necessary, rolling the surface below,  
breaking the clods, spreading the excavated soil layers, watering  
where necessary and compacting to the requirements.”

Clause 304            Excavation for Structures:

Clause 304.3.7        Back filling

Add second paragraph as under:

“The working space between the structure and the excavation shall be cleared out completely of all construction materials and loose earth that fallen into the excavation during construction. The excavation shall be pumped dry and all saturated and soft earth removed prior to being inspected by the Engineer who will give his permission for the placement of any fill material, provided the space has been properly prepared. Compaction will only be carried out with mechanical compactors of sufficient capacity to ensure correct compaction of the back fill material. The fill is to be brought up in layers not greater than 150 mm. Mass filling of structures with machines will not be permitted and contractors should make allowance in their rates for the methodology described above.”

- Clause 305 Embankment Construction:
- Clause 305.2 Material and General Requirements
- Clause 305.2.1 Physical Requirements
- Clause 305.2.1.2 Amend the first sentence of this Clause as under:
- “Highly expansive soils such as Ch, MH or OH exhibiting marked swell and shrinkage properties („free swelling index” exceeding 50 per cent when tested as per IS 2720 - Part 40) shall not be used in construction of sub grade and embankment.”
- Clause 305.2.1.4 Delete the second and third sentence of Clause 305.2.1.4, i.e., “However, the Engineer may.....Compacted layer thickness.”
- Clause 305.2.2.2 Borrow Materials
- Paragraph 1 of this clause shall read as under:
- “No borrow area shall be made available by the Employer for this work. The arrangement for the source of supply of the material for embankment and sub grade as well as compliance to the different environmental requirements in respect of excavation and borrow areas as stipulated, from time to time, by the Ministry of Environment and Forest, Government of India and the local bodies, as applicable shall be the sole responsibility of the Contractor.”
- Paragraph 8 of this Clause given below Table 300-2 shall read as under:
- “The contractor shall at least 7 working days before commencement of compaction submit the following to the Engineer for approval:
- i) The Values of maximum dry density and optimum moisture content obtained in accordance with IS 2720 (Part 8) for each fill material he intends to use.
  - ii) The graphs showing values of density against moisture content from which each of the values in (i) above of the maximum dry density and optimum moisture content were determined.
  - iii) The dry density-moisture content-CBR relationship for each of the fill materials he intends to use in the sub grade.”
- Clause 305.3 Construction Operations
- Clause 305.3.4 Compacting ground supporting embankment/subgrade
- Delete “where necessary” in the first sentence of the first paragraph.

- Clause 305.3.6      Compaction  
The second paragraph of this Clause shall read as under:  
  
“Only vibratory rollers of not less than 8 - 10 ton static weight with plain or pad foot drum shall be used for compaction.”
- Clause 305.4      Construction of Embankment and sub-grade under special condition.
- Clause 305.4.1      Add new para after para 1 as under:  
  
“The earthwork for widening the existing road embankment and shoulders shall be carried out in layers duly compacted. On completion of earth work to the required height the triangular portion on the sloping face of the layers shall be cut in such a manner that the specified slope is achieved. This operation is incidental to work and no extra payment shall be made for this.”
- Clause 305.4.7      Earthwork for high Embankment  
  
Substitute the first paragraph of this clause as under:  
  
“In the case of high embankments, the Contractor shall use the material from the approved borrow area.”  
  
Soil Erosion and Sedimentation Control
- Clause 306.4      Measurement for Payment  
  
Substitute the Clause 306.4 as follows:  
  
“All temporary sedimentation and pollution control works shall be deemed as incidental to the earthwork and other items of work and as such no separate payment shall be made for the same.”
- Clause 306.5      Rate  
  
This Clause is deleted.
- Clause 307      Turfing with sods.
- Clause 307.5      Add “(iii) application of top soil” after (ii). Delete “the contract unit rate for application of top soil shall be as per clause 301.9.5”.
- Clause 309      Surface/Sub-Surface Drains

Clause 309.2 Surface Drains

Add at the end of third paragraph:

Metal grates for sumps on concrete lined surface drains shall be heavy duty (trafficable by commercial vehicle) proprietary products with gaps between bars no greater than 26mm. The Contractor shall submit proposals for grating to the Engineer for approval before commencing construction of the sumps.”

Clause 309.4 Measurement for Payment

Delete the first sentence and replace with:

“Surface drains not lined shall be included in the items for excavation for the roadway in accordance with Clause - 301.8.”

Clause 309.5 Rates

Add at the end of this clause as under:

“The rate for concrete lined drains shall include bedding concrete and jointing. The rate for lined surface drains shall include inlet sumps and metal grates where specified.”

Add Clause 314 as under:

Clause 314 Leveling and Dressing over area:

Clause 314.1 Scope

The work shall consist of excavation, removal, filling and satisfactory disposal of all materials necessary for the area to be leveled and dressed in line, grades as directed by the Engineer. It shall include cutting and filling the ground in all type of soil where variation of existing ground level is + 30 cm or less. It will also include the grubbing of the existing rank vegetation and clearance of undergrowth completely.

Clause 314.2 Construction Operation

The engineer shall identify the area where leveling and dressing is to be carried out. The clearing and grubbing of rank vegetation and undergrowth shall be carried out as per clause 201.1. If the stagnant water is existing on the side, the same shall be pumped / bailed out. The area shall be kept dry throughout the operation of leveling and dressing. The leveling and dressing shall be carried out by excavating the high area

and filling the low area with the excavated material in proper slope. This operation will be carried out manually/mechanically as per site conditions.

Clause 314.3      Measurements

The measurement shall be made for the area to be leveled and dressed in Sq.m.

Clause 314.4      Rates

The contract unit rates for the items for leveling and dressing shall be payment in full for carrying out the required operations including full compensation for:

1. Cost of all labour, materials, tool, equipment and incidentals to complete the work.
2. Clearing and grubbing the rank vegetation and undergrowth and their disposal within 1000m.
3. Pumping and bailing out of water and keeping the area dry during construction.
4. In all type of soils and saturated earth.

SECTION 400 - SUB-BASES, BASES (NON-BITUMINOUS) AND SHOULDERS:

Clause 401.4.1      Substitute “Smooth wheeled roller” by “Vibratory Roller” or as approved by Engineer-In-charge.

Clause 401.3.2      Spreading and Compacting

The following shall be added to Paragraph 1:

“The thickness of the loose layers shall be so regulated that the maximum thickness of the layer after compaction does not exceed 150 mm.”

The fifth paragraph of this Clause shall be as under:

“Immediately thereafter, rolling shall start with the help of a vibratory roller of minimum 80 to 100 KN static weight with plain drum or pad foot drum of heavy pneumatic tyre roller of minimum 200 to 300 KN weight having a minimum tyre pressure of 0.7 kN/m<sup>2</sup> or adequate capacity capable of achieving the required compaction. Rolling shall commence at the lower edge and proceed towards the upper edge longitudinally for portions having unidirectional cross fall and super-elevation and shall commence at the edges and proceed towards the crown for portions having cross falls on both sides.”

Clause 401.6 Measurement for payment:

Add paragraph 3 as under:

For carrying out full depth repair and/or reconstruction of road pavement, if the granular sub-base materials laid on the shoulders for diversion of traffic (as per clause 112) is required to be scarified/removed and re-laid after compensating the loss during handling and by movement of traffic on completion of Full depth repair/reconstruction of road pavement, this operation shall be considered incidental to the work of providing granular sub-base and no extra payment shall be made for the same.

Clause 404.2.1 Coarse aggregate:

Amend this clause as under:

Coarse aggregate shall be either crushed or broken stone. The aggregates shall conform to the physical requirements set-forth in Table 400-6. The type and size range of the aggregate shall be specified in the contract or shall be as specified by the Engineer. If the water absorption value of the coarse aggregates is greater than 2 percent, the soundness test shall be carried out on the material delivered to site as per IS:2386 (Part 5)

- Clause 404.2.3      Crushed Slag:  
Delete this Clause
- Clause 404.2.4      Over-burnt (Jhama) brick aggregates:  
Delete this Clause.
- Clause 404.3.5      Rolling:  
Delete in first para “three wheeled ----- rollers 80 to 100 kN  
-----  
capacity or tandem or”

#### SECTION 500 - BASE AND SURFACE COURSES (BITUMINOUS):

- Clause 501.8.2.4    Profile Corrective Course and its application:  
Replace (ii) with  
“The material for bituminous profile corrective course shall be laid independently of all other courses, adopting such construction procedures and using such equipment as may be appropriate to the specified type of material and thickness of the course manually/machine paid as approved by the engineer-in-charge. The method of providing profile corrective course shall be approved by the engineer-in-charge.
- Clause 501.8.3.1    Preparing Existing Granular Surface  
Amend the Clause as under:  
“The surface on which bituminous profile corrective course is to be laid shall be thoroughly swept clean of dust and any other extraneous material using mechanical broom and dust collected removed or blown off using compressed air except in places where technical means cannot reach. A prime coat conforming to Clause 502 shall be applied prior to laying profile corrective course.”
- Clause 501.8.3.4    Laying the Profile Corrective Course.  
Clause 501.8.3.4.1 This clause shall read as under:

“The surface on which profile corrective course is to be laid shall be thoroughly swept clean of dust and any other extraneous material using mechanical broom and dust collected removed or blown off using compressed air except in places where mechanical means cannot reach.”

“After preparing the granular surface as in Clauses 501.8.3.1 and

501.8.3.2, the profile corrective course with materials as per Clause 501.8.2.3/501.8.2.4 shall be laid and compacted to the requirement of particular Specification Clause.”

Clause 502 Prime Coat Over Granular Base :

Clause 502.2.3 The type of bitumen emulsion shall be slow setting. Clause 503 Tack Coat

Clause 503.2.1 The type of bitumen emulsion shall be medium setting. Clause 504 Bituminous Macadam :

Clause 504.2 Materials

Clause 504..2.1 Bitumen:

The penetration grade of bitumen shall be 60/70.

Clause 507 & 509 Bitumen

The penetration grade of bitumen shall be 60/70.

Clause 507.9 For DBM, Clause 508.9 for SDBC and Clause 509.9 for BC

Clause 511 Close/Open- Graded Premix Surfacing : laying should done by paver finisher.

These clauses stand amended to the extent that the rate shall cover the provision of bitumen in the mix as per job mix formula. No variation in the rate for this item will be admissible on account of quantity of bitumen used.

Clause 801

## **801 TRAFFIC SIGNS**

### **GENERAL**

The colour, configuration, size and location of all traffic signs for highways (other than Expressways for which the size of the signs, letters and their placement shall be as specified in the drawings and relevant Specifications or as directed by the Engineer) and for other roads, shall be in accordance with the Code of Practice for Road Signs, IRC:67:2010, or as shown on the drawings. In the absence of any details or for any missing details (for example, chevron signs etc.), the signs shall be provided in accordance with international standards and/or as directed by the Engineer.

Unless otherwise specified, the signs shall be reflectorised as shown on the drawings or as directed by the Engineer. They shall be of retro-reflectorised type and made of micro-prismatic type reflective as per IRC:67:2010.

In general, cautionary and mandatory signs' shall be fabricated through process of screen printing. In regard to informatory signs with inscriptions or cut letters of, coloured retroreflective sheeting comprising unmetallised microprismatic element material as per IRC:67:2010 or durable transparent, coloured overlay film shall be used which must be bonded well on the base sheeting, as directed by the Engineer.

## Materials

The various materials and fabrication of the traffic signs shall conform to the following requirements:

**Concrete :** Concrete shall be of the grade shown on the Contract drawing or otherwise as directed by the Engineer.

**Reinforcing steel:** Reinforcing steel shall conform to the requirement of IS:1786 unless otherwise shown on the drawing.

**Bolts, nuts, washers:** High strength bolts shall conform to IS: 1367 whereas precision bolts, nuts, etc., shall conform to IS:1364.

**Plates and supports:** Plates and support sections for the sign posts shall conform to IS:226 and IS:2062 or any other relevant IS Specifications.

**801.2.5. Substrate ;** Sign panels may be fabricated on aluminium sheet, aluminium composite panel, fibre glass sheeting, or sheet moulding compound. Aluminum sheets used for sign boards shall be of smooth, hard and corrosion resistant aluminium alloy conforming to IS:736-Material designation 24345 or 1900. Aluminium Composite Panel and other materials shall meet the relevant ASTM (D903, E8, E393, E732)/BS/BIS requirements.

Shoulder mounted ground signs with a maximum side dimension not exceeding 600mm shall not be less than 1.5 mm thick with Aluminium and 3 mm thick with Aluminium Composite Material. All other signs shall be at least 2 mm thick with Aluminium and 4 mm thick with Aluminium Composite Material. The thickness of the sheet shall be related to the size of the sign and its support and shall be such that it does not bend or deform under prevailing wind and other loads. All overhead signs made with Aluminium Composite Material shall be minimum 4 mm thick to withstand wind and other loads without deformation.

In respect of sign sizes not covered by IRC:67: 2010 the structural details (thickness, etc.) shall be as per the approved drawings or as directed by the Engineer.

## Traffic Signs having Retro-Reflective Sheeting

**General requirements:** The retro-reflective sheeting used on the sign shall consist of the white or coloured sheeting having a smooth outer-surface which has the property of retro-reflection over its entire surface. It shall be weather-resistant and show colour fastness. It

shall be new and unused and shall show no evidence of cracking, scaling, pitting, blistering, edge lifting or curling and shall have negligible shrinkage or expansion. A certificate of having tested the sheeting for co-efficient of retro-reflection, day/night time colour luminous, shrinkage, flexibility, linear removal, adhesion, impact resistance, specular gloss and fungus resistance 3 years outdoor weathering and its having passed these tests shall be obtained from a Government Laboratory, by the manufacturer of the sheeting. The retro-reflective sheeting shall be either of Engineering Grade material with enclosed lens, High Intensity Grade with encapsulated lens or Micro- prismatic Grade retro-reflective element material as given in Clause below

**Micro Prismatic Grade Sheeting (Type XI) :** Retro reflective sheeting typically manufactured as a cube corner. The reflective sheeting shall be retro reflective sheeting made of micro prismatic retro reflective material. The retro reflective surface, after cleaning with soap and water and in dry condition shall have the minimum co-efficient of retro reflection (determined in accordance with ASTM D 4956-09) as indicated in Table 800

Table 800 Acceptable Minimum Coefficient of Retro-reflection for Type XI Prismatic Grade Sheeting<sup>A</sup>  
(Candelas per Lux per Square Metre)

Observation Angle	Entrance Angle	white	Yellow	Orange	Green	Red	Blue	Brown	Florescent yellow-Green	Florescent yellow	Florescent Orange
0.1° B	-4°	830	620	290	83	125	37	25	660	500	250
0.1° B	+30°	325	245	115	33	50	15	10	260	200	100
0.2°	-4°	580	435	200	58	87	26	17	460	350	175
0.2°	+30°	220	165	77	22	33	10	7	180	130	66
0.5°	-4°	420	315	150	42	63	19	13	340	250	125
0.5°	+30°	150	110	53	15	23	7	5	120	90	45
1.0°	-4°	120	90	42	12	18	5	4	96	72	36
1.0°	+30°	45	34	16	5	7	2	1	36	27	14

A Minimum Coefficient of Retro reflection (RA) (cd.lx<sup>-1</sup>.m<sup>-2</sup>).

B Values for 0.1° observation angles are supplementary requirements that shall apply only when specified by the purchaser in the contract or order.

When totally wet, the sheeting shall show not less than 90 percent of the values, of retro reflection indicated in above Table. At the end of 10 years, the sheeting shall retain at least 80 percent of its original retro-reflectance.

**Messages / borders :** The messages (legends, letters, numerals etc.) and borders shall either be screen-printed or of cut-outs from durable transparent overlay or cut-out from same type of reflective sheeting (excluding for black colour) for the cautionary/ mandatory signs. Screen printing shall be processed and finished with materials and in a manner specified by the sheeting manufacturer. For the information and other signs, the messages (legends, letters, numerals etc.) and borders shall be cut-out from durable transparent overlay film or cut out from same reflective sheeting only. Cut-outs shall be bonded with the sheeting in the manner specified by the manufacturer. Both the screen printed areas and cut-out messages sheetings and cut-out durable transparent overlay film shall be covered under the warranty period of the sheeting type, issued by the sheeting manufacturer

For screen-printed transparent coloured areas on white sheeting, the coefficient of retro-reflection shall not be less than 50 per cent of the values of corresponding colour in Tables 800 as applicable.

Cut-out messages and borders, wherever used, shall be made out of retro-reflective sheeting (as per Clauses 801.3.2 as applicable), except those in black which shall be of non- reflective sheeting.

**Colour :** Unless otherwise specified, the general colour scheme and properties shall be as stipulated in ASTM 4956-09. The colours shall be durable and uniform in acceptable hue when viewed in day light or under normal headlights at night and in inclement weather conditions.

**Adhesives:** The sheeting shall have either a pressure-sensitive adhesive of the aggressive- tack type requiring no heat, solvent or other preparation for adhesion to a smooth clean surface, or a tack free adhesive activated by heat, applied in a heat-vacuum applicator, in a manner recommended by the sheeting manufacturer. The adhesive shall be protected by an easily removable liner (removable by peeling without soaking in water or other solvent) and shall be suitable for the type of material of the base plate used for the sign. The adhesive shall form a durable bond to smooth, corrosion and weather resistant surface of the base plate such that it shall not be possible to remove the sheeting from the sign "base in one piece by use of sharp instrument. In case of pressure-sensitive adhesive sheeting, the sheeting shall be applied in accordance with the manufacturer's Specifications. Sheeting with adhesives requiring use of solvents or other preparation for adhesive shall be applied strictly in accordance with the manufacturer's instructions.

**Refurbishment:** Where existing signs are specified for refurbishment, the sheeting shall have a semi-rigid aluminium backing or materials as per Clause 801.2.5, pre- coated with aggressive-tack type pressure sensitive adhesive. The adhesive shall be suitable for the type of material used for the sign and should thoroughly bond with that material.

### 801. 3.8 Fabrication

Surface to be reflectorised shall be effectively prepared to receive the retro- reflective sheeting. The sheeting of the material as per IRC:67:2010 , shall be de-greased either by acid or hot alkaline etching and all scale/dust/ coating of any type removed/ scrubbed to obtain a smooth plain surface before the application of retro-reflective sheeting. If the surface is rough, approved surface primer may be used. After cleaning, metal shall not be handled, except by suitable device or clean canvas gloves, between all cleaning and preparation operation and application of reflective sheeting/primer. There shall be no opportunity for the substrate to come in contact with grease, oil or other contaminants prior to the application of retro-reflective sheeting.

Complete sheets of the material shall be used on the signs except where it is unavoidable; at splices, sheeting with pressure sensitive adhesives shall be overlapped not less than 5 mm. Where screen printing with transparent colours is proposed, only butt jointing shall be used. The material shall cover the sign surface evenly and shall be free from twists, cracks and folds. Cut- outs to produce legends and borders shall be bonded with the sheeting in the manner specified by the manufacturer.

**801.3.9 Warranty and durability:** The Contractor shall obtain from the manufacture a ten year warranty for satisfactory field performance including stipulated retro-reflectance of the retro- reflective sheeting of micro-prismatic sheeting, a seven-year warranty for high intensity grade and a five year warranty for the sheeting of engineering grade and submit the-same to the Engineer. In addition, a ten year, seven year and a five year warranty for satisfactory In-field performance of the finished sign with retro-reflective sheeting of micro prismatic, high intensity grade and engineering grade respectively, inclusive of the screen printed or cut out letters/legends and their bonding to the retro-reflective sheeting shall be obtained from the contractor/supplier and submitted to the Engineer. The Contractor/ supplier shall also furnish the LOT numbers and certification that the signs and materials supplied against the assigned work meets all the stipulated requirements and carry the stipulated warranty and that the contractor/supplier is the authorized converter of the particular sheeting:

All signs shall be dated during fabrication with indelible markings to indicate the start of warranty. The warranty shall also cover the replacement obligation by the sheeting manufacturer as well as contractor for replacement/repair/restoration of the retro-reflective efficiency.

A certificate in original shall be given by the sheeting manufacturer that its offered retro-reflective sheeting has been tested for various parameters such as co-efficient of retro-reflection, day/night time colour and luminance, shrinkage, flexibility, linear removal, adhesion, impact resistance, specular gloss and fungus resistance and 3 year outdoor weathering; the tests shall be carried out by a Government Laboratory in accordance with various ASTM procedures and the results must show that the sheeting have passed the requirements for all the above mentioned parameters. A copy of the test reports shall be

attached with the certificate.

## Installation

The traffic signs shall be mounted on support posts, which may be of GI pipes conforming to IS: 1239, Rectangular Hollow Section conforming to IS :4923 or Square Hollow Section conforming to IS:3589. Sign posts, their foundations and sign mountings shall be so constructed as to hold these in a proper and permanent position against the normal storm wind loads or displacement by vandalism. Normally, signs with an area up to 0.9 sq.m shall be mounted on a single post, and for greater area two or more supports shall be provided., Post- end(s) shall be firmly fixed to the ground by means of properly designed foundation. The work of foundation shall conform to relevant Specifications as specified.

All components of signs (including its back side) and supports, other than the reflective portion and G.I. posts shall be thoroughly de scaled, cleaned, primed and painted with two coats of epoxy/ fibre glass/ powder coated paint, Any part of support post below ground shall be painted with protective paint.

The signs shall be fixed to the posts by welding in the case of steel posts and by bolts and washers of suitable size. After the nuts have been tightened, the tails of the bolts shall be furred over with a hammer to prevent removal.

## Measurements for Payment

The measurement of standard cautionary, mandatory and information signs shall be in numbers of different types of signs supplied and fixed, while for direction and place identification signs, these shall be measured by area in square, metres.

### 801.6. Rate

The Contract unit rate shall be payment in full for the cost of making the road sign, including all materials, installing it at the site furnishing of necessary test certificates, warranty and incidentals to complete the work in accordance with these Specifications.

Note : The warranty as specified in clause- 801.3.9 should be in the name of NHIDCL and it must be deposited to the GM.

## 802 OVERHEAD SIGNS

### General

Overhead signs may be used in lieu of, or as an adjunct to, kerb mounted signs where the situation so warrants for proper information and guidance of the road users. The following conditions may be considered while deciding about the provision of overhead signs:

Traffic volume at or near capacity Complex interchange design

Three or more lanes in each direction Restricted sight distance

Closely spaced interchanges

Multi.-lane exits

Large percentage of commercial vehicles High speed traffic

## 804 Reflective Pavement Markers (Road Studs/Cat eyes)

### General

The work cover the providing and mixing of reflective pavement marker (RPM) or road stud, a device which is bonded to or anchored within the road surface for lane marking and delineation for nighttime visibility. It reflects incident light in directions close to the direction from which it came.

### Material

Plastic body of RPM/road stud shall be moulded from ASA (Acrylic Styrene Acrylonitrite) or HIPS (Hi-impact Polystyrene) or Acrylonitrite Butadiene Styrene (ABS) or any other suitable material approved by the Engineer. The markers shall support a load of 13635 kg tested in accordance with ASTM D 4280.

Reflective panels shall consist of number of lenses containing single or dual prismatic cubes capable of providing total internal reflection of the light entering the lens face. Lenses shall be moulded of methyl methacrylate conforming to ASTM D 788 or equivalent.

### Design

The slope or retro-reflecting surface shall preferably be 35+5 degree to base and the area of each retro-reflecting surface shall not be less than 13.0 sqcm.

### Optical Performance 804.4.1 Unidirectional and bi-directional studs

Each reflector or combination of reflectors on each face of the stud shall have a Coefficient of Luminous Intensity (C.I.L.) not less than that given in Table 800-12 or Table 800-13 as appropriate.

### 804.4.2 Omni-directional studs

Each Omni-directional stud shall have a minimum (C.I.L.) of not less than 2 mcd/lx

Table 800-12 Minimum C.I.L. Values for Category „A” studs

Entrance Angle	Observation angle	C.I.L. in mcd/lx		
		White	Amber	Red
0°U 5° L&R	0.3°	220	110	44
0°U 10° L&R	0.5°	120	60	24
Table 800-13 Minimum C.I.L. Values for Category „B” studs				

Entrance Angle	Observation angle	C.I.L. in mcd/lx		
		White	Amber	Red
0° U 6° L&R	0.3°	20	10	4
0° U 10° L&R	0.5°	15	7.5	3

Note: 1) The entrance angle or 0° U corresponds to the normal aspect of the reflectors when the reflecting road stud is installed in horizontal road surface.

2) A stud that incorporates one or more corner cube reflectors shall be considered to be included in category „A“. A stud that incorporates one or more bi-convex reflectors shall be considered to be included in category „B“.

### Tests

Coefficient of luminance intensity can be measured by procedure described in ASTM E 809 “Practice for Measuring Photometric Characteristics” or as recommended in BS: 873 - Part 4:1973.

Under test conditions, a stud shall not be considered to fail the photometric requirements if the measured C.I.L at any one position of measurement is less than the values specified in Table 800-12 or 800-13 provided that

- (i) the value is not less than 80% of the specified minimum, and the average of the left and right measurements for the specific angle is greater than the specified minimum.

### Solar Powered Road Markers (Solar Studs)

The solar studs shall be made of Aluminum alloy and poly carbonate material which shall be absolutely weather resistance and strong enough to support a load of 13635 kg tested in accordance with ASTM D4280. Its colour may be white, red, yellow, green or blue or combination as directed by the Engineer. Its water resistance shall meet the requirements of IP 65 in accordance with IS:12063:1987 Category 2 for protection against water ingress. The dimensions of solar studs shall not be less than 100 mm x 100 mm x 10 mm. It shall have super bright LEDs so as to provide long visibility from a distance of more than 800m. Its flashing rate shall not be less than 1 Hz. Its should be able to give the prescribed performance in the temperature range of -40°C to +55°C. Its life shall be not less than 3 years.

### Fixing of Reflective Markers Requirements

The enveloping profile of the head shall be smooth and the studs shall not present any sharp edges in traffic. The reflective portions of the studs shall be free from crevice or ledges where dirt might accumulate. All road studs shall be legibly marked with the name, trademark or other means of identification of the manufacturer. Marker height shall not exceed 20 mm. Marker width shall not exceed 130 mm. The base of the marker shall be flat within 1.3 mm. If the bottom of the marker is configured, the outermost faces of the

configurations shall not deviate more than 1.3 mm from a flat surface. All road studs shall be legibly marked with the name, trade mark or other means of identification of the manufacturer.

### **Placement**

The reflective marker shall be fixed to the road surface using the adhesives and the procedure recommended by the manufacturer. No nails shall be used to affix the marker, as nails are hazardous for the roads. Regardless of the type of adhesive used, the markers shall not be fixed if the pavement is not surface dry and on new asphalt concrete surfacing until the surfacing has been opened to traffic for a period of not less than 14 hours. The portions of the highway surface, to which the marker is to be bonded by the adhesive, shall be free of dirt, curing compound, grease, oil, moisture, loose or unsound layers, paint and any other material which would adversely affect the bond of the adhesive. The adhesive shall be placed uniformly on the cleaned pavement surface or on the bottom of the marker in a quantity sufficient to result in complete coverage of the area of contact of the marker with no voids present and with a slight excess after the marker has been lightly pressed in place. For epoxy installations, excess adhesive around the edge of the marker, excess adhesive on the pavement and adhesive on the exposed surfaces of the markers shall be immediately removed.

### **Warranty and durability**

The contractor shall obtain from the manufacturer a two-year warranty for satisfactory field performance including stipulated retro-reflectance of the reflecting panel and submit the same to the Engineer. In addition, a two year warranty for satisfactory infield performance of the finished road marker shall also be given by the contractor who carried out the work of fixing of reflective road markers. In case the markers are displaced, damaged, get worn out or lose their reflectivity compared to stipulated standards, the contractor would be required to replace all such markers within 15 days of the intimation from the Engineer at his own cost.

### **Measurement for Payment**

The measurement of reflective road markers shall be in numbers of different types of markers supplied and fixed.

### **Rate**

The contract unit rate for reflective road markers shall be payment in full compensation for furnishing all labour, material, tools, equipment including incidental costs necessary for carrying out the work at site conforming to the specifications complete as per approved drawings or as directed by the Engineer.

Note : The warranty as specified in clause- 804.7.3 should be in the name of NHIDCL and it must be deposited to the BO.

## SECTION 900 - QUALITY CONTROL FOR ROAD WORKS

Clause 901            General

Amend the clause 901.10 as under:

Clause 901.10        For bitumen, cutback, emulsion, mild steel, cement and other similar material where essential tests are to be carried out at the manufacture"s plant or at laboratories other than the site laboratory, the cost of samples, sampling, testing, and furnishing of the test certificates shall be borne by the Contractor. The frequency of tests regarding bitumen, cutback and emulsion in respect of its quality shall be as per the Table 900-4 of MOST Specification.

## SECTION 1000 - MATERIALS FOR STRUCTURES:

Clause 1014           Storage of Materials:

Clause 1014.3        Aggregates

The following shall be added at the end of the Clause:  
"Aggregates shall be stockpiled in a manner that will avoid segregation, contamination by foreign materials and intermixing of various sizes of aggregates."

## SECTION 3002- RESTORATION OF RAIN CUTS:

Clause 3002.4        Amend this as under:

"The earth works for restoration of rain cuts shall be measured in cum."

**(SECTION-VIII)**

**IMPLEMENTATION MANUAL AND**

## MAINTENANCE INTERVENTION LEVELS

### SECTION - VIII

#### IMPLEMENTATION MANUAL AND MAINTENANCE INTERVENTION LEVEL

(The Clause mentioned below to the relevant items are applicable only)

##### Introduction

Maintenance & Rehabilitation work of highway through one agency is the work of typical nature, which shall continue up to the expiry of base period specified in the contract (excluding defect liability period). These works need attention, efficiency, continuous monitoring and responsive management. This implementation manual spells out detailed guide-lines for implementing the maintenance programme successfully, defining the various activities to be accomplished by the Employer and the Contractor.

This work includes routine, periodic, recurrent and urgent maintenance activities to repair highway surface, shoulders, road side, drainage facilities, CD work, signs, markings, safety features and inspection facilities. The works of different nature at scattered locations within specified time frame need to be performed conforming to specifications and standards in order to keep carriageway in perfect condition.

##### Maintenance Procedures

The complete maintenance programme shall be spread over the initial base period of three months. There are eight significant procedural areas:

- 1. Maintenance Programme Planning
- 2. Resource Estimation Identification
- 3. Priorities
- 4. Work Scheduling Work
- 5. Management
- 6. Work Control and Quality Assurance
- 7. Maintenance Procedures
- 8. Records & Documentation

##### Maintenance Programme Planning

The maintenance programme planning shall be in two stages

- a First Stage: Within 28 days of issuance of Letter of Commencement by the Employer. Contractor & Engineer shall identify the activities of Routine Maintenance, which shall have to be taken up immediately who check the further deterioration of paved and unpaved surface of carriageway separately. To identify these activities formal field inspection shall be carried out by technical staff of Contractor & Engineer. A management meeting shall then be called within 7 (seven) days of inspection to scrutinize the identified works and then these works shall be quantified. Engineer shall then issue indent to

contractor for execution of these works specifying quantity to be executed at different locations, amount of works calculated on the basis of the unit rates quoted by contractor and date of completion. This part of work shall certainly be commenced not later than stipulated date of commencement.

- b. Finalisation of yearly maintenance programme: This activity shall begin with the stipulated date of commencement. The various steps proposed to be taken under this are as under:
  - i. to carryout present state inspection of entire stretch of Highway by Contractor & Engineer.
  - ii. To identify defects as per various available engineering characteristics of road & measurement of all defects in each subsection (length of subsection shall be 200 m) based on representative measurements for 25 m length in each sub section. The extent of defects shall be recorded in forms finalized in consultation with NHIDCL for paved road, unpaved road and structure / furniture. All Defects with its extent shall be assessed in terms of length & area of the sub section, mentioning chainage (locations) in order to have exact estimate of work.
  - iii. A comprehensive documentation shall be prepared separately by Engineer and Contractor mentioning their assessment of various types of defects in each km of road.
  - iv. Management meetings shall be called within 15 days of inspection to finalise and then to quantify the defects after comparison of measured condition of road and maintenance intervention levels set out in this Section on commonly acceptable basis. This shall be followed by identification of particular maintenance work proposed to be carried out at site to make good the defects noted above, out of various alternatives available in BOQ.

### Resource Estimation

The Engineer shall workout the yearly requirement of funds based on unit prices rates quoted by Contractor and quantities of various items proposed to be executed. A tentative programme shall be drawn on the basis of resources available with the contractor at different times of maintenance period including available establishment, equipment and labour availability with him. Cash flow available with the contractor shall also be basic input to determine proposed maintenance programme.

### Identification of Priorities

The Engineer shall work out order of priority, judiciously in order that jobs that have the stronger claim or resources placed ahead of the list and those having least claim are placed at the end.

The maintenance activities by order of importance shall be reckoned in the following order or as deemed proper by Engineer:

- a Urgent Works: Emergency repairs, removal of road blockade, repair to road breach, removal of accidental vehicles and dead animals, immediate repairs to CD works.
- b Recurrent Works: Blading and grading of unpaved surface, spot gravelling of unpaved surfaces, clearing of drains before rains, patch repair, local sealing and repair to pot holes.
- c Periodic Works: Re-gravelling shoulders, major repair to defective carriageway, road surface markings resealing and repair to CD works.
- d Other Periodic Works: Laying overlays and reconstruction

The activities mentioned under Routine Maintenance shall be carried out on continuous basis as does not fall in order of priority.

Seasonal variation in the year shall also be influencing factor to decide order of priority of maintenance works.

#### Work Scheduling

The maintenance and rehabilitation work of road is of unpredictable nature so quantities shown against each item or work are only representative. It is expected that they would be consumed during the entire base period of works but employer would not be responsible to pay any compensation etc. in case there is variation to any extent in quantity of actual execution of particular item of work with respect to representative quantity shown in BOQ for that particular work.

Scrutinized work proposals shall be negotiated by the Engineer with Contractor for quantity and time to complete those particular activities and accordingly they shall be classified into two groups:

Group - I: Works of short duration of completion (up to 2 months)

Group - II: Works of larger duration of Completion (more than 2 months)

For works under Group I, quarterly indents shall be issued and for works classified under Group 2, bi-annual indents shall be issued by the Engineer. These indents shall mean to identify, quantity the various works which contractor is expected to execute on his unit rates quoted by him at specified locations within the time period assigned in the indents. Each indent shall be treated as part of the work for which contractor has submitted Bids. The terms & conditions applicable in bid document shall also be applicable to these indented works.

In case of urgency requiring immediate actions to remove road blockade, to construct temporary diversion or urgent preventive measures to reduce extent of expected damages or to make precautionary arrangements to handle emergencies,. Engineer shall issue interim indents for such works / arrangements

to be complied with by the contractor in responsible manner without loss of time.

The price of any such work which are not covered with items mentioned in price bid, the rates and prices in the contract shall be used as the basis for valuation of

reasonable rates, failing which after due consultation by the Engineer with the Employer and the Contractor; suitable rates or prices shall be decided by the Engineer with the approval of Employer.

### Work Management

The success of Contract maintenance system lies with good work management. The contractor shall draw activities which shall be accomplished by in house crew and portion of the work to be accomplished with sub contractors.

#### 8.7.2

The system of quarterly reports such as budget reports, resources utilisation report, quality control and status of base maintenance programme (planned versus actual) has to be generated in order to evaluate working of contract maintenance system and to work out upgradation / modification required in the programme. The modification to finalised maintenance programme can be made with mutual consent of both the contractor and engineer to derive best results.

The contractor can also consider to introduce communication system (like mobile, etc). on the Highway for better and efficient management of site.

### Work Control & Quality Assurance

The Engineer shall adopt random sampling procedures to ensure quality control. Engineer shall carry out in- process inspections and end product inspections to collect samples and shall carry out testing in order to determine the degree of adherence to the maintenance standards of delivered or constructed material. Any testing / checking of works by Engineer shall not absolve the contractor from his responsibility to execute works strictly in accordance of MoRT&H / IRC / IS specifications or laid down standards in bid document.

A quality control laboratory equipped with all instruments required to perform tests as indicated in MoRT&H / IRC / IS specifications at frequency mentioned therein shall have to be provided by the contractor. Contractor shall ensure that testing of all material delivered or constructed is regularly carried out by his filed staff as per standard norms and results of these tests are recorded in specified manner and made available to Engineer whenever required by him. The contractor shall provide the QC laboratory, as incidental to work and separate payment shall be made for this item. The QC lab shall also be made available to Engineer for conducting tests of his own.

In- process inspections shall be carried out by the Engineer to witness and/ or to verify the quality / quantity of work, when activity is in process with aim to judge justification of payment. Engineer shall carry out end product inspections after completion of the activity to provide satisfactory evidence about acceptability of the contractors work.

The results of in process inspections, end product inspections and quality control tests shall form basis of acceptance of completed works and issuance of Non Conformance Report (NCR). Items of Works or unit of material or the end product do not meet the specifications / standards shall be identified by “Non-Conformance-Report” and can become basis of rejection of work on establishing the authorized disposition.

Non Conformance Report: Defective or uncompleted work shall not be paid. Such work shall also be notified to the Contractor within 10 days of submission of bill through non-conformance report (NCR). The NCR shall clearly identify the item of work that is non - conforming either to specification or to a specific requirement in the contract document. Once NCR is identified, it shall be evaluated and of the dispositions would be established.

- a. “Do” Identifies the work which has not been done at all at site within specified time limit. An NCR issued with “Do” disposition for the work should immediately be undertaken by contractor.
- b. “Re-Do” Identified the work, that is non conforming of all quality aspects. Such works be totally removed & redone.
- c. “Re-work” Requires part of particular item identified in this category be reworked to bring it to the quality required.
- d. “Use-as-is” Applied where Engineer accepts work “as-is” not withstanding the fact that it does not exactly conform to the contract requirements. This work shall be accepted only for

agreed reduced rates with respect to unit rates quoted in

financial bid by the contractor otherwise shall be re-classified

under disposition "Do" or "Re-Do".

## 8.9 Payment Procedures

8.9.1 The contractor shall submit to the Engineer after the end of each month

bill in two copies, each signed by authorized contractor's representative in

standard format, showing the amounts to which the contractor considered

himself to be entitled upto the end of the month. These bills should be prepared each indent wise.

Engineer after scrutiny of the bills shall certify and recommend the payments for completed accepted works within 14 days of presentation of bill to him to the employer subject to deductions as per bid documents.

employer shall pay the amount due to the Contractor under certificate and recommendations by the Engineer within 28 days after it has been delivered to the Employer.

## Records & Documentation

The results of all inspections shall be documented. The test results containing documentary evidence of activities and data relevant to the quality of work and performance of the contractor shall also be documented. The field daily to be filled by Site Engineer of Contractor shall be a basic form of documentation. The activities to be entered in daily dairy are

description of day's activities, number and type of crew on job, equipment on job weather and temperature

measurement made to determine pay quantities

y summary of material issued in the job

cord of significant conversations with and direction given to the contractor

cord of bottlenecks with the progress or execution of the

work A record of material testing in lab  
Details of visit by officials

The Contractor shall carryout road roughness measurement as directed by Engineer for the entire stretch at the end of the pavement maintenance and shall submit the complete record to NHIDCL. There shall not be any separate payment on account of this. The payment pertaining to this shall be deemed to be included in the items of works.

#### MAINTENANCE INTERVENTION LEVELS

Following criteria shall be adopted by the Engineer while indenting the works.

Sl. No.	Defects	Criteria/Extent (% of sub section length)	Treatment/Action	Type of maintenance
1	Shoulder & Slopes			
1.1	Vegetation growth on shoulders & side slopes	Any kind	Vegetation growth be removed	Routine
1.2	Trees	a. All kind	Trim and remove dead/ diseased branches	Routine
		b. Fallen trees on carriageway	Remove immediately	Urgent
		a.Upto 50mm	Fill & Compact	Routine
				Recurrent / Urgent
1.4	Disturbed stone pitching	a.Upto 30sqm.	Repair	Routine

		b. More than 30 sqm	Reconstruct	Urgent
2	Side drains			
2.1	Kuccha drains silted / too shallow	Any extent	Clean & repair	Routine
2.2	Standing water on shoulders / drains	Any	Realign to correct gradient and make shallow w lateral drains	Routine
2.3	Silting in pucca side drains	Any extent	Clean out	Routine
2.4	Damages or scouring of pucca drains	Any extent	Repair and reconstruct to adequate size and shape	Routine
3	CD Works			
3.1	Silted or blocked openings	Any extent	De-silting / cleaning	Routine

3.2	Erosion / Scour in upstream / down stream	Any extent	Repair / fill the boulders	Periodic
3.3	Pot holes erosion in paved surface floor	Any extent	Repair with concreting	Periodic
3.4	Damaged crash barriers	Any	Reconstruct	Recurring / Urgent
3.5	Vegetation growth at	Any	Remove & Clear	Routine

	inlet / outlet & near parapets			
3.6	Damaged masonry in parapets / substructure /	Any extent	Repair to match with existing &	Recurrent
	superstructure		report to the	
			Engineer	
3.7	Painting exposed surfaces of bridge railings, kerb stones, parapets	Any	Repaint / White wash	Periodic
3.8	Cracks in structure	Any	Repair and report to the Engineer	Recurrent / Urgent
		a. Upto 20 sqm	Repair with epoxy mortar or injected concreting	Urgent
		b. More than 20 sqm	Reconstruct	Urgent / Special alters
3.10	Checking of expansion joints	Any	Check & repair & clean	Periodic

3.11	Maintenance bearings	of Any (In case replacement	Check & clean & carry out ordinary maintenance	Periodic
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		of bearings is required, then specific report to be given to the Engineer)		
4	Road Furniture			
	Dirty road signs / delineators			
	Damage / corroded Road signs and delineators		Repair, repaint or replace	
4.3	Missing road signs	Any	Replace	Routine
	Damage / missing median kerbs, boundary pillars, 200 m stone, km stone & 5 <sup>th</sup> km stones			
	Painting & printing letters on signs, road km stones, 200 m <sup>th</sup> stone, 5 km stones		Repaint & print to match with existing	
4.6	Safety barriers, fencing	Any	Repair & repaint	Periodic
		a. Upto 30		

		sqm.		
		b. More than 30 sqm.		

5	Road side safety Miscellaneous	/			
5.1	Dead animals		Any	Remove and bury	Recurrent / Urgent
5.2	Broken down in accidental vehicle	/	Any	Inform traffic police and remove	Recurrent / Urgent
5.3	Road blockade		Any	Inform traffic police, remove	Recurrent / Urgent

				blockade if reqd. construction temporary diversion	
6	Carriageway & Crust				
		a. <25 sqm.		Local sealing	Routine
		b. >25 sqm.		Thin coat surface dressing	Periodic
		a. depth of ruts <			

		50 mm		
		i. Crack < 10 mm	Seal crack th e with slurry	Routine
		ii. crack > 10 mm	Surface fill dressing & ruts with	Recurrent

bituminous mix

b. depth of ruts

> 50 mm

i. Crack < 10 mm Seal the cracks with slurry and fill ruts with bituminous mix Routine

		ii. crack > 10 mm	Surface dressing over cracked area to be followed by overlay	Periodic coat / Special attention
6.3	Pot holes	a. <20 mm	Patch repair to pot holes	Recurrent
		b. >20 mm	Patch repair to pot holes & check dressing of crust for strengthening if reqd.	Recurrent / Special Attention
6.4	Bleeding	a. < 25 sqm	Spread and roll over 6 mm size heated aggregates	Routine

		b. > 25 sqm	Apply surface	Periodic
			dressing	
			g	

6.5	Cracks	a. < 25 sqm	Local sealing of cracks	Routine
		b. > 25 sqm	Local sealing followed by renewal	Periodic
6.6	Hungry surface	Any	Apply, slurry seal or fog seal	Recurrent

6.7	Corrugations	-----	Cutting of high spots and filling of low spots with existing surfacing material and seal the surface	Recurrent
6.8	Shoving	-----	Remove the material upto firm base and relay stable mix	Recurrent

6.9	Shallow depressions	-----	Repair the depression with h pre-mixed material	Recurrent
6.10	Settlements & upheaval	a. <20 sqm	Remove the weak / defective fill upto	Recurrent

		base & redo.	
		<p>i. Remove the weak / defective fill upto base &amp; redo</p> <p>ii. Strengthen the crust by providing additional layers</p>	
	Edge breaking & edge Steps	<p>Cut affected area and patch repair to road edge; with repair to unpaved shoulders also</p> <p>Reconstruct shoulders and repair to carriageway edge also</p>	