

GOVERNMENT OF UTTAR PRADESH
UTTAR PRADESH CORE ROAD NETWORK DEVELOPMENT
PROGRAMME (UPCRNDP)

AGREEMENT NO : UPCRNDP/UPG/02/2014

NATIONAL COMPETITIVE BIDDING

(CIVIL WORKS)

NAME OF WORK : Upgradation and Maintenance of Garautha-Chirgaon
Section of SH-42 from km 118.600 to km 167.745.

PERIOD OF AVAILABILITY OF BIDDING DOCUMENT ON WEBSITE (IST) HOURS : FROM 29th Dec., 2014 TIME 17:00 Hours (IST)
TO 28th Jan., 2015 TIME 17:00 Hours(IST)

TIME AND DATE OF PRE-BID CONFERENCE : DATE 16th Jan., 2015 TIME 15.00 HOURS(IST)

LAST DATE AND TIME FOR RECEIPT OF BIDS ONLINE : DATE 28th Jan., 2015 TIME 17.00 HOURS(IST)

TIME AND DATE OF OPENING OF BIDS(THE BIDS WILL BE OPENED ONLINE BY THE AUTHORIZED OFFICERS AT THE APPOINTED TIME) : DATE 30th Jan., 2015 TIME 16.00 HOURS(IST)

OFFICER INVITING BIDS : CHIEF ENGINEER, WORLD BANK
PROJECTS (Roads), U.P.P.W.D., LUCKNOW

INVITATION FOR BID

(IFB)

GOVERNMENT OF UTTAR PRADESH
UTTAR PRADESH CORE ROAD NETWORK DEVELOPMENT PROJECT (UPCRNDP)

e-PROCUREMENT NOTICE /INVITATIONS FOR BIDS (IFB)

NATIONAL COMPETITIVE BIDDING

Date: 26th Dec., 2014

Bid No.: **UPCRNDP/UPG/02/2014**

1. The Government of Uttar Pradesh through Government of India has received a loan from the International Bank for Reconstruction & Development towards the cost of Uttar Pradesh Core Road Network Development Project and intends to apply a part of the funds to cover eligible payments under the contracts for construction of works as detailed below. Bidding is open to all bidders from eligible source countries as defined in the *IBRD Guidelines for Procurement*. Bidders from India should, however, be registered with the Government of Uttar Pradesh or other State Governments/Government of India, or State/Central Government Undertakings. **Bidders are advised to note the minimum qualification criteria specified in Clause 4 of the Instructions to Bidders to qualify for the award of the contract.**
2. The Governor of Uttar Pradesh through Chief Engineer, World Bank Projects (Roads), UPPWD invites item rates bids in electronic tendering system for the construction of works detailed in the table at the end of this e-Procurement Notice/IFB.
Date of release of Invitation for Bids through e-procurement : 26/12/2014
3. The bidding under this contract is electronic bid submission through website <http://etender.up.nic.in> Detailed guidelines for viewing bids and submission of online bids are given on the website. The Invitation for Bids under UPCRNDP is published on this website. Any prospective bidder can logon to this website and view the Invitation for Bids and can view the details of works for which bids are invited. The prospective bidder can submit bids online; however, the bidder is required to have enrolment/registration in the website and should have valid Digital Signature Certificate (DSC), for signing and encryption issued by a Certifying Authority licensed under Controller of Certifying Authorities of India, in the form of smart card/e-token. The DSC can be obtained from any authorized certifying agencies. The bidder should register in the web site <http://etender.up.nic.in> using the relevant option available.
4. The bidders are required to submit (a) original demand draft towards the cost of tender fee; (b) original bid security in approved form; (c) original affidavit regarding correctness of information furnished with the bid document as per provisions of Clause 4.5 B (d) of ITB; and (d) . Original Power of Attorney in favor of the person signing the Bid, as required under ITB 4.5.B (a) to the Office of the Chief , World Bank Projects (Roads), U.P.P.W.D., up to 30 minutes before the date and time of opening of Bids, either by registered post or by hand, failing which the bids shall be declared non-responsive.
 - (i) The above documents shall be submitted in one envelope.
 - (ii) The number mentioned on acknowledgement of online submission of the bid by the bidder shall be mentioned on envelope containing the documents as detailed above.
 - (iii) Bid Security: INR 39Million

- (iv) Cost of Bid Document: INR 5000/- (non-refundable) only in form of demand draft in favour of in **favour of Executive Engineer, World Bank Division No. 1, UP PWD, Lucknow; payable at Lucknow.**
5. A pre-bid meeting will be held on 16th Jan., 2015 at 15:00 Hrs. at the Office of Chief Engineer, World Bank Projects (Roads), UPPWD, Nirman Bhawan, 96, MG Marg, Lucknow-226 001 to clarify the issues and to answer questions on any matter that may be raised at that stage as stated in Clause 9.2 of 'Instructions to Bidders' of the bidding document.
6. The last Date and time for receipt of bids through the e-tendering portal <http://etender.up.nic.in> is **28/01/2015** upto 17:00 Hrs and will be opened on **30/01/2015** at 16:00 Hrs. If the office happens to be closed on the date of opening of the bids as specified, the bids will be opened on the next working day at the same time and venue.
7. Other details can be seen in the bidding documents. The Employer shall not be held liable for any delays due to system failure beyond its control. Even though the system will attempt to notify the bidders of any bid updates, the Employer shall not be liable for any information not received by the bidder. It is the bidders' responsibility to verify the website for the latest information related to the tender.

TABLE

Package No.	Name of work	Approximate value of work (INR) in million	Bid security (INR) in million	Cost of document (INR)	Period of completion (months)
1	2	3	4	5	6
1	Upgradation and Maintenance of Garautha-Chirgaon Section of SH-42 from km 118.750 to km 167.745				
	Part-1 Works: Upgradation works	1957	39	5000	24 Months
	Part-2 Works: Maintenance Works after Part 1 Works				60 Months

Chief Engineer,
World Bank Projects (Roads),
For and on behalf of
Governor of Uttar Pradesh,
Public Works Department,
96, Mahatma Gandhi Marg,
Lucknow 226 001 , Uttar Pradesh – INDIA
Telephone No. : (91) 0522-2236496
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Section 1: Instructions to Bidders

(ITB)

Section 1: Instructions to Bidders

Table of Clauses

A. General No.	Page No.	D. Submission of Bids	Page
1. Scope of Bid	6	18. Bidding through E-Tendering System	15
2. Source of Funds	6	19. Electronic Submission of Bids	15
3. Eligible Bidders	6	20. Deadline for Submission of Bids	15
4. Qualification of the Bidder	6	21. Late Bids	15
5. One Bid per Bidder	10	22. Modification and Withdrawal of Bids	15
6. Cost of Bidding	11		
7. Site Visit	11		
 B. Bidding Documents		 E. Bid Opening and Evaluation	
8. Content of Bidding Documents	11	23. Bid Opening	16
9. Clarification of Bidding Documents	11	24. Process to be Confidential	16
10. Amendment of Bidding Documents	12	25. Clarification of Bids	16
		26. Examination of Bids and Determination of Responsiveness	17
		27. Correction of Errors	17
 C. Preparation of Bids		28. Deleted	17
11. Language of Bid	12	29. Evaluation and Comparison of Bids	17
12. Documents Comprising the Bid	12	30. Deleted	18
13. Bid Prices	13	 F. Award of Contract	
14. Currencies of Bid and Payment	13	31. Award Criteria	18
15. Bid Validity	14	32. Employer's Right to Accept any Bid and to Reject any or all Bids	18
16. Bid Security	14	33. Notification of Award and Signing of Agreement	19
17. Alternative Proposals by Bidders	14	34. Performance Security	19
		35. Advance Payment and Security	19
		36. Adjudicator	19
		37. Fraud and Corruption	20

A. General

1. Scope of Bid

- 1.1 The Chief Engineer, World Bank Projects (Roads), UPPWD (referred to as Employer in these documents) on behalf of the Governor of Uttar Pradesh invites bids for the construction and maintenance of works (as defined in these documents and referred to as "the works") detailed in the table given in IFB.
- 1.2 The successful bidder will be expected to complete the works by the intended completion date specified in the SCC.

2. Source of Funds

- 2.1 State of Uttar Pradesh, India has received a loan from the International Bank for Reconstruction and Development (hereinafter interchangeably called "the Bank") towards the cost of Uttar Pradesh Core Road Network Development Project and intends to apply a part of the funds to cover eligible payments under the contract for the Works. Payments by the Bank will be made only at the request of the borrower and upon approval of the Bank in accordance with the *Loan Agreement*, and will be subject in all respects to the terms and conditions of that Agreement. Except as the Bank may specifically otherwise agree, no party other than the borrower shall derive any rights from the *Loan Agreement* or have any rights to the loan proceeds.
- 2.2 The loan agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security Council, taken under Chapter VII of the Charter of the United Nations.

3. Eligible Bidders

- 3.1 This *Invitation for Bids* is open to all bidders from the eligible countries as defined under the *IBRD Guidelines for Procurement*. Any materials, equipment, and services to be used in the performance of the Contract shall have their origin in the eligible source countries.
- 3.2 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a statement that the Bidder is not associated, nor has been associated in the past, directly or indirectly, with the Consultant or any other entity that has prepared the design, specifications, and other documents for the Project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Borrower to provide consulting services for the preparation or supervision of the works, and any of its affiliates, shall not be eligible to bid.
- 3.3 Government-owned enterprises in the Employer's country may only participate if they are legally and financially autonomous, operate under commercial law and are not a dependent agency of the Borrower or Sub-borrower.
- 3.4 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the Bank in accordance with sub-clause 37.1.

4. Qualification of the Bidder

- 4.1 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.
- 4.2 Deleted

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

- (a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the Bid to commit the Bidder;
- (b) total monetary value of construction work performed for each of the last five years from 2009-10 to 2013-14;
- (c) experience in works of a similar nature and size for each of the last five years from 2009-10 to 2013-14, and details of works under way or contractually committed; and clients who may be contacted for further information on those contracts;
- (d) major items of construction equipment proposed to carry out the Contract;
- (e) qualifications and experience of key site management and technical personnel proposed for the Contract;
- (f) reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five years (from 2009-10 to 2013-14);
- (g) evidence of adequacy of working capital for this contract (access to line (s) of credit and availability of other financial resources);
- (h) authority to seek references from the Bidder's bankers;
- (i) information regarding any litigation or arbitration resulting from contracts executed by the Bidder in the past five years (from 2009-10 to 2013-14) or currently under execution. The information shall include the names of the parties concerned, the disputed amount, cause of litigation, value of contract and matter in dispute;
- (j) proposals for subcontracting components of the Works which in aggregate add to more than 20 percent of the Bid Price (for each, the qualifications and experience of the identified subcontractor in the relevant field should be annexed; no vertical splitting of work for subcontracting is acceptable); and
- (k) the proposed methodology and program of construction including Environmental Management Plan, backed with equipment, materials and manpower planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.

4.4 Bids from joint venture are not acceptable.

4.5 A. To qualify for award of the contract, each bidder in its name should have in the last five years *i.e.* 2013-14, 2012-13, 2011-12, 2010-11, 2009-10:[@]

- (a) achieved, in at least two financial years, a minimum annual financial turnover (in all classes of civil engineering construction works only) of INR.1957 million;

[@]at 2014-15* price level. Financial turnover and cost of completed works of previous years shall be given weightage of 8% per year based on rupee value to bring them to 2014-15 price level*.

- (b) satisfactorily completed (not less than 90% of contract value), as a prime contractor, (or as subcontractor duly certified by the employer/main contractor) at least **one similar work** of value not less than INR 1565 million;
- (c) executed in any one year, the following minimum quantities of work:

<i>i) Earthwork in excavation, embankment & sub-grades for Road constructions</i>	<i>5,74,000 Cum</i>
<i>ii) Granular Sub Base, WMM/WBM</i>	<i>2,20,000 cum</i>
<i>iii) Bituminous work with DBM, BM, SDBC & BC work</i>	<i>59,000 Cum</i>
<i>iv) RCC above M 20 grade</i>	<i>15,100 Cum</i>

4.5 B. Each bidder should further demonstrate:

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

Sl. No.	Equipment Type and Characteristics	Minimum Capacity	Max. age of equipment (years)	Minimum Number required
1	Batch type Central Hot Mix Plant	160 TPH	5	1 No.
2	Concrete Batch-mix (RMC) Plant	75 Cum/Hr	5	1 No.
3	Wet Mix Macadam plant	75 TPH	5	1 No.
4	Motor Grader	135 HP	5	2 Nos.
5	Paver finisher hydrostatic with sensor control	100 TPH	5	1 No.
6	Bitumen /Emulsion pressure distributor	1750 sqm per hour	5	1 No.
7	Earth Vibratory road roller	(8–10 t static weight)	5	2 Nos.
8	Pneumatic Tyred Vibratory Roller	(12–15 T static weight)	5	1 Nos.
9	Smooth wheeled tandem roller	6-8 tonnes	5	2 Nos.
10	Front end loader	1 cum	5	5 Nos.
11	Loader cum excavator mini type JCB	1 cum bucket size	5	2 Nos.
12	Earth Vibratory Road Roller(for narrow stretches)	1.5 T	5	1 Nos
13	Earth Work Compactor (for narrow stretches)		5	1 Nos
14	Hydraulic excavator	0.9 cum bucket size	5	1 No.
15	Bull Dozer	D-80-A12	5	1 No.
16	Tipper rigid axle	10 tones	5	5 Nos.
17	Water tanker	6 KL	5	2 Nos.
18	Pneumatic concrete breakers		5	1 No.
19	Hydraulic mobile crane	boom height 6m	5	1 No.
20	Dewatering Pump sets	10 HP	5	1 No.
21	Air Compressor	250 cfm	5	2 Nos.
22	Mechanical broom	1250 sqm per hour	5	1 No.
23	Road marking machine		5	1 No.
24	Generator	125 KVA	5	1 No.
25	Generator	250 KVA	5	1 No.
26	Total Station		5	2 No.
27	Electronic Leveling Instrument		5	3 Nos.

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

The bidders should, however, undertake their own studies and furnish with their bid, a detailed construction planning and methodology supported with layout and necessary drawings and calculations (detailed) as stated in clause 4.3 (k) above to allow the employer to review their proposals. The numbers, types and capacities of each plant/equipment shall be shown in the proposals along with the cycle time for each operation for the given production capacity to match the requirements.

- (b) availability for this work of a Project Manager with no less than fifteen years' experience in construction of similar civil engineering works and other key personnel with adequate experience as below

Sl. No.	Position	No.	Total Work Similar Experience (years)	Experience In Similar Position (years)	Qualification and Specific Experiences
1	Project Manager–	1	15	5	Degree in Civil Engg. & must have worked as project manager
2	Highway Engineer	1	10	5	Degree in Civil Engg. & must have worked as Highway Engr. Or Diploma with a total experience of 15 years and 8 years in similar position.
3	Material Engineer	1	10	5	Degree in Civil Engg. & must have worked as material Engr. Or Diploma with a total of 15 years of experience with 8 years in similar position.
4	Quantity Surveyor	1	5	3	Degree/ Diploma in Civil Engg. & must have worked as Quantity surveyor
5	Land Surveyor	2	5	3	Diploma in Civil Engg. & must have worked as land surveyor
6	Mechanical / Equipment Maintenance Engineer	1	5	3	Dip/Degree in Mech. Engineering.
7	Environmental cum Construction safety manager	1	5	3	Graduate and preferably with post graduate degree/diploma in environmental science or equivalent & must have worked in similar position

- (c) liquid assets and/or availability of credit facilities of no less than INR 326 million in the format given in Section 2.

(Credit lines/letter of credit/certificates from Banks for meeting the funds requirement etc.)

- (d) Each bidder must scan and upload along with the Bid :
- (i) A copy of PAN issued by Income Tax Authorities; and
 - (ii) An affidavit that the information furnished with the bid document is correct in all respects; and

4.5 C. To qualify the bidder must demonstrate having experience and resources sufficient to meet the qualifying criteria.

4.6 Sub-contractor's experience and resources will not be taken into account in determining the Bidder's compliance with the qualifying criteria.

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

$$\text{Assessed Available Bid capacity} = (A * N * 1.5 - B)$$

where

A = Maximum value of civil engineering works executed in any one year during the past five years (from 2009-10 to 2013-14) (updated to 2014-15 price level) taking into account the completed as well as works in progress.

N = Number of years prescribed for completion of the Part-1 Works for which bids are invited.

B = Value, at 2014-15 price level, of existing commitments and on-going works to be completed during the next two years

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

Cost of works of previous years shall be given weightage of 8% per year based on rupee value to bring them to 2014-15 price level.

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

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

5. One Bid per Bidder

5.1 Each bidder shall submit only one bid for one contract. A bidder who submits or participates in more than one Bid (other than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified.

6. Cost of Bidding

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

7. Site visit

- 7.1 The Bidder, at the Bidder's own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into the contract. The costs of visiting the Site shall be at the Bidder's own expense.

B. Bidding Documents

8. Content of Bidding Documents

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

Invitation for Bids

Section	1	Instructions to Bidders
	2	Forms of Bid and Qualification Information
	3	General Conditions of Contract
	4	Special Conditions of Contract
	5	Specifications
	6	Drawings
	7	Bills of Quantities
	8	Forms of Securities

- 8.2 The bid document is available online on the website <http://etender.up.nic.in>. The bid document can be downloaded free of cost. However, the bidder is required to submit demand draft towards cost of bid document in favour of the name given in e-Procurement Notice/IFB..

9. Clarification of Bidding Documents

- 9.1 A prospective bidder requiring any clarification may notify the authority inviting the bid. The authority inviting bid will respond to any request(s) for clarification received earlier than 10 days prior to the deadline for submission of bids. Description of clarification sought and the response of the authority inviting the bid will be uploaded for information of the public or other bidders without identifying the source of request for clarification.

9.2 Pre-bid meeting

- 9.2.1 The bidder or his official representative is invited to attend a pre-bid meeting which will take place at the Office of the Chief Engineer, , World Bank Projects (Roads), UPPWD, Nirman Bhawan, 96, MG Marg, Lucknow-226 001 on **16th Jan.,2015 at 15:00 Hrs.**
- 9.2.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 9.2.3 The bidder is requested to submit any questions, not later than one week before the meeting, only through the e-procurement portal.
- 9.2.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be uploaded on the e-procurement portal. Any modification of the bidding documents listed in Sub-Clause 8.1 which may become necessary as a

result of the pre-bid meeting shall be made by the 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 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

10. Amendment of Bidding Documents

10.1 Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing online corrigendum. The corrigendum will appear on the web page of the e-procurement portal <http://etender.up.nic.in> under “Latest Corrigendum” and email notification is also automatically sent to those bidders who have moved this tender to their “My Tenders” area.

10.2 Any addendum thus issued shall be part of the bidding documents and deemed to have been communicated to all the bidders who have moved this tender to their “My Tenders” area. In case of any addendum/corrigendum, the system will automatically send e-mails to all bidders who have downloaded the bidding document and have moved the tender to their “My Tenders” area.

10.3 To give prospective bidders reasonable time in which 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 Sub-Clause 20.2 below.

C. Preparation of Bids

11. Language of the Bid

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

12. Documents comprising the Bid

12.1 The bid submitted by the bidder shall comprise the following:

- (a) The Bid (in the format indicated in Section 2).
- (b) Bid Security;
- (c) Priced Bill of Quantities;
- (d) Qualification Information Form and Documents;

and any other materials required to be completed and submitted by bidders in accordance with these instructions. The documents listed under Sections 2 and 7 of Sub-Clause 8.1 shall be filled in without exception.

12.2

The documents and details mentioned in clause 12.1 above shall be submitted online on the portal <http://etender.up.nic.in>. Details and process of online submission of the tender and relevant documents are given in the website mentioned above. The above are to be submitted in the manner as prescribed below:

- (a) The following details shall be entered on line in the prescribed formats:
 - i) The entry of rates for individual items of work shall be made by the bidder on line.
- (b) Scanned copies of the following documents shall be uploaded on the website <http://etender.up.nic.in> at the appropriate place.
 - i) Demand Draft towards the Cost of Bid Document (Clause 4 of IFB)
 - ii) Bid Security in any of the forms specified in ITB (Clause 16 of ITB)

- iii) Copy of PAN Card issued by Income Tax Authorities (Clause 4.5 B. (d) of ITB)
 - iv) Certificate of Contractor Registration with Government of Uttar Pradesh or other State Governments/Government of India, or State/Central Government Undertakings (Clause 1 of IFB)
 - v) Evidence of access to line of credit (Clause 4.5 B. (c) of ITB)
 - vi) Annual Turnover Certificate from Chartered Accountant for last five financial years forms with breakup of civil works and total works each financial years. (Clause 4.5 A. (a) of ITB)
 - vii) Statement of Eligibility (Clause 3 of ITB)
 - viii) Affidavit regarding correctness of certificates (Clause 4.5 B. (d) of ITB)
 - ix) Bid Form, as per format given in Section.2.
 - x) Any other documents as specified by the State in the ITB.
- (c) Scanned copies of the Certificates showing details of similar nature of works, work in hand and machineries owned or possessed on hire should be uploaded after converting the same to PDF.
- i) Similar nature of works executed (Clause 4.5 A. (b) of ITB)
 - ii) Works in hand (Clause 4.7 of ITB)
 - iii) Machineries owned/brought on hire (Clause 4.5 B. (a) of ITB)
 - iv) Project Manager and other key staff (Clause 4.5 B (b) of ITB)

Submission of Original Documents: The bidders are required to submit (a) original demand draft towards the cost of bid document and (b) original bid security in approved form and (c) original affidavit regarding correctness of information furnished with bid document as per provisions of Clause 4.3 & 4.4 of ITB with the office of the Chief Engineer, World Bank Projects (Roads), UPPWD, latest by **15:30 Hrs on 30th Jan., 2015** , either by registered post or by hand, failing which the bids shall be declared non-responsive. In the event of the specified date declared a holiday for the Employer, the Bids will be received upto the appointed time on the next working day

13. Bid Prices

- 13.1** The contract shall be for the whole works as described in Sub-Clause 1.1, based on the priced Bill Quantities submitted by the Bidder.
- 13.2** The bidders shall make online entries to fill in rates in bill of quantities. Upon numerical entry, the amount in words would automatically appear and upon entry of rates in all the items of work, total bid price would automatically be calculated by the system and would be displayed. The items for which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities.
- 13.3** All duties, taxes, and other levies payable by the contractor under the contract, or for any other cause shall be included in the rates, prices and total Bid Price submitted by the Bidder.

Note: *“Excise Tax exemption as per prevailing norms of Government of India shall be available .”*

- 13.4** The rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 47 of the Conditions of Contract.

14. Currencies of Bid and Payment

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

15. Bid Validity

15.1 Bids shall remain valid for a period not less than ninety 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 bidders' responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid except as provided in 15.3 hereinafter, 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.

15.3 Deleted

15.4 Deleted

16. Bid Security

16.1 The Bidder shall furnish, as part of his Bid, a Bid security in the amount as shown in column 4 of the table of IFB for this particular work. This bid security shall be in favour of the Executive Engineer, World Bank Division No. 1, UP PWD, Lucknow; payable at Lucknow and may be in one of the following forms:

- a bank guarantee issued by a nationalized / scheduled bank located in India in the form given in Section 8; or
- Certified cheque, Bank Draft or Letter of Credit in favour of the Executive Engineer, World Bank Division No. 1, UP PWD, Lucknow; payable at Lucknow

16.2 Bank guarantees issued as surety for the bid shall be valid for 45 days beyond the latest validity of the bid.

16.3 Any bid not accompanied by an acceptable Bid Security and not secured as indicated in Sub-Clauses 16.1 and 16.2 above shall be rejected by the Employer as non-responsive.

16.4 The Bid Security of unsuccessful bidders will be returned within 28 days of the end of the bid validity period specified in Sub-Clause 15.1.

16.5 The Bid Security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.

16.6 The Bid Security may be forfeited

- (a) if the Bidder withdraws the Bid after Bid opening during the period of Bid validity;
- (b) if the Bidder does not accept the correction of the Bid Price, pursuant to Clause 27; or
- (c) in the case of a successful Bidder, if the Bidder fails within the specified time limit to
 - (i) sign the Agreement; or
 - (ii) furnish the required Performance Security.

17. Alternative Proposals by Bidders

17.1 Alternative proposals will not be considered.

D. Submission of Bids

18. Bidding through E-Tendering System:

18.1 The bidding under this contract is electronic bid submission through website <http://etender.up.nic.in>. Detailed guidelines for viewing bids and submission of online bids are given on the website. The Invitation for Bids under UPCRNDP is published on this website. Any prospective bidder can logon to this website and view the Invitation for Bids and can view the details of works for which bids are invited. The prospective bidder can submit bids online; however, the bidder is required to have enrolment/registration in the website and should have valid Digital Signature Certificate (DSC), for signing and encryption issued by the same Certifying Authority licensed under Controller of Certifying Authorities of India, in the form of smart card/e-token. The DSC can be obtained from any authorized certifying agencies. The bidder should register in the web site <http://etender.up.nic.in> using the relevant option available. Then the DSC has to be done with the e-token, after logging into the site. After this, the bidder can login the site through the secured login by entering the password of the e-token & the user id/ password chosen during registration.

After getting the bid schedules, the Bidder should go through them carefully and then submit the documents as asked, otherwise, the bid will be rejected.

18.2 The completed bid comprising of documents indicated in ITB clause 12, should be uploaded on the web site given above through e-tendering along with scanned copies of requisite documents and certificates as are mentioned in different sections in the bidding document.

18.3 The bidder shall furnish information as described in the Form of Bid on commissions or gratuities, if any, paid or to be paid to agents relating to the Bid, and to contract execution if the bidder is awarded the contract.

19. Electronic Submission of Bids:

19.1 The bidder shall submit online the requirements under qualification criteria and Technical and Financial parts. The contents of the Post Qualification and Technical and Financial bid shall be as specified in clause 12 of the ITB. All the documents are required to be signed digitally by the bidder. After electronic on line bid submission, the system generates a unique bid identification number which is time stamped. This shall be treated as acknowledgement of bid submission.

20. Deadline for Submission of the Bids

20.1 Bids must be submitted by the bidders online no later than **28th Jan., 2015, 17:00 Hrs.**

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

21. Late Bids:

21.1 The electronic bidding system would not allow any late submission of bids after due date and time as per server time.

22. Modification and Withdrawal of Bids

22.1 Bidders may modify their bids online before the deadline prescribed in Clause 20.

22.2 For modification of bids, the bidder need not make any additional payment towards the cost of tender document. For bid modification and consequential re-submission, the bidder is not required

to withdraw his bid submitted earlier. The last modified bid submitted by the bidder within the bid submission time shall be considered as the bid. For this purpose, modification/withdrawal by other means will not be accepted. In on line system of bid submission, the modification and consequential re-submission of bids is allowed any number of times. The bidders may withdraw his bid by uploading their request before the deadline for submission of bids, **however, if the bid is withdrawn, the re-submission of the bid is not allowed.**

- 22.3** No bid may be modified after the deadline for submission of Bids.
- 22.4** 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 is not allowed in the e-procurement system. If a bidder does the same through any other medium, then it may result in the forfeiture of the Bid security pursuant to Clause 16.
- 22.5** Bidders may only offer discounts to, or otherwise modify the prices of their bid by submitting their bid modification in accordance with this clause.

E. Bid Opening and Evaluation

23. Bid Opening

- 23.1** The Employer will open all the Bids received (except those whose original documents were not received upto specified time), including modifications made pursuant to Clause 22, online at **16:00 Hrs on 30th Jan., 2015** at the Office of the Chief Engineer, World Bank Projects (Roads), UP PWD, Lucknow, Uttar Pradesh (India). In the event of the specified date of Bid opening 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 amount of bid security, cost of bid documents, and validity of the bid shall be scrutinized. Thereafter, the bidders' name and such other details as the Employer may consider appropriate, will be notified as Technical bid opening summary by the authority inviting bids at the on line opening. A separate electronic summary of the opening is generated and kept online.
- 23.3** The Bidders' names, the Bid prices, the total amount of each Bid and of any alternative Bid (if alternatives have been requested or permitted), any discounts, Bid modifications and withdrawals, the presence or absence of Bid security, and such other details as the Employer may consider appropriate, will be recorded as bid opening summary and uploaded by the Employer on the portal. No bid shall be rejected at bid opening. Any Bid price, which is not declared and recorded, will not be taken into account in Bid Evaluation.
- 23.4** The Employer will also prepare minutes of the Bid opening, including the information disclosed in accordance with Clause 22.3 of ITB and upload the same for viewing online.

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 persons not officially concerned with such process until the award to the successful Bidder has been announced. **Any effort by a Bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his Bid.**

25. Clarification of Bids

- 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 the 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 its bid from the time of the bid opening to the time the contract is awarded. Bidder may provide additional information in response to Employer's request for clarifications and it shall submit such clarification or information in writing..

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 Prior to the detailed evaluation of Bids, the Employer will determine whether each Bid (a) meets the eligibility criteria defined in Clause 3; (b) has been properly signed; (c) is accompanied by the required securities and; (d) is substantially responsive to the requirements of the Bidding documents.

26.2 A substantially responsive Bid is one which conforms to all the terms, conditions, and specifications of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the Bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

26.3 If a Bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

27. Correction of Errors

27.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

- (a) the system automatically calculates the total amount from the unit rates and the quantities and the system also automatically populates the amount in words from the amount in figures and therefore there will be no room for discrepancy. However, if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;
- (b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- (c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

27.2 The amount stated in the Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount the Bid will be rejected, and the Bid security may be forfeited in accordance with Sub-Clause 16.6 (b).

28. Deleted

29. Evaluation and Comparison of Bids

- 29.1** The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause 26.
- 29.2** In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:
- (a) making any correction for errors pursuant to Clause 27; or
 - (b) making an appropriate adjustments for any other acceptable variations, deviations; and
 - (c) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Sub Clause 22.5.
- 29.3** The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in Bid evaluation.
- 29.4** The estimated effect of the price adjustment conditions under Clause 47 of the *Conditions of Contract*, during the period of implementation of the Contract, will not be taken into account in Bid evaluation.
- 29.5** If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract, the 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 34 be increased at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract. The amount for additional Bank Guarantee for unbalanced bid shall be calculated as follows :

If the rates quoted by the bidder are lower or higher by more than 10% of the Standard Schedule of Rates as on 28 days prior to the deadline for submission of bid then the bidder will be required to furnish the additional performance security equal to the percentage by which the rates quoted are lower or higher minus 10%. For each unbalanced item of works, the additional amount would be thus calculated.

30. Deleted

F. Award of Contract

31. Award Criteria

- 31.1** 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 provisions of Clause 3, and (b) qualified in accordance with the provisions of Clause 4.
- 31.2** The lowest evaluated Bid Price will be determined taking into account any discounts offered by the bidders.

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

- 32.1** Notwithstanding Clause 31, 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.

33. Notification of Award and Signing of Agreement

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

33.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 34.

33.3 The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and kept ready for signature of the successful bidder in the office of employer within 28 days following the notification of award along with the Letter of Acceptance..

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

34. Performance Security

34.1 Within 28 days of receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in any of the forms given below in accordance with Clause 52 of Contract Conditions plus additional security for unbalanced Bids in accordance with Clause 29.5 of ITB:

- a bank guarantee in the form given in Section 8; or
- Certified cheque, Bank Draft or Letter of Credit in favour of the **Executive Engineer, World Bank Division No. 1, UP PWD, Lucknow; payable at Lucknow**

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

34.3 Failure of the successful bidder to comply with the requirements of sub-clause 34.1 shall constitute a breach of contract, cause for annulment of the award, forfeiture of the bid security, and any such other remedy the Employer may take under the contract, and the Employer may resort to awarding the contract to the next ranked bidder.

35. Advance Payment and Security

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

36. Adjudicator

36.1 The Employer proposes that *Mr Sushil Kumar*, Retired E-in-C, UPPWD be appointed as Adjudicator under the Contract, at a daily fee of INR 3000/- plus reimbursable expenses. If the Bidder disagrees with this proposal, the Bidder should so state in the Bid. If in the Letter of Acceptance, the Employer has not agreed on the appointment of the Adjudicator, the Adjudicator shall be appointed by The President of Indian Roads Congress at the request of either party.

37. Fraud and Corruption

37.1 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), bidders, suppliers, contractors and their agents (whether declared or not), sub-contractors, sub-consultants, service providers or suppliers, and any personnel thereof, observe the highest standard of ethics during the procurement and execution of Bank-financed contracts¹. In pursuance of this policy, the Bank:

- (a) defines, for the purposes of this provision, the terms set forth below as follows:
- (i) "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party²;
 - (ii) "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation³;
 - (iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party⁴;
 - (iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party⁵;
 - (v) "obstructive practice" is
 - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or
 - (bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 37.1 (e) below.
- (b) will reject a proposal for award if it determines that the bidder recommended for award, or any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question;

¹ In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

² For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the procurement process or contract execution. In this context, "public official" includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

³ For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the procurement process or contract execution; and the "act or omission" is intended to influence the procurement process or contract execution.

⁴ For the purpose of this sub-paragraph, "parties" refers to participants in the procurement process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish bid prices at artificial, non competitive levels, or are privy to each other's bid prices or other conditions.

⁵ For the purpose of this sub-paragraph, "party" refers to a participant in the procurement process or contract execution.

- (c) will cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive or obstructive practices during the procurement or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- (d) will sanction a firm or individual, at any time, in accordance with prevailing Bank's sanctions procedures⁶, including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated⁷ sub-contractor, consultant, supplier or services provider of an otherwise eligible firm being awarded a Bank-financed contract;
- (e) will require that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers and contractors, and their sub-contractors, agents, personnel, consultants, service providers or suppliers, to permit the Bank to inspect all accounts, records and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Bank; and

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

⁶ A firm or individual may be declared ineligible to be awarded a Bank financed contract upon: (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including inter alia cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceeding. See footnote 14 and paragraph 8 of Appendix 1 of these Guidelines.

⁷ A nominated sub-contractor, consultant, manufacturer or supplier, or service provider (different names are used depending on the particular bidding document) is one which has either been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

Section 2: Forms of Bid, Qualification Information, Letter of Acceptance and Agreement

Table of Forms:

- **CONTRACTOR'S BID**
- **QUALIFICATION INFORMATION**
- **SAMPLE FORMAT OF EVIDENCE OF ACCESS TO
OR AVAILABILITY OF CREDIT FACILITY**
- **LETTER OF ACCEPTANCE**
- **NOTICE TO PROCEED WITH THE WORK**
- **AGREEMENT FORM**

Contractor’s Bid

Description of the Works: Upgradation and Maintenance of Garautha-Chirgaon Section of SH-42 from
118.600 to km 167.745

Date:.....
Bid No.:

To: The Chief Engineer (World Bank Projects), UPPWD, Lucknow (the Employer)
Address: Nirman Bhawan, 96, Mahatma Gandhi Marg, Lucknow, 226001, Uttar Pradesh

GENTLEMEN,

Having examined the Bidding Documents, including addenda, we offer to execute the works described above in accordance with the Conditions of Contract, Specifications, Drawings and Bill of Quantities accompanying this Bid for the Contract Price of _____[in figures]
(_____)[in words]⁸

The advance payment required is: Rupees _____.

We accept the appointment of _____ as the Adjudicator.

[or]

We do not accept the appointment of _____ as the Adjudicator, and propose instead that _____ be appointed as Adjudicator, whose daily fees and biographical data are attached.

This Bid and your written acceptance of it shall constitute a binding Contract between us. We understand that you are not bound to accept the lowest or any Bid you receive.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery or any collusive arrangements with competitors.

We also undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely “Prevention of Corruption Act 1988”.

Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Name and address of agent	Amount and Currency	Purpose of Commission or gratuity
_____	_____	_____
_____	_____	_____
_____	_____	_____

⁸ To be filled by the Bidder, together with his particulars and date of submission at the bottom of the Form of Bid,

(if none, state “none”)

We hereby confirm that this Bid complies with the Eligibility, Bid validity and Bid Security as required by the Bidding Documents.

Yours faithfully,

Authorized Signature:

Name and Title of Signatory : _____

Name of Bidder : _____

Address : _____

Qualification Information

Notes on Form of Qualification Information

The information is to be filled in by the bidder in the following pages will be used for purposes of post-qualification as provided for in Clause 4 of the Instructions to Bidders. This information will not be incorporated in the Contract. Attach additional pages as necessary.

1. Individual Bidders Qualification

- 1.1 (i) Constitution or **legal status** of Bidder *[attach copy]*
 (ii) Place of registration:
 (iii) Principal place of business:
 (iv) Power of attorney of signatory of Bid *[attach]*
- 1.2 Total **annual volume of civil engineering construction** Year (INR In millions)
work executed and payments received in the last five 2009 -2010
 years preceding the year in which bids are invited. (*Attach* 2010 -2011
certificate from Chartered Accountant) 2011 -2012
 2012 -2013
 2013 -2014

- 1.3.1 **Work performed as prime Contractor** (*in the same name and style*) on construction works of a similar nature and volume over the last five years⁹ i.e. 2009-10 to 2013-14. [*Attach certificate from the Engineer-in-charge.*]

Project Name	Name of Employer	Description of work	Contract No.	Value of contract	Date of Issue of Work Order	Stipulated Date of Completion	Actual Date of Completion	Remarks explaining reasons for Delay, if any

- 1.3.2 **Quantities of work executed as prime contractor** (*in the same name and style*) in the last five years:¹⁰

Year	Name of the Work	Name of Employer*	Quantity of work performed(cum) @				Remarks* (indicate contract Ref)
			Earthwork in excavation, embankment & sub-grades for Road constructions	Granular Sub-base, WMM / WBM	Bituminous work with DBM, BM, SDBC & BC work	RCC above M 20 grade	
2009-2010							
2010-2011							
2011-2012							
2012-2013							
2013-2014							

[@ The items or work for which date is requested should tally with that specified in ITB 4.5A(c)

* Attach certificates from Engineer in-charge]

⁹ Immediately preceding the financial year in which bids are received.

¹⁰ Immediately preceding the financial year in which bids are received.

1.7 Proposed sub-contractors and firms: Refer to ITB Clause 4.3(j) and Clause 7 of the Conditions of Contract.

Sections of the Works	Value of subcontract	% of Bid price	Sub-contractor (name and address)	Experience in similar work

Note :*The capability of the sub-Contractor will also be assessed (on the same lines as for the main Contractor) before according approval to him.*

1.8 Financial reports or the past five years (from 2009-10 to 2013-14): Balance sheets, profit and loss statements, auditors’ reports, etc. List below and attach copies.

.....

1.9

Financial Resources: Evidence of access to financial resources to meet the qualification requirements[*cash in hand, lines of credit, etc.*] List below and attach copies of support documents. [*Attach a certificate from Bank in the format at the end of this section. Other. Certificate, will not be accepted*]

.....

1.10 **Banker’s References:** Name, address, and telephone, telex, and facsimile numbers of banks that may provide references if contacted by the Employer.

.....

1.11 **Information on current litigation in which the Bidder is involved.**

Name of Other party(ies)	Employer	Cause of dispute	Litigation where (Court or Arbitration)	Amount involved (INR)	Contract Price (INR)	Remarks regarding present status
1	2	3	4	5	6	7

1.12 **Proposed work method and schedule:** The bidder should attach descriptions, drawings, and charts as necessary, to comply with the requirements of the bidding documents. [*Refer ITB Clause 4. 1 and 4.3(k)*]

1.13 **Statement of Compliance under the requirements of Sub-Clause 3.2 of ITB.**

1.14 **Additional Requirements :** Bidders should provide any additional information required to fulfill the requirement of Clause 4 of ITB.

**SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT
FACILITIES-
CLAUSE 4.5 [B] [c] OF ITB**

BANK CERTIFICATE

This is to certify that M/s.....is a reputed company with a good financial standing.
If the contract for the work, namely.....[funded by the World Bank] is
awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of INR
..... to meet their working capital requirements for executing the above contract.

---Sd.---

Name of Bank

Senior Bank Manager

Address of the Bank

Form.....

(Name of the Project)

(Declaration regarding customs/ excise duty exemption for materials/
construction equipment bought for the work)

(Bidder's Name and Address)

To:
(Name of the Employer &
address)

Dear Sir:

Re: [Name of Work].....
Certificate for Import/Procurement of Goods/Construction Equipment

1. We confirm that we are solely responsible for obtaining customs/excise duty waivers which we have considered in our bid and in case of failure to receive such waivers for reasons whatsoever, the employer will not compensate us.
2. We are furnishing below the information required by the Employer for issue of the necessary certificates in terms of the Government of India Central Excise Notification No.108/95 and Customs Notification No. 85/99 and/or latest applicable rule /regulation/Government Orders.
3. The materials for which certificates are required are as under:

Items	Make/ Brand Name	Capacity [where applicable]	Quantity	Value	State whether it will be procured locally or imported [if so from which country]	Remarks regarding justification for the quantity and their usage in works.
Materials						
[a] Bitumen						
[b] Cement						
[c] Steel						
[d] Others						

4. We agree that no modification to the above list is permitted after bids are opened.
5. We agree that the certificate will be issued only to the extent considered reasonable by the Employer for the work, based on the Bill of Quantities and the construction programme and methodology as furnished by us alongwith the bid.
6. We confirm that the above materials will be exclusively used for the construction of the above work and the materials will not be sold or otherwise disposed of in any manner for a period of five years from the date of acquisition.

Date: _____

(Signature) _____

Place: _____

(Printed Name) _____*(Designation)* _____*(Common Seal)* _____

[This certificate will be issued within 60 days of signing of contract and no subsequent changes will be permitted.]

Letter of Acceptance*[letterhead paper of the Employer]*_____ *[insert date]*Identification No and Title of Contract: *[insert identification number and title of the Contract]*To: *[insert name and address of the Contractor]*

This is to notify you that your Bid dated _____ *[insert date]* for execution of the _____ *[insert name of the Contract and identification number, as given in the Instructions to Bidders]* for the Contract Price of Rupees *[insert amount in numbers and words]* as corrected and modified¹¹ in accordance with the Instructions to Bidders is hereby accepted by our Agency.

[insert one of the following (a) or (b) options]

- (a) We accept that *[insert name proposed by bidder]* be appointed as the Adjudicator.¹²
- (b) We do not accept that *[insert name proposed by bidder]* be appointed as Adjudicator, and by sending a copy of this Letter of Acceptance to *[insert name of the Appointing Authority]*, we are hereby requesting *[insert name]*, the Appointing Authority, to appoint the Adjudicator in accordance with ITB Clause 37.1.¹³

We note that as per your bid, you do not intend to subcontract any component of work.

[OR]

We note that as per your bid, you propose to employ M/s. as sub-contractor for executing

[Delete whatever is inapplicable]

You are hereby requested to furnish Performance Security, plus additional security for unbalanced bids in terms of ITB clause 30.6, in the form detailed in ITB Clause 35.1 for an amount of INR ____ within 21 days of the receipt of this letter of acceptance, valid upto 28 days from the date of expiry of Defects Liability Period i.e. upto and sign the contract, failing which action as stated in ITB Clause 34.3 will be taken.

We have reviewed the construction methodology submitted by you alongwith the bid in response to ITB Clause 4.3[k] and our comments are given in the attachment. You are requested to submit a revised Program including environmental management plan as per Clause 27 of Conditions of Contract within 14 days of receipt of this letter of acceptance.

Yours faithfully,

Authorized Signature.....
 Name and Title of Signatory.....
 Name of Agency.....

¹¹ Delete "corrected and" or "and modified" if not applicable. See Notes on Standard Form of Agreement, next page.

¹² To be used only if the Contractor disagrees in the Bid with the Adjudicator proposed by the Employer in the Instructions to Bidders, and has accordingly offered another candidate.

¹³ To be used only if the Contractor disagrees in the Bid with the Adjudicator proposed by the Employer in the ITB, has accordingly offered another candidate, and the Employer does not accept the counterproposal.

Issue of Notice to proceed with the work

(letterhead of the Employer)

_____ (date)

To

_____ (name and address of the Contractor)

Dear Sirs:

Pursuant to your furnishing the requisite security as stipulated in ITB clause 34.1, construction methodology as stated in letter of acceptance and signing of the contract agreement for the construction of _____ @ a Bid Price of INR _____, you are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully,

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

Agreement Form

This Agreement, made the _____ day of _____ 20__ between _____ [insert name and address of Employer] (hereinafter called “the Employer”) and _____ [insert name and address of Contractor] (hereinafter called “the Contractor”) of the other part.

Whereas the Employer is desirous that the Contractor execute _____ [insert name and identification number of Contract] (hereinafter called “the Works”) and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein at a contract price of INR

Now this Agreement witnesseth as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the 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.
3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects wherein 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.
4. The following documents shall be deemed to form and be read and construed as part of this agreement, viz.:
 - (i) **Letter of Acceptance;**
 - (ii) **Notice to proceed with the works;**
 - (iii) **Contractor’s Bid;**
 - (iv) **Special Conditions of Contract;**
 - (v) **General Conditions of Contract;**
 - (vi) **Specifications;**
 - (vii) **Drawings;**
 - (viii) **Bill of Quantities; and**
 - (ix) **Any other document listed in the SCC as forming part of the contract.**

In Witness whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of [Witness entity] _____
was hereunto affixed in the presence of: _____

Signed, Sealed, and Delivered by the said _____
in the presence of: _____

Binding Signature of Employer _____ *[signature of an authorized representative of the Employer]*

Binding Signature of Contractor _____ *[signature of an authorized representative of the Contractor]*

Section 3: General Conditions of Contract

Table of Clauses

A. General	39
1. Definitions.....	39
2. Interpretation.....	40
3. Language and Law	41
4. Engineer's Decisions	41
5. Delegation	41
6. Communications	41
7. Subcontracting	41
8. Other Contractors.....	42
9. Personnel.....	42
Compliance with Labour Regulations	43
10. Employer's and Contractor's Risks	43
11. Employer's Risks	43
12. Contractor's Risks.....	44
13. Insurance	44
14. Site Investigation Reports	44
15. Deleted	44
16. Contractor to Construct the Works	44
Protection of Environment.....	45
17. The Works to Be Completed by the Intended Completion Date	45
18. Approval by the Engineer	45
19. Safety	45
20. Discoveries.....	45
21. Possession of the Site.....	45
22. Access to the Site	45
23. Instructions, Inspections and Audits	45
24. Disputes.....	46
25. Procedure for Disputes.....	46
26. Replacement of Adjudicator	46
B. Time Control	46
27. Program.....	46
28. Extension of the Intended Completion Date.....	47
29. Acceleration	47
30. Delays Ordered by the Engineer	47
31. Management Meetings.....	47
32. Early Warning.....	48
C. Quality Control.....	48
33. Quality Assurance	48
34. Tests	48
35. Identifying and Correction of Defects	48
36. Uncorrected Defects.....	48
D. Cost Control	49
37. Bill of Quantities.....	49
38. Changes in the Quantities	49
39. Variations.....	49
40. Payments for Variations.....	49
41. Cash Flow Forecasts	50
42. Payment Certificates	50

43. Payments	50
44. Compensation Events.....	51
45. Tax	52
46. Currencies	52
47. Price Adjustment.....	52
48. Retention	54
49. Liquidated Damages	54
50. Bonus	54
51. Advance Payment	54
Secured Advance	55
52. Securities.....	55
53. Dayworks	55
54. Cost of Repairs.....	55
E. Finishing the Contract	55
55. Completion.....	55
56. Taking Over	55
57. Final Account.....	55
58. Operating and Maintenance Manuals	55
59. Termination.....	55
60. Corrupt or Fraudulent Practices	56
61. Payment upon Termination.....	58
62. Property.....	58
63. Release from Performance.....	58
64. Suspension of World Bank Loan or Credit.....	58

General Conditions of Contract

A. General

1. Definitions

- 1.1 Boldface type is used to identify defined terms.
- (a) The **Adjudicator** is the person appointed jointly by the Employer and the Contractor to resolve disputes in the first instance, as provided for in GCC Clauses 24 and 25 hereunder.
 - (b) **Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid.
 - (c) **Compensation Events** are those defined in GCC Clause 44 hereunder.
 - (d) The **Completion Date** is the date of completion of the Works as certified by the Engineer, in accordance with GCC Sub-Clause 55.1.
 - (e) 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 GCC Clause 2.3 below.
 - (f) The **Contractor** is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer.
 - (g) The **Contractor's Bid** is the completed bidding document submitted by the Contractor to the Employer.
 - (h) The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.
 - (i) **Days** are calendar days; months are calendar months.
 - (j) A **Defect** is any part of the Works not completed in accordance with the Contract.
 - (k) The **Defects Liability Certificate** is the certificate issued by Engineer upon correction of defects by the Contractor.
 - (l) The **Defects Liability Period** is the period **named in the SCC** Sub-Clause 35.1 and calculated from the Completion Date.
 - (m) **Drawings** include calculations and other information provided or approved by the Engineer for the execution of the Contract.
 - (n) The **Employer** is the party who employs the Contractor to carry out the Works, **as specified in the SCC**.
 - (o) **Equipment** is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.
 - (p) The **Initial Contract Price** is the Contract Price listed in the Employer's Letter of Acceptance.

- (q) The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is **specified in the SCC**. The Intended Completion Date may be revised only by the Engineer by issuing an extension of time or an acceleration order.
- (r) **Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works.
- (s) **Plant** is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.
- (t) The **Engineer** is the person **named in the SCC** (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.
- (u) **SCC** means Special Conditions of Contract
- (v) The **Site** is the area **defined as such in the SCC**.
- (w) **Site Investigation Reports** are those that were included in the bidding documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.
- (x) **Specification** means the Specification of the Works included in the Contract and any modification or addition made or approved by the Engineer.
- (y) The **Start Date** is **given in the SCC**. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.
- (z) A **Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.
- (aa) **Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.
- (bb) A **Variation** is an instruction given by the Engineer which varies the Works.
- (cc) The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, **as defined in the SCC**.

2. Interpretation

- 2.1 In interpreting these GCC, 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 shall provide instructions clarifying queries about these GCC.
- 2.2 If sectional completion is **specified in the SCC**, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).
- 2.3 The documents forming the Contract shall be interpreted in the following order of priority:

- (a) Agreement,
 - (b) Letter of Acceptance,
 - (c) Contractor's Bid,
 - (d) Special Conditions of Contract,
 - (e) General Conditions of Contract,
 - (f) Specifications,
 - (g) Drawings,
 - (h) Priced bill of Quantities, and
 - (i) any other document **listed in the SCC** as forming part of the Contract.
- 3. Language and Law**
- 3.1 The language of the Contract and the law governing the Contract are **stated in the SCC**.
- 3.2 Salient features of major labour and other laws that are applicable to construction industry in India are given as Appendix 1 to these General Conditions of Contract.
- 4. Engineer's Decisions**
- 4.1 Except where otherwise specifically stated, the Engineer shall decide contractual matters between the Employer and the Contractor in the role representing the Employer.
- However, if the Engineer is required, under the rules and regulations and orders of the Employer, to obtain approval of some other authorities for specific actions, he will so obtain the approval. Provided further that any requisite approval shall be deemed to have been given by the Employer for any such authority exercised by the Engineer.
- 5. Delegation**
- 5.1 The Engineer may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.
- 6. Communications**
- 6.1 Communications between parties that are referred to in the Conditions shall be effective only when given in writing. A notice shall be effective only when it is delivered. All oral instructions shall be confirmed in writing in seven working days.
- 7. Subcontracting**
- 7.1 The Contractor may subcontract with the approval of the Engineer, but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.
- 7.2 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 possesses 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.

- 7.3 If payments are proposed to be made directly to that sub-contractor, this should be subject to specific authorization by the prime contractor so that his arrangement does not alter the contractor's liability or obligations under the contract.
- 7.4 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 already named in the contract;
 - (b) the provision for labour, or labour component, and,
 - (c) the purchase of materials which are in accordance with the standards specified in the contract.
- 8. Other Contractors**
- 8.1 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 SCC**. 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 key personnel named in the Schedule of Key Personnel, as **referred to in the SCC**, to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer shall approve any proposed replacement of key personnel only if their relevant qualifications and abilities are substantially equal to or better than those of the personnel listed in the Schedule.
- 9.2 The Engineer may require the Contractor to remove from the Site of Works, a member of the Contractor's staff or his work force, who:
- (a) persists in any misconduct or lack of care,
 - (b) carries out duties incompetently or negligently,
 - (c) fails to conform with any provisions of the Contract, or
 - (d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment.
- The contractor shall ensure that the person leaves the site within seven days and has no further connection with the work in the contract. The Contractor shall appoint a suitable replacement within 28 days or earlier as may be agreed to between the Engineer and the Contractor.
- 9.3 The Contractor shall not employ any retired Gazetted officer who has either not completed two years after the date of retirement or has not obtained permission from the Government authorities for employment with the Contractor¹⁴.
- 9.4 The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport. The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time

¹⁴Based on Government Directives.

- employed by the Contractor on the Site and such other information as the Engineer may require.
- Compliance with Labour Regulations**
- 9.5 During continuance 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 laws (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law prevailing on the Base Date either by the State or the Central Government or the local authority. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contraventions 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 his amount of performance security. 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.
- 9.6 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.
- 9.7 The Contractor shall duly comply with the provisions of the Apprentices Act 1961 (III of 1961) and the rules made there under, and comply, failure or neglect to shall be subject to all liabilities and penalties provided in the said Act and Rules.
- 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 From the Start Date until the Defects Liability Certificate has been issued, the following are Employer's risks:
- (a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to
 - (i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or
 - (ii) negligence, breach of statutory duty, or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.
 - (b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in the Employer's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

-
- 12. Contractor's Risks**
- 12.1 From the Starting Date until the Defects Liability Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Employer's risks are Contractor's risks.
- 13. Insurance**
- 13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles **stated in the SCC** 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 Policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
- 13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.
- 13.4 Alterations to the terms of an insurance shall not be made without the approval of the Engineer.
- 13.5 Both parties shall comply with any conditions of the insurance policies.
- 14. Site Investigation Reports**
- 14.1 The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports **referred to in the SCC**, supplemented by any information available to the Bidder.
- 15. deleted.**
- 16. Contractor to Construct the Works**
- 16.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings and as per instructions of Engineer.
- 16.2.1 The Contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other cause arising as a consequence of his methods of operation.

Protection of Environment	16.2.2 During continuance of the contract, the contractor and his sub-contractors shall abide at all times by all existing enactments on environmental protection and rules made thereunder, regulations, notifications and by-laws of the State or Central Government, or local authorities and other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority. Salient features of the major laws are given in the attachment, Appendix 1 to there General conditions of contract.
17. The Works to Be Completed by the Intended Completion Date	17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.
18. Approval by the Engineer	18.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Engineer, who is to approve them if they comply with the Specifications and Drawings. 18.2 The Contractor shall be responsible for design of Temporary Works. 18.3 The Engineer's approval shall not alter the Contractor's responsibility for design of the Temporary Works. 18.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required. 18.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Engineer before this use.
19. Safety	19.1 The Contractor shall be responsible for the safety of all activities on the Site.
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 possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the SCC , the Employer shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.
22. Access to the Site	22.1 The Contractor shall allow the Engineer and any person authorized by the Engineer 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.
23. Instructions, Inspections and Audits	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 Bank and/or persons appointed by the Bank to inspect the Site and/or the accounts and records of the Contractor and its sub-contractors relating to the performance of the Contract, and to have such accounts and records audited by auditors appointed by the Bank if required by the Bank. The Contractor's attention is drawn to Sub-Clause 60.1 [Corrupt or Fraudulent Practices] which provides, inter alia, that acts

intended to materially impede the exercise of the Bank's inspection and audit rights provided for under Sub-Clause 23.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Procurement Guidelines).

24. Disputes

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

25. Procedure for Disputes

25.1 The Adjudicator should be in position before "notice to proceed with work" is issued to the contractor and an agreement should be signed with the Adjudicator jointly by Employer/Contractor in the form attached – Appendix 3

25.2 The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.

25.3 The Adjudicator shall be paid daily at the **rate specified in the ITB and SCC**, together with reimbursable expenses of the types specified in the SCC, and the cost shall be divided equally between the Employer and the Contractor. Whatever decision is reached by the Adjudicator, either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision shall be final and binding.

25.4 The arbitration shall be conducted in accordance with the arbitration procedures published by the institution named and in the place specified **in the SCC**.

The Arbitrators shall entertain only those issues which have been earlier referred to the Adjudicator and either party is dissatisfied with the decision given by the Adjudicator.

26. Replacement of Adjudicator

26.1 Should the Adjudicator resign or die, or should the Employer and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator shall be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority **designated in the SCC** at the request of either party, within 14 days of receipt of such request.

B. Time Control

27. Program

27.1 Within the time **stated in the SCC**, after the date of the Letter of Acceptance, the Contractor shall submit to the Engineer for approval, a revised Program (*revising the program given along with bid earlier*) including Environmental Management Plan showing the general methods, arrangements, order, and timing for all the activities in the Works.

27.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.

- 27.3 The Contractor shall submit to the Engineer for approval an updated Program at intervals no longer than the period **stated in the SCC**. If the Contractor does not submit an updated Program within this period, the Engineer may withhold the amount **stated in the SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted.
- 27.4 The Engineer's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Engineer again at any time. A revised Program shall show the effect of Variations and Compensation Events.
- 27.5 The Contractor shall furnish monthly progress reports as directed by the Engineer by 7th of the succeeding month. The report shall include charts and detailed descriptions of the progress of identified activities, photographs showing status of progress at site, records of Contractor's personnel and equipment, Quality Assurance documents, comparison of actual and planned progress as per program.
- 28. Extension of the Intended Completion Date**
- 28.1 The Engineer shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.
- 28.2 The Engineer shall decide whether and by how much to extend the Intended Completion Date within 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 give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.
- 29. Acceleration**
- 29.1 When the Employer wants the Contractor to finish before the Intended Completion Date, the Engineer shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Employer accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Employer and the Contractor.
- 29.2 If the Contractor's priced proposals for an acceleration are accepted by the Employer, they are incorporated in the Contract Price and treated as a Variation.
- 30. Delays Ordered by the Engineer**
- 30.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works.
- 31. Management Meetings**
- 31.1 Either the Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.
- 31.2 The Engineer shall record the business of management meetings and provide copies of the record to those attending the meeting and to the Employer. 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 who attended the meeting.

- 32. Early Warning**
- 32.1 The Contractor shall warn the Engineer at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Engineer may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.
- 32.2 The Contractor shall cooperate with the Engineer in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer.

C. Quality Control

- 33. Quality Assurance**
- 33.1 The Contractor shall institute Quality Assurance (QA) and Quality Control (QC) systems in accordance with Quality Assurance Plan to demonstrate compliance with the requirements of the Contract as approved by the Engineer.
- 33.2 Compliance with the QA/QC systems shall not relieve the Contractor of any of his duties obligations or responsibilities under the Contract.
- 34. Tests**
- 34.1 The Contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel, consumables, instruments, labour, materials, and suitably qualified and experienced staff, as are necessary to carry out the specified tests efficiently.
- 34.2 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. If there is no Defect, the test shall be a Compensation Event.
- 35. Identifying and Correction of Defects**
- 35.1 The Engineer shall check the Contractor's work and notify the Contractor of any Defects that are found, specifying a time by which it should be corrected. 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.
- 35.2 The contractor shall permit the Employer's Technical auditor to check the contractor's work and notify the Engineer and Contractor of any defects that are found. Such a check shall not affect the Contractor's or the Engineer's responsibility as defined in the Contract Agreement.
- 35.3 The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is **defined in the SCC**. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 35.4 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Engineer's notice.
- 36. Uncorrected Defects**
- 36.1 If the Contractor has not corrected a Defect within the time specified in the Engineer's notice, the Engineer shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

Note: 1. Where in certain cases, the technical specifications provide for acceptance of works within specified tolerance limits at reduced rates, Engineer will certify payments to Contractor accordingly.

2. Where the failure to correct a particular defect within the specified time is considered as a fundamental breach of contract a notice should be given to the contractor as stated in GCC59.2(e)

D. Cost Control

37. Bill of Quantities

37.1 The Bill of Quantities shall contain items for the construction, installation, testing, and commissioning work to be done by the Contractor.

37.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate specified in the Bill of Quantities for each item.

38. Changes in the Quantities

38.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Engineer shall adjust the rate to allow for the change.

(a) If the quantity of work executed exceeds the quantity of the item in BOQ beyond the higher specified limit the Engineer shall fix the rate to be applied for the additional quantity of the work executed.

(b) If the quantity of work executed less than the quantity of the item in BOQ lesser than the lower specified limit, the Engineer shall fix the rate to be applied for whole of the quantity of the work so executed.

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

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

39. Variations

39.1 All Variations shall be included in updated Programs produced by the Contractor.

40. Payments for Variations

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

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

40.3 If the Contractor's quotation is unreasonable, [*or if contractor fails to provide the Engineer with a quotation within a reasonable time specified by Engineer in accordance with GCC40.1*] the Engineer may order the

Variation and make a change to the Contract Price, which shall be based on the Engineer's own forecast of the effects of the Variation on the Contractor's costs.

- 40.4 If the Engineer decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.
- 40.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.
- 41. Cash Flow Forecasts**
- 41.1 When the Program is updated, the Contractor shall provide the Engineer with an updated cash flow forecast. The cash flow forecast shall be in Indian Rupees.
- 42. Payment Certificates**
- 42.1 The Contractor shall submit to the Engineer monthly statements of the estimated value of the work executed less the cumulative amount certified previously along with details of measurement of the quantity of works executed in a tabular form approved by the Engineer.
- 42.2 The Engineer shall check the details given in the Contractor's monthly statement and within 14 days certify the amounts to be paid to the Contractor after taking into account any credit or debit for the month in question in respect of materials for the works in the relevant amount and under conditions set forth in GCC Sub-Clause 51.4 [*Secured Advance*]
- 42.3 The value of work executed shall be determined by the Engineer after due check measurement of the quantities claimed as executed by the contractor.
- 42.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.
- 42.5 The value of work executed shall include the valuation of Variations and Compensation Events.
- 42.6 The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.
- 43. Payments**
- 43.1 Payments shall be adjusted for deductions for advance payments, retention other recoveries in terms of contract & taxes to be deducted at source [TDS] as per applicable law.. The Employer shall pay the Contractor the amounts certified by the Engineer within 28 days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at 6% per annum.
- 43.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 43.3 Items of the Works for which no rate or price has been entered in shall not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

44. Compensation Events

- 44.1 The following shall be Compensation Events:
- (a) The Employer does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 21.1.
 - (b) The Employer modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.
 - (c) The Engineer orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.
 - (d) The Engineer instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.
 - (e) The Engineer unreasonably does not approve a subcontract to be let.
 - (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.
 - (g) The Engineer gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.
 - (h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
 - (i) The advance payment is delayed.
 - (j) The effects on the Contractor of any of the Employer's Risks.
 - (k) The Engineer unreasonably delays issuing a Certificate of Completion.
 - (l) Other compensation events, listed in SCC or mentioned in contract.
- 44.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Engineer shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.
- 44.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Engineer, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Engineer shall adjust the Contract Price based on the Engineer's own forecast. The Engineer shall assume that the Contractor shall react competently and promptly to the event.
- 44.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Engineer.

- 45. Tax** 45.1 The rates quoted by the Contractor shall be deemed to be inclusive of the Vat, sales and other taxes 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 [TDS] as per applicable law.
- 46. Currencies** 46.1 All payments shall be made in Indian Rupees.
- 47. Price Adjustment** 47.1 Contract price shall be adjusted for increase or decrease in rates and price of labour, materials, fuels and lubricants and other inputs to the works in accordance with the principles and procedures outlined below. A table of adjustment data is included in the SCC which indicates the coefficients of various inputs and the sources of indices for various schedules of BOQ. If the SCC does not include a table of adjustment data this sub clause shall not apply and there shall be no price adjustment.

- (a) The price adjustment according to sub para (d) below, shall apply for the work done from the start date given in the SCC up to the end of the Intended Completion Date. If there is delay in completion beyond such date for reasons attributable to the contractor, the Price Adjustment for the work carried out during such period, for reasons attributable to the Contractor, shall be regulated by sub-para (g) below.
- (b) The Contract Price shall be adjusted to take account of any increase or decrease in cost after the base date, which affect the Contractor in performance of obligations under the Contract.
- (c) The total value (R) of the work done during the specified period [GCC 42.1] shall be as under:

$$R = \text{SUM} (R_{S1} + R_{S2} + R_{S3} + \dots + R_{Sn}),$$

Where,

' R_{sn} ' is the value of work done during the specified period to which the price adjustment shall be applied for the relevant schedule of Bill of Quantities (BOQ) specified in S.C.C during the specified period, and represented as under:

$R_{sn} = (V_{sn} + S_{sn})$ minus (amount of secured advance recovered in the same period + value of works executed under variations for which price adjustments will be worked separately based on terms mutually agreed between the Engineer and the Contractor)

where,

V_{sn} is the total value of work done during the specified period for the respective schedule of BOQ, and

S_{sn} is the secured advance paid during the specified period for the respective schedule of BOQ,

- (d) The adjustment to be applied to the amount otherwise payable to the Contractor, as valued in accordance with the appropriate schedule of BOQ and certified in Payment Certificates, shall be determined from formulae which shall be of the following general type:

$$P_n = a + b L_n/L_o + c E_n/E_o + d M_n/M_o + \dots\dots\dots$$

where,

“P_n” is the adjustment multiplier to be applied to the value of the work done during the period “n”, this period being a month unless otherwise stated in the SCC.

“a” is a fixed coefficient, stated in the relevant table of adjustment data, representing the non-adjustable portion in contractual payments;

“b”, “c”, “d”,... are coefficients representing the estimated proportion of each cost element related to the execution of the Works, as stated in the relevant table of adjustment data; such tabulated cost elements may be indicative of resources such as labour, equipment and materials;

“L_n”[*Labour*], “E_n”[*Equipment*], “M_n”[*Material*], are the current cost indices or reference prices for period “n”, each of which is applicable to the relevant tabulated cost element [*Labour, Equipment, Steel, Cement, Fuel/Lubricants, Bitumen, others*] on the date, specified in the Table-2 of Adjustment Data, prior to the last day of the period (to which the particular Payment Certificate relates); and

“L_o”, “E_o”, “M_o”, are the base cost indices or reference prices, expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the Base Date.

- (e) The cost indices or reference prices stated in the tables of adjustment data given in SCC shall be used. The base date shall be date of opening of bids.
- (f) If the Contractor fails to complete the Works within the Intended Completion date, adjustment of prices thereafter shall be made using either:
 - (i) index or price applicable for each cost element tabulated in the tables of adjustment data on the specified date prior to the expiry of the Intended Completion Date, or
 - (ii) the current index or price applicable for the period in question whichever is more favourable to the Employer.
- (g) The weightings (coefficients) for each of the factors of cost stated in the table(s) of adjustment data shall only be varied by the Engineer if they have been rendered unreasonable, unbalanced or inapplicable, as a result of Variations.
- (h) Unless otherwise stated in the S.C.C., the Price adjustment shall be done in each monthly IPC. The coefficients and indices are given in the Tables of Adjustment Data in SCC.

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

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- 48. Retention**
- 48.1 The Employer shall retain from each payment due to the Contractor the proportion **stated in the SCC** until Completion of the whole of the Works.
- 48.2 On completion of the whole of the Works, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Engineer has certified that all Defects notified by the Engineer to the Contractor before the end of this period have been corrected.
- 48.3 On completion of the whole Works, the Contractor may substitute retention money (balance half) with an “on demand” Bank guarantee.
- 49. Liquidated Damages**
- 49.1 The Contractor shall pay liquidated damages to the Employer at the rate per day **stated in the SCC** 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 SCC**. The Employer may deduct liquidated damages from payments due to the Contractor.
- 49.1.1 Time is the essence of the contract and payment or deduction of liquidated damages shall not relieve the contractor from his obligation to complete the work as per agreed construction program and milestones, or from any of the other contractor’s obligations and liabilities under the contract.
- 49.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC Sub-Clause 43.1.
- 50. Bonus**
- Not used.
- 51. Advance Payment**
- 51.1 The Employer shall make advance payment to the Contractor of the amounts **stated in the SCC** by the date **stated in the SCC**, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee can be progressively reduced by the amounts repaid by the Contractor. Interest shall not be charged on the advance payment.
- 51.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Engineer.
- 51.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance (mobilization & equipment) payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, or Liquidated Damages.
- 51.4 The Engineer shall make advance payment in respect of materials intended for but not yet incorporated in the Works in accordance with conditions stipulated in the SCC.

Secured Advance**52. Securities**

52.1 The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount **specified in the SCC**, by a bank or surety acceptable to the Employer, and denominated in Indian Rupees. The Performance Security shall be valid until a date 28 days from the date of expiry of Defects Liability Period and the additional security for unbalanced bids shall be valid until a date 28 days from the date of issue of the certificate of completion.

53. Dayworks

Not used

54. Cost of Repairs

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

E. Finishing the Contract**55. Completion**

55.1 The Contractor shall request the Engineer to issue a certificate of Completion of the Works, and the Engineer shall do so upon deciding that the work is completed.

56. Taking Over

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

57. Final Account

57.1 The Contractor shall supply the Engineer with a detailed account of the total amount that the Contractor considers payable under the Contract at 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 contract's revised account.

58. Operating and Maintenance Manuals

58.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates **stated in the SCC**.

58.2 If the Contractor does not supply the Drawings and/or manuals by the dates **stated in the SCC**, or they do not receive the Engineer's approval, the Engineer shall withhold the amount **stated in the SCC** from payments due to the Contractor.

59. Termination

59.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

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

- (a) the Contractor stops work for 28 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Engineer;

- (b) the Engineer instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 28 days;
- (c) the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- (d) a payment certified by the Engineer is not paid by the Employer to the Contractor within 84 days of the date of the Engineer's certificate;
- (e) the Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;
- (f) the Contractor does not maintain a Security, which is required; and
- (g) 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 the SCC**.
- (h) The contractor has contravened Sub-clause 7 of GCC read with SCC and Clause 9.0 of GCC.
- (i) The contractor does not adhere to the agreed construction program and agreed environmental management plan (Clause 27 of GCC) and also fails to take satisfactory remedial action as per agreements reached in the management meetings (Clause 31) for a period of 60 days.
- (j) The contractor fails to carry out of the instructions of Engineer within a reasonable time determined by the Engineer in accordance with GCC Clause 16.1 and 23.1.

59.3 When either party to the Contract gives notice of a breach of Contract to the Engineer for a cause other than those listed under GCC Sub-Clause 59.2 above, the Engineer shall decide whether the breach is fundamental or not.

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

59.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

60. Corrupt or Fraudulent Practices

60.1 If the Employer determines that the Contractor has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days notice to the Contractor, terminate the Contractor's employment under the Contract and expel him from the Site, and the provisions of Clause 59.5 shall apply.

60.2 Should any employee of the Contractor be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Works, then that employee shall be removed in accordance with Clause 9.1 [*Personnel*].

60.3 For the purposes of this Sub-Clause:

- (i) “corrupt practice”¹⁵ is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- (ii) “fraudulent practice”¹⁶ is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (iii) “collusive practice”¹⁷ is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- (iv) “coercive practice”¹⁸ is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- (v) “obstructive practice” is
 - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under Clause 23 [*Instructions, Inspections and Audits*].

¹⁵ “another party” refers to a public official acting in relation to the procurement process or contract execution]. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

¹⁶ a “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

¹⁷ “parties” refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non competitive levels.

¹⁸ a “party” refers to a participant in the procurement process or contract execution.

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- 61. Payment upon Termination**
- 61.1 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, less other recoveries due in terms of contract less taxed to be deducted at source [TDS] as per applicable law and less the percentage to apply to the value of the work not completed, as **indicated in the SCC**. 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.
- 61.2 If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Engineer shall issue a certificate for the value of the work done, Materials ordered, 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 received up to the date of the certificate less other recoveries due in terms of the contract, and less taxes due to be deducted at source [TDS] as per applicable law.
- 62 Property**
- 62.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer if the Contract is terminated because of the Contractor's default.
- 63. Release from Performance**
- 63.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either 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.
- 64. Suspension of World Bank Loan or Credit**
- 64.1 In the event that the World Bank suspends the Loan or Credit to the Employer, from which part of the payments to the Contractor are being made:
- (a) The Employer is obligated to notify the Contractor of such suspension within 7 days of having received the World Bank's suspension notice.
- (b) If the Contractor has not received sums due it within the 28 days for payment provided for in Sub-Clause 43.1, the Contractor may immediately issue a 14-day termination notice.

Section 4: Special Conditions of Contract

Section 4. Special Conditions of Contract

A. General																
GCC 1.1 (b)	<p>Replace this Sub-Clause with following:</p> <p>The Completion Date is the date of completion of the Part-1 Works as certified by the Engineer, in accordance with GCC Sub-Clause 55.1</p>															
GCC 1.1 (j)	<p>Replace this Sub-Clause with following:</p> <p>A Defect in any part of the Works, which are as per the Engineer, not completed in accordance with the Contract.</p>															
GCC 1.1 (n)	<p>Replace this Sub-Clause with following:</p> <p>The Employer is the party who enters into a Contract with the Contractor to carry out the Works, as specified below:</p> <p>Name: Governor of Uttar Pradesh through the Chief Engineer, World Bank Projects (Roads), UPPWD, Lucknow, India</p> <p>Address: NirmanBhawan, 96, Mahatma Gandhi Marg, Lucknow 226 001, (Uttar Pradesh) India</p> <p>Name of authorized Representative: Superintending Engineer, World Bank Project Circle, UPPWD, Kanpur</p>															
GCC 1.1 (q)	<p>The Intended Completion Date for the whole of the Works is Twenty-Four (24) months with the following milestones:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Milestone No</th> <th style="text-align: center;">Physical works to be completed</th> <th style="text-align: center;">Period from date of issue of notice to proceed with the work</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">M1</td> <td> <p>Routine Maintenance works (Existing carriageway)</p> <p>For providing only MSS (will be issued by Engineer on the date of commencement)</p> <p>Providing Patchwork (will be issued by Engineer on the date of commencement)</p> </td> <td style="text-align: center;">12 Months</td> </tr> <tr> <td style="text-align: center;">M2</td> <td>25% of total length under package upto DBM top including all structures therein</td> <td style="text-align: center;">12 months</td> </tr> <tr> <td style="text-align: center;">M3</td> <td>70% of total length under package upto DBM top including all structures therein</td> <td style="text-align: center;">18 months</td> </tr> <tr> <td style="text-align: center;">M4</td> <td>100% of all Part 1 works complete in all respect for the entire length of package</td> <td style="text-align: center;">24 Months</td> </tr> </tbody> </table>	Milestone No	Physical works to be completed	Period from date of issue of notice to proceed with the work	M1	<p>Routine Maintenance works (Existing carriageway)</p> <p>For providing only MSS (will be issued by Engineer on the date of commencement)</p> <p>Providing Patchwork (will be issued by Engineer on the date of commencement)</p>	12 Months	M2	25% of total length under package upto DBM top including all structures therein	12 months	M3	70% of total length under package upto DBM top including all structures therein	18 months	M4	100% of all Part 1 works complete in all respect for the entire length of package	24 Months
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GCC 1.1 (t)	Name of Engineer: To be Notified Later at the time of signing the Contract Agreement															

GCC 1.1 (v)	The Site is located at Jhansi District from Garautha (km 118.600) to Chirgaon (km 167.745) of SH 42																		
GCC 1.1 (y)	The Start Date shall be the date of issue of notice to proceed with the work.																		
GCC 1.1 (cc)	<p>The Works consist of upgradation (widening/strengthening) of Garautha-Chirgaon section of SH 42 from Km 118.600 to Km 167. 745 which is Part-1 Works and Part-2 Works is to carry out maintenance for 5 (five) years after taking over of Part-1 works.</p> <p>Part-1 Works</p> <p>The Works consist of upgradation (widening/strengthening) and include maintenance during construction, site clearance, earthwork, subbase and base course, pavement course, cross drainage works, structure works, drainage and protection works, road appurtenances works, traffic management during construction etc as per the drawings and specifications.</p> <p>Part-2 Works</p> <p>Carrying out maintenance works for 5 (five) years after taking over of Part-1 Works as per specifications.</p>																		
GCC 2.2	None																		
GCC 2.3(i)	The following documents also form part of the Contract: <i>NIL</i>																		
GCC 3.1	<p>The language of the contract is English.</p> <p>The law that applies to the Contract is the laws of Republic of India.</p>																		
GCC 6.1	<p>Replace this Sub-Clause with following:</p> <p>Communications between parties that are referred to in the Conditions shall be effective only when given in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).</p>																		
GCC 7.3	Deleted																		
GCC 8.1	Schedule of other contractors: <i>NIL</i>																		
GCC 9.1	<p>Key Personnel:</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Position</th> <th>No.</th> <th>Total Work Similar Experience (years)</th> <th>Experience In Similar Position (years)</th> <th>Qualification and Specific Experiences</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Project Manager–</td> <td>1</td> <td>15</td> <td>5</td> <td>Degree in Civil Engg. & must have worked as project manager</td> </tr> <tr> <td>2</td> <td>Highway Engineer</td> <td>1</td> <td>10</td> <td>5</td> <td>Degree in Civil Engg. & must have worked as Highway Engr. Or Diploma</td> </tr> </tbody> </table>	Sl. No.	Position	No.	Total Work Similar Experience (years)	Experience In Similar Position (years)	Qualification and Specific Experiences	1	Project Manager–	1	15	5	Degree in Civil Engg. & must have worked as project manager	2	Highway Engineer	1	10	5	Degree in Civil Engg. & must have worked as Highway Engr. Or Diploma
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2	Highway Engineer	1	10	5	Degree in Civil Engg. & must have worked as Highway Engr. Or Diploma														

						with a total experience of 15 years and 8 years in similar position.
	3	Material Engineer	1	10	5	Degree in Civil Engg. & must have worked as material Engr. Or Diploma with a total of 15 years of experience with 8 years in similar position.
	4	Quantity Surveyor	1	5	3	Degree/ Diploma in Civil Engg. & must have worked as Quantity surveyor
	5	Land Surveyor	2	5	3	Diploma in Civil Engg. & must have worked as land surveyor
	6	Mechanical/ Equipment Maintenance Engineer	1	5	3	Dip/Degree in Mech. Engineering.
	7	Environmental cum road safety manager	1	5	3	Graduate and preferably with post graduate degree/diploma in environmental science or equivalent & must have worked in similar position
GCC 9.2	Last Para of this Sub-Clause be replaced as follows: The contractor shall ensure that the person leaves the site within seven days of communication to remove from Engineer and a suitable replacement is in place within 28 days of communication to remove, all at the Contractor's cost.					
GCC 11.1	Replace this Sub-Clause with following: From the Start Date until the Completion of Part-2 Works, the following are Employer's risks: (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, (b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war, within the Country,					

	<p>(c) riot, commotion or disorder within the Country by persons other than the Contractor's Personnel,</p> <p>(d) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, within the Country, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity,</p> <p>(e) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds,</p> <p>(f) use or occupation by the Employer of any part of the Permanent Works, except as may be specified in the Contract,</p> <p>(g) design of any part of the Works by the Employer's Personnel or by others for whom the Employer is responsible, and</p> <p>(h) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventive precautions.</p>																				
<p>GCC 13.1</p>	<p>The minimum insurance amounts and deductibles shall be:</p> <table border="1" data-bbox="327 853 1457 1234"> <thead> <tr> <th colspan="2">Risk Covered</th> <th>Minimum Cover for Insurance</th> <th>Maximum deductible for Insurance</th> </tr> </thead> <tbody> <tr> <td>(i)</td> <td>Works and Plant and Materials</td> <td>Contract Price</td> <td rowspan="5">INR5000 for normal claims, Rs 20,000 for AOG/Major Perils/ Collapse claims, for all claims arising from per event.</td> </tr> <tr> <td>(ii)</td> <td>Loss or damage to Equipment</td> <td>Fair market value of Plant and Machinery</td> </tr> <tr> <td>(iii)</td> <td>Other Property</td> <td>100 Lacs</td> </tr> <tr> <td rowspan="2">(iv)</td> <td>Personal injury or death insurance:</td> <td rowspan="2">50Lacs</td> </tr> <tr> <td>a) for other people;</td> </tr> <tr> <td>b) for Contractor's Employees</td> <td>In accordance with the statutory requirements applicable to India</td> </tr> </tbody> </table>	Risk Covered		Minimum Cover for Insurance	Maximum deductible for Insurance	(i)	Works and Plant and Materials	Contract Price	INR5000 for normal claims, Rs 20,000 for AOG/Major Perils/ Collapse claims, for all claims arising from per event.	(ii)	Loss or damage to Equipment	Fair market value of Plant and Machinery	(iii)	Other Property	100 Lacs	(iv)	Personal injury or death insurance:	50Lacs	a) for other people;	b) for Contractor's Employees	In accordance with the statutory requirements applicable to India
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<p>GCC 14.1</p>	<p>Site Investigation Reports are: <i>None</i></p>																				
<p>GCC 21.1</p>	<p>Replace the sub-clause with the following :</p> <p>The Site Possession Date(s) shall be as per the following table :</p> <p><u>Within twoweeks of handing over of the each stretch, contractor needs to examine and provide acceptance of receiving encumbrance free land or inform the employer otherwise with any deficiencies. Minor changes to the section may be done by the Employer in that case.</u></p> <table border="1" data-bbox="327 1666 1437 2002"> <thead> <tr> <th colspan="2">The Site Possession Date(s) shall be:</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">Routine Maintenance works (Existing carriageway)</td> </tr> <tr> <td>On the Start Date</td> <td>For providing only MSS (will be issued by Engineer on the date of commencement)</td> </tr> <tr> <td></td> <td>Providing Patchwork and potholes repair (will be issued by Engineer on the date of commencement)</td> </tr> </tbody> </table>	The Site Possession Date(s) shall be:			Routine Maintenance works (Existing carriageway)	On the Start Date	For providing only MSS (will be issued by Engineer on the date of commencement)		Providing Patchwork and potholes repair (will be issued by Engineer on the date of commencement)												
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GCC 25.3	<p>Fees and types of reimbursable expenses to be paid to the Adjudicator:</p> <p>Daily Fee: INR</p> <p><i>Reimbursable Expenses:</i></p>
GCC 25.4	<p>The procedure for arbitration will be as follows:</p> <p>(a) In case of Dispute or difference arising between the Employer and the Contractor relating to any matter arising out of or connected with this agreement, such disputes or 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 President of the Indian Road Congress.</p> <p>(b) In the case of dispute with a Foreign contractor the dispute shall be settled in accordance with provisions of UNCITRAL Arbitration Rules. The Arbitral Tribunal shall consist of three 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, the Presiding Arbitrator shall be appointed by the President of the Indian Road Congress.</p>

	<p>(c) 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 President of the Indian Road Congress, both in cases of Foreign Contractor as well as Indian Contractor, shall appoint the Arbitrator. A certified copy of the order of the President of the Indian Road Congress, making such an appointment shall be furnished to each of the parties.</p> <p>(d) Arbitration proceedings shall be held at Lucknow (UP), India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.</p> <p>(e) The decision of the majority of Arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings as also the fees and expenses paid to the Arbitrator appointed by such party or on its behalf shall be borne by each party itself.</p> <p>(f) Where the value of the contract is INR50 millions and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority, namely the President of the Indian Road Congress.</p> <p>(g) Performance under the contract shall continue during the arbitration proceedings and payments due to the contractor by the owners shall not be withheld, unless they are the subject matter of the arbitration proceedings.</p>
GCC 26.1	Appointing Authority for the Adjudicator: President of the Indian Road Congress
B. Time Control	
GCC 27.1	<p>The Contractor shall submit a revised Program including Environmental Management Plan for the Works (in such form and detail as the engineer shall reasonably prescribe) within 21 days of delivery of the Letter of Acceptance.</p> <p><i>[This program should be in adequate detail and generally conform to the program submitted along with bid in response to ITB Clause 4.3(k). Deviations if any from that should be clearly explained and should be satisfactory to the Engineer]</i></p>
GCC 27.3	<p>The period between Program updates is 90 days.</p> <p>The amounts to be withheld for late submission of an updated Programme including Environmental (which includes Traffic Management) and Social Management Plan and Cash Flow forecast pursuant to Clause 27.1 and Clause 27.3 shall be Rs 500,000.</p>
GCC 32.1	<p>Replace this Sub-Clause with following:</p> <p>The Contractor shall communicate to the Engineer at the earliest opportunity and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. If the Contractor fails to communicate within such period of 28 days, the Contractor shall not be entitled to additional payment or time, and the Employer shall be discharged from all liability in connection with these events or circumstances.</p>

	The Engineer shall communicate to the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible but not later than the time period specified by the Engineer.																		
C. Quality Control																			
GCC 35.3	The Defects Liability Period is: 365 days																		
GCC 35.5	Add new Sub-Clause 35.5 as follows: For Part-2 Works: The Engineer shall give notice to the Contractor to carry out rectification of defects or deficiencies if any, noticed during his inspection or brought to his notice. The Contractor shall remove the defects within the period specified in the notice and submit to the Engineer a compliance report.																		
GCC 38.1	Replace para 1 of this Sub-Clause with following: If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 2 percent of the Initial Contract Price, the Engineer shall adjust the rate to allow for the change.																		
GCC 38.2	Replace this Sub-Clause with following: The Engineer shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 5 percent, except with the prior approval of the Employer.																		
D. Cost Control																			
GCC 42.7	Add new Sub-Clause 42.7 as follows: “The payment to the Contractor for carrying out Part-2 Works shall be regulated as follows: (a) The Contractor shall submit to the Engineer a pro-rata bill every month based on monthly quoted price under Part-2 Works of Bill of Quantities for carrying out the routine maintenance of the Works from the date of Completion of Part-1 Works. The bill shall be supported with a copy of the records of Contractor’s monthly inspection and instructions received from the Engineer. (b) If the bill for a month or/and if the Engineer has not certified that Contractor has carried out the maintenance work for the defects brought out to his notice in writing under sub clause 35.5 within specified period, the payment shall be reduced by the value of work. For the purpose of assessing the payment deductions shall be based on the work done and weightages as given below for various activities. <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Sl. No</th> <th style="text-align: center;">Activity</th> <th style="text-align: center;">% Weightage</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Carriageway and paved shoulders</td> <td style="text-align: center;">40.0</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Earthen shoulders, side slopes, drains and culverts</td> <td style="text-align: center;">17.0</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Project Facilities & road operation,Road side furniture including lighting, road signs and pavement marking</td> <td style="text-align: center;">31.0</td> </tr> <tr> <td style="text-align: center;">4</td> <td>Trees and plantation</td> <td style="text-align: center;">5.0</td> </tr> <tr> <td style="text-align: center;">5</td> <td>Bridges</td> <td style="text-align: center;">7.0</td> </tr> </tbody> </table>	Sl. No	Activity	% Weightage	1	Carriageway and paved shoulders	40.0	2	Earthen shoulders, side slopes, drains and culverts	17.0	3	Project Facilities & road operation,Road side furniture including lighting, road signs and pavement marking	31.0	4	Trees and plantation	5.0	5	Bridges	7.0
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	(c) Every 10 (ten) instances per calendar month for consecutive three months of non-compliance with regards to omitted maintenance, timely maintenance, non-compliance with the approved methodology or any instruction issued to the Contractor for rectification, as determined by the Engineer, shall result in penalties to the Contractor of 10% of monthly routine maintenance fee.
GCC 43.1	Replace the last sentence of this Sub-Clause with the following: Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at 12% simple interest per annum.
GCC 43.4	Add new sub clause 43.4 as follows: “Payment for Part-2 Works shall be made monthly for the satisfactory maintenance of the Works certified by the Engineer and based on monthly bills submitted by the Contractor as per sub clause 42.7.”
GCC 44.1 (b)	Deleted
GCC 44.1 (c)	Replace this Sub-Clause with following: The Engineer orders a delay or does not issue Drawings, Specifications, or instructions required for the execution of the Works within 10 days of such request from the Contractor.
GCC 44.1 (e)	Deleted
GCC 44.1 (f)	Deleted
GCC 44.1 (h)	Deleted
GCC 47	Substitute the whole clause 47 with the following: 47.1 Contract Price of Part-1 Works shall be adjusted for increase or decrease in rates and price of labour, materials, fuels and lubricants in accordance with the following procedure and as per formula given below: (a) The price adjustment shall apply for the work done from the date of commencement upto the end of the initial intended completion date or extensions granted. (b) Until such time as each current cost index is available, the Engineer shall determine a provisional index for the issue of Interim Payment Certificates. When a current cost index is available, the adjustment shall be recalculated accordingly. (c) If the Contractor fails to complete the Works within the Time for Completion, adjustment of prices thereafter shall be made using either (i) each index or price applicable on the date 49 days prior to the expiry of the Time for Completion of the Works, or (ii) the current index or price, whichever is more favourable to the Employer. (d) The price adjustment shall be determined during each month from the formulae given below. Following expressions and meanings are assigned to the work done during each month: R = Total value of work done during the month. It will exclude value of works executed under variations for which price adjustment will be worked separately based on the terms mutually agreed. The formula for adjustment of prices are given below: (i) Adjustment of labour component Price adjustment for increase or decrease in the cost due to labour shall be paid in accordance with the following formula:

$$V_L = 0.85 \times P_l/100 \times R \times (L_i - L_o)/L_o$$

Where,

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

L_o = the average consumer price index for industrial workers at Jhansi centre on the day 28 days preceding the latest date of submission of Bids as published by Labour Bureau, Ministry of Labour, Government of India published at the time of signing the contract.

L_i = The average consumer price index for industrial workers for Jhansi. centre for the month under consideration as published by Labour Bureau, Ministry of Labour, Government of India published at the time of signing the contract.

P_l = Percentage of labour component of the work.

(ii) Adjustment of Cement component

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula:

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

Where,

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

C_o = The all India average wholesale price index for cement on 28 days preceding the latest date of submission of Bids as published by Ministry of Industrial Development, Government of India, New Delhi published at the time of signing the contract.

C_i = The all India average wholesale price index for cement for the month under consideration as published by Ministry of Industrial Development, Government of India, New Delhi published at the time of signing the contract.

P_c = Percentage of cement component of the work.

(iii) Adjustment of Steel component

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

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

Where,

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

	<p>$S_o =$ The all India average wholesale price index for steel (Bars and Rods) on 28 days preceding the latest date of submission of Bids as published by Ministry of Industrial Development, Government of India, New Delhi published at the time of signing the contract.</p> <p>$S_i =$ The all India average wholesale price index for steel (Bars and Rods) for the month under consideration as published by Ministry of Industrial Development, Government of India, New Delhi published at the time of signing the contract.</p> <p>$P_s =$ Percentage of steel component of the work.</p> <p>(iv) Adjustment of Bitumen component Price adjustment for increase or decrease in the cost of bitumen shall be paid in accordance with the following formula:</p> $V_b = 0.85 \times P_b/100 \times R \times (B_i - B_o)/B_o$ <p>Where,</p> <p>$V_b =$ increase or decrease in the cost of work during the month under consideration due to changes in rates for bitumen.</p> <p>$B_o =$ The official retail price of bitumen at the nearest Indian Oil Corporation refinery on 28 days preceding the latest date of submission of Bids.</p> <p>$B_i =$ The official retail price of bitumen at the nearest Indian Oil Corporation refinery for the month under consideration.</p> <p>$P_s =$ Percentage of bitumen component of the work.</p> <p>(v) Adjustment of POL (fuel and lubricants) component Price adjustment for increase or decrease in the cost of POL (fuel and lubricants) shall be paid in accordance with the following formula:</p> $V_f = 0.85 \times P_f/100 \times R \times (F_i - F_o)/F_o$ <p>Where,</p> <p>$V_f =$ increase or decrease in the cost of work during the month under consideration due to changes in rates for fuel and lubricants.</p> <p>$F_o =$ The average official retail price of High Speed Diesel (HSD) at the existing consumer pumps of IOC at nearest centre on 28 days preceding the latest date of submission of Bids.</p> <p>$B_i =$ The average official retail price of HSD at the existing consumer pumps of IOC at nearest centre for the month under consideration.</p> <p>$P_f =$ Percentage of fuel and lubricants component of the work.</p> <p>(vi) Adjustment of Plant, Machinery and Spares component Price adjustment for increase or decrease in the cost of plant, machinery and spares procured by the Contractor shall be paid in accordance with the following formula:</p>
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$$V_p = 0.85 \times P_p / 100 \times R \times (P_i - P_o) / P_o$$

Where,

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

P_o = The all India average wholesale price index for heavy machinery and parts on 28 days preceding the latest date of submission of Bids as published by Ministry of Industrial Development, Government of India, New Delhi published at the time of signing the contract.

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

P_p = Percentage of plant, machinery and spares component of the work.

(vii) Adjustment of Other materials component

Price adjustment for increase or decrease in the cost of other materials other than cement, steel, bitumen and POL procured by the Contractor shall be paid in accordance with the following formula:

$$V_m = 0.85 \times P_m / 100 \times R \times (M_i - M_o) / M_o$$

Where,

V_m = increase or decrease in the cost of work during the month under consideration due to changes in rates for other materials other than cement, steel, bitumen and POL.

M_o = The all India average wholesale price index (all commodities) on 28 days preceding the latest date of submission of Bids as published by Ministry of Industrial Development, Government of India, New Delhi published at the time of signing the contract.

M_i = The all India average wholesale price index (all commodities) for the month under consideration as published by Ministry of Industrial Development, Government of India, New Delhi published at the time of signing the contract.

P_m = Percentage of other materials component (other than cement, steel, bitumen and POL) of the work.

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

1	Labour – P_l	10%
2	Cement – P_c	05%
3	Steel – P_s	05%
4	Bitumen – P_b	20%
5	POL – P_f	10%
6	Plant, Machinery and Spares - P_p	15%
7	Other materials – P_m	35%
	Total	100%

	47.2 To the extent that full compensation for any rise or fall in costs to the contractor is not covered by the provisions of this or other clauses in the contract, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs.
GCC 48.1	The proportion of payments retained (Retention Money) shall be 6% from monthly payment pertaining to Part-1 Works subject to the maximum of 5% of final contract price.
GCC 48.2	Replace the Sub-Clause with following: On completion of the whole of the Part-1 Works, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Engineer has certified that all Defects notified by the Engineer to the Contractor before the end of this period have been corrected.
GCC 48.3	Replace the Sub-Clause with following: On completion of the whole of Part-1 Works, the Contractor may substitute retention money (balance half) with an “on demand” Bank guarantee.
GCC 49.1	The liquidated damages for the whole of the Works and that of milestones are as under: For M1 INR 9,100 per day For M2 INR 242,300 per day For M3 INR678,500 per day For M4 INR969,300 per day The maximum amount of liquidated damages for the whole of the Part-1 Works is 10% of the Contract Price for Part-1 Works. In case the contractor completes the whole of works within the stipulated time period, then any LD deducted for any milestones other than M1 shall be refunded to the contractor.
GCC 51.1	Replace the Sub-Clause 51.1 with the following: The Employer shall make advance payment not more than 10% of Part-1 Works to the Contractor against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. This advance payment shall be made in two installments (i) <u>5% payment</u> will be made after the Contract signing and mobilization of the Project Manager approved by the Engineer; (ii) <u>5% on certification of completion of works equivalent to 10% of the Contract Amount</u> but before end of 20% of the contract period and submitting utilization certificates/invoices and all supporting documents confirming that the first tranche of the mobilization advance was entirely used for the implementation of this Contract. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee can be progressively reduced by the amounts repaid by the Contractor.
GCC 51.3	The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor. Deductions shall commence in the next monthly bill following that in which the total of all certified payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Contract Price. Deductions shall be made at the rate of 20% of the amount of each monthly bill (excluding the advance payment and deductions for its repayments as well as deductions for retention money) until such time as the advance payment has been repaid; provided that the advance payment shall

	be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.		
GCC 51.4	Nature of Advance	Amount (INR)	Conditions to be fulfilled
	Secured advance for crushed stone grits of various sizes to be used in the work and stored at the Hot Mix Plant site or at the Wet Mix Plant site duly stacked and for bitumen, cement and steel after proper storage at site.	Equivalent to seventy five percent (75%) of the Engineers determination of the cost of materials	<ul style="list-style-type: none"> a) The materials are in accordance with the specification for Works; b) Such materials have been delivered to site, and are properly stored and protected against damage or deterioration to the satisfaction of the Engineer. c) the Contractor's records of the requirements, orders, receipt and use of materials are kept in a form approved by the Engineer and such records shall be available for inspection by the Engineer; d) The contractor has submitted with his monthly statement the estimated value of the materials on site together with such documents as may be required by the Engineer for the purpose of valuation for material and providing evidence of ownership and payment thereof; e) Ownership of such materials shall be deemed to vest in the Employer for which the Contractor has submitted an Indemnity Bond in an acceptable format; and f) The quantity of materials are not excessive and shall be used within a reasonable time as determined by the Engineer.
	(The advance payment will be paid to the Contractor no later than 15 days after fulfillment of the above conditions).		

	<p>Repayment of secured advance:</p> <p>The advance shall be repaid from each succeeding monthly payments to the extent materials [for which advance was previously paid pursuant to Clause 51.4 of G.C.C] have been incorporated into the Works.</p>
GCC 52.1	<p>Performance security – 5% of amount of Part-1 Works plus additional security for unbalanced bid as per clause ITB 29.5</p> <p>Add following para at the end of the Sub-Clause:</p> <p>The Contractor shall, before 21days of expiry of the validity of the performance security, submit fresh performance security for an amount of 10% of Part-2 Works plus additional security for unbalanced bid as per clause ITB 29.5. This Performance Security shall be valid for a period of four years.</p>
GCC 54.1	<p>Replace the Sub-Clause with the following:</p> <p>Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Whole of the Works shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.</p>
E. Finishing the Contract	
GCC 55.1	<p>Replace the Sub-Clause with the following:</p> <p>The Contractor shall request the Engineer to issue a certificate of Completion of the Works, and the Engineer shall do so upon deciding that the Part-1 Works is completed in all respects.</p>
GCC 57.1	<p>Add the following at the end of Sub-Clause:</p> <p>This Sub-Clause is applicable for the payments under Part-1 Works.</p>
GCC 58.1	<p>As-built Drawings: within 28 days from the Issue of Certificate of Completion of Part-1 Works</p> <p>Operating and maintenance manuals: 28 days before Contractor's request to issue a Certificate of Completion of Part-1 Works.</p>
GCC 58.2	<u>INR</u> 50,00,000.
GCC 59.2 (g)	The maximum number of days is: 200
GCC 61.1	20%

Appendices

Appendix 1**Salient Features of Labour Laws****SALIENT FEATURES OF SOME MAJOR LABOUR LAWS
APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER
CONSTRUCTION WORK**

(The law as current on the date of bid opening will apply)

Labour Laws	<p>(a) <u>Workman Compensation Act 1923</u> : The Act provides for compensation in case of injury by accident arising out of and during the course of employment.</p> <p>(b) <u>Payment of Gratuity Act 1972</u>: gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more or on death the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.</p> <p>(c) <u>Employees P.F. and Miscellaneous Provision Act 1952 (since amended)</u>: The act Provides for monthly contribution by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are:</p> <p>(i) Pension or family pension on retirement or death, as the case may be.</p> <p>(ii) Deposit linked insurance on the death in harness of the worker.</p> <p>(iii)Payment of P.F. accumulation on retirement/death etc.</p> <p>(d) <u>Maternity Benefit Act 1951</u>: The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.</p> <p>(e) <u>Contract Labour (Regulation & Abolition) Act 1970</u>: 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 20 or more contract labour.</p> <p>(f) <u>Minimum Wage Act 1948</u>: The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a schedule employment. Construction of Buildings, Roads, Runways are schedule employments.</p> <p>(g) <u>Payment of Wages Act 1936</u>: 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.</p> <p>(h) <u>Equal Remuneration Act 1979</u>: The Act provides for payment of equal wages for work of equal nature to Male and Female workers and</p>
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	<p>for not making discrimination against Female employees in the matters of transfers, training and promotions etc.</p> <p>(i) <u>Payment of Bonus Act 1965</u>: The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing INR3500/- per month or less. The bonus to be paid to employees getting INR2500/- per month or above upto INR3500/- per month shall be worked out by taking wages as INR2500/- per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.</p> <p>(j) <u>Industrial Disputes act 1947</u>: 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.</p> <p>(k) <u>Industrial Employment (Standing Order) Act 1946</u>: It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.</p> <p>(l) <u>Trade Unions Act 1926</u>: 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.</p> <p>(m) <u>Child Labour (Prohibition & Regulation) Act 1986</u>: The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.</p> <p>(n) <u>Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979</u>: The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home upto the establishment and bank etc.</p> <p>(o) <u>The Building and Other Construction works (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996</u>: All the establishments who carry on any building or other construction work and employs 10 or more workers and 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</p>
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	<p>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 work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.</p> <p>(p) <u>Factories Act 1948</u>: the Act lays down the procedure for approval at plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process</p>
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SALIENT FEATURES OF SOME OF THE MAJOR LAWS THAT ARE APPLICABLE FOR PROTECTION OF ENVIRONMENT.

<p>Laws on protection of Environment</p>	<ol style="list-style-type: none"> 1. The Water(Prevention and Control of Pollution) Act, 1974, This provides for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. ‘Pollution’ means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water(whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms. 2. The Air (Prevention and Control of Pollution) Act, 1981, This provides for prevention, control and abatement of air pollution. ‘Air Pollution’ means the presence in the atmosphere of any ‘air pollutant’, which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment. 3. The Environment(Protection) Act, 1986, This provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. ‘Environment’ includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property. 4. The Public Liability Insurance Act, 1991, This provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.
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Appendix 2

Appendix 2 : Deleted

Appointment of Adjudicator

Suggested Draft of **Letter of Appointment of Adjudicators** in civil works contracts

Sub: _____(Name of the Contract)

To

Name and address of the Adjudicator

We hereby confirm your appointment as adjudicator for the above contract to carry out the assignment specified in this Letter of Appointment.

For administrative purpose _____(*name of the officer representing the employer*) has been assigned to administer the assignment and to provide the Adjudicator with all relevant information needed to carry out the assignment on behalf of both the employer and the contractor. The services will be required during the period of contract for the work of (Name of the Contract)_____.

The Adjudicator shall visit the worksite once in 3 (three) months till the completion of the work indicated above or as specifically requested by employer/contractor for the period upto the end of defects liability period with prior intimation to the employer and the contractor. The duration of each visit shall ordinarily be for one day only. These durations are approximate and (*Name of the employer and Name of the Contractor*) may find it necessary to postpone or cancel the assignment and/or shorten or extend the duration.

The appointment will become effective upon confirmation of letter by you. The appointment of Adjudicator shall be liable for termination under a 30 (thirty) days written notice from the date of issue of the notice, if both Employer and the Contractor so desire. Also the appointment shall automatically stand terminated 14 days after the defect notice / correction period as stated in Clauses 35 and 36 of the Conditions of Contract is over.

The Adjudicator will be paid a fee of INR _____(Rupees _____only) per each day of visit at the worksite. The actual expenses for boarding and traveling in connection with the assignment will be reimbursed to the Adjudicator. The Adjudicator will submit a pre-receipted bill in triplicate to the employer indicating the date of the visit, fees for the visit and a proof in support of the actual expenditure incurred by him against boarding, lodging and traveling expenses after performing the visit on each occasion. The Employer will make the admissible payment(both the Employer's and the Contractor's share) to the Adjudicator within 30 days of the receipt of the bill. The Contractor's share on this account(half the paid amount) will be recovered by the Employer from the Contractor's bills against the work.

In accepting this assignment, the Adjudicator should understand and agree that he is responsible for any liabilities and costs arising out of risks associated with travel to an from the place of emergency repatriation, loss or damage to personal/professional effects and property. The Adjudicator is advised to effect personal insurance cover in respect of such risks if he does not already have such cover in place. In this regard, the Adjudicator shall maintain appropriate medical, travel, accident and third-party liability insurance. The obligation under this paragraph will survive till termination of this appointment.

Procedures for resolution of disputes by the Adjudicator is described in the contract of _____(name of the contract) between the employer and the contractor vide clauses no.24,25 and 26 of the Conditions of Contract. Your recommendation should be given in the format attached, within 28 days of receipt of a notification of dispute.

The Adjudicator will carry out the assignment in accordance with the highest standard of professional and ethical competence and integrity, having due regard to the nature and purpose of the assignment, and will conduct himself in a manner consistent herewith. After visiting the worksite, the Adjudicator will discuss the matter with the Employer and if necessary with the Contractor before arriving at any decision.

The Adjudicator will agree that all knowledge and information not within the public domain, which may be acquired while carrying out this service shall be all time and for all purpose, regarded as strictly confidential and held in confidence, and shall not be directly or indirectly disclosed to any party whatsoever, except with the permission of the employer and the contractor. The Adjudicator's decision should be communicated in the form of a speaking order specifying the reasons.

The Adjudicator will agree that any manufacturing or construction firm with which he might be associated with, will not be eligible to participate in bidding for any goods or works resulting from or associated with the project of which this consulting assignment forms a part

Read and Agreed

Name of Adjudicator
Signature

Place:

Date:

Name of Employer

Signature of authorized representative of Employer

Name of the Contractor

Signature of authorized representative of Contractor

Attachment: Copy of contract document between the employer and contractor and format for recommendation.

SUMMARY OF ADJUDICATOR'S RESPONSIBILITIES

The Adjudicator has the following principal responsibilities:

1. Visit the site periodically.
2. Keep abreast of job activities and developments.
3. Encourage the resolution of disputes by the parties.
4. When a dispute is referred to it, conduct a hearing (no legal presentation), complete its deliberations, and prepare a recommendations in a professional and timely manner(as per sample format)

Sample Format of Adjudicator’s Recommendation

[Project Name]
Recommendation of Adjudicator

Dispute No. XX [NAME OF DISPUTE]

Hearing Date: _____

Dispute

Description of dispute. A one or two sentence summation of the dispute.

Contractor’s Position

A short summation of the contractor’s position as understood by the Adjudicator.

Employer’s Position

A short summation of the Employer’s position as understood by the Adjudicator.

Recommendation

The Adjudicator’s specific recommendation for settlement of the dispute. *(The recommended course is consistent with the explanation).*

Explanation

(This section could also be called Considerations, Rationale, Findings, Discussion, and so on.)

The Adjudicator’s description of how each recommendation was reached.

Respectfully submitted,

Date : _____

Date : _____

Date : _____

Section 5: Specifications

Section 5: Specifications

PREAMBLE

1. General

- 1.1 The Specifications contained herein shall be read in conjunction with the other Bidding Documents as specified in this Volume.

2. Site Information

The information given hereunder and provided elsewhere is given in good faith by the Employer but the Contractor shall satisfy himself regarding all aspects of site conditions and no claim will be entertained on the plea that the information supplied by the Employer is erroneous or insufficient.

2.1 Topography

The area in which works are located is in plain terrain, the approximate longitude and latitude of the region (Uttar Pradesh) being $79^{\circ} - 17'$ to $78^{\circ} - 50'$ East and $25^{\circ} - 34'$ to $25^{\circ} - 34'$ North respectively.

2.2 Climate

The variation in temperature in this region is as under:

- i) During summer months, the maximum temperature is 47°C
- ii) During winter months, the average minimum temperature is 4°C

The average annual rainfall in the area is 1100 mm, a good portion of which is distributed over the months of July to September each year.

2.3 Seismic activities

The works are located in Seismic Zone-II.

TECHNICAL SPECIFICATIONS

Part 1-General Technical Specification

1.1. Introduction

- 1.1.1. Part -1 General Technical specification shall comprise the “Specifications for Road and Bridge Works (Fifth Revision) published by Indian Roads Congress in April 2013 on behalf of Government of India, Ministry of Road Transport & Highways.
- 1.1.2. Certain provisions of the above Specifications are amended by Part 2-Particular Technical Specifications of these Specifications. In the event of conflict or discrepancies between the IRC Specification and the Particular Technical Specifications, the provisions of the Particular Technical Specifications shall prevail.
- 1.1.3. Words like ‘Contract’, ‘Contractor’, ‘Drawings’, ‘Works’, ‘Site’ and ‘Provisional Sum’ used in the IRC specification shall have and shall be deemed to have the same meaning as understood from the definitions of these terms in and as included in the Condition of Contract.
- 1.1.4. Copies of the IRC Specifications may be obtained from:

Indian Road Congress,
Jamnagar House,
Shahjahan Road, New Delhi

OR

Indian Road Congress,
Sector 6,
R.K.Puram,
Kama Koti Marg, New Delhi

Part 2 - Particular Technical Specifications

2.1 Introduction

- 2.1.1 This Part 2 - Particular Technical Specifications of the Specifications revises certain Causes of MORT&H Specifications for Road and Bridge Works 5th Revision 2013.
- 2.1.2 The amendments, if any, issued to the MORT&H Specifications for Road and Bridge Works Fifth Revision 2013, shall apply to the relevant Clauses, otherwise as specified in this Section.
- 2.1.3 These revisions comprise substitutions, modifications or additions to clauses of the MORT&H Specifications referred to in Part 1 - General Technical Specifications and accordingly the said Specifications so amended shall form part of the Contract.
- 2.1.4 The following list shows the Clauses of the MORT&H Specifications, which are modified or added by this Particular Technical Specifications:

Section 100:	105, 106, 111, 112, 114, 120 and 122
Section 200:	201 and 202
Section 300:	301, 304, 305, 306 and 309
Section 400:	401, 406, 409 and 410
Section 500:	501, 502, 503, 504, 505, 507, 508, 510 and 516
Section 800:	801, 802, 803, 805, 807, 809, 811 and 813
Section 1000:	1002, 1006, 1007, 1008 and 1014
Section 1500:	1501, 1502, 1506 and 1513
Section 1600:	1602, 1603 and 1605
Section 1700:	1705, 1706 and 1715
Section 1800:	1803
Section 2000:	2005, 2009 and 2011
Section 2100:	2104
Section 2200:	2208 and 2210
Section 2500:	2504 and 2507
Section 2700:	2702, 2703, 2706 and 2708
Section 2900:	2910 and 2911
Section 3000:	3001

2.1.5 Additional Specifications

The following Clauses have been added to the "SPECIFICATIONS FOR ROAD AND BRIDGE WORKS" (Fifth Revision, April 2013).

- Clause A-1 PART – 2 WORKS**
- Clause A-2 INTER LOCKING CONCRETE BLOCKS**
- Clause A-3 TREE PLANTATION**
- Clause A-4 TREE PROTECTION**

- Clause A-5 ENVIRONMENTAL MONITORING**
- Clause A-6 OIL AND GREASE INTERCEPTORS**
- Clause A-7 RAIN WATER HARVESTING STRUCTURE ALONG THE PROJECT ROAD**
- Clause A-8 DOWEL BARS IN DECK SLAB/BRICK MASONRY**
- Clause A-9 DRAINAGE SPOUTS IN EXISTING STRUCTURES**
- Clause A-10 CLEARING OF STEEL ROCKER-ROLLER BEARINGS**
- Clause A-11 SITTING BENCH**

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, BIS, BS, ASTM, AASHTO and CAN/CSA 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 Authority's Engineer.

AMENDMENTS/MODIFICATIONS/ADDITIONS TO EXISTING CLAUSES OF THE GENERAL SPECIFICATIONS**SECTION 100 GENERAL.****CLAUSE 105 SCOPE OF WORK****Sub Clause 105.3**

Add following at the end of Para 1

The procedures for inspection shall be IT based and intrgrated with the PMIS system. The contractor is required to have necessary infrastructure to support IT based system at his own cost.

Add following as point xiii) after point xii)

Contractor shall submit monthly report on accidents on the project road during Part-1 and Part-2 Works as per the format approved by the Engineer.

Add the following at the end ofSub Clause 105.3

The QA programme shall also conform to the requirements of EN ISO 9001.

CLAUSE 106 CONSTRUCTION EQUIPMENT

Add the following sub Para (l) after sub Para (k):

- l) All measuring devices and gauges shall be in good working condition. Measuring devices that can affect product quality shall be calibrated prior to use and at prescribed intervals against certified equipment. Calibration procedures shall be established, maintained and documented and corrective actions taken when results are unsatisfactory. Calibration of all measuring devices and gauges etc., which the Contractor intends to use in the contract, shall be calibrated from a competent/reputed authority/agency accredited to NABL and the frequency of the calibration shall be as directed by the Engineer. Accuracy and fitness of measuring devices shall be ensured by proper maintenance.

CLAUSE 111 PRECAUTIONS FOR SAFEGUARDING THE ENVIRONMENT

Replace entire Clause 111 with the following:

Sub Clause 111.1 General

The Contractor shall take all precautions for safeguarding the environment during the course of the construction of works. He shall abide by all rules, regulations and laws in force governing pollution and environmental protection that are applicable to the area where the works are situated.

NOISE:

The Contractor shall mitigate against any sustained increase in base line ambient Noise levels at sensitive receptors during construction of work.

All construction operations shall be performed in a manner to minimize noise and vibration. The parameters for noise are detailed below:

- 75 dB (A) for day;
- 70 dB (A) for night;
- 50 dB (A) for day and 40 dB (A) for night for sensitive receptors

If the noise levels are found to be above these standards and it is determined by the Engineer that these levels are due to the equipment or plant being deployed by the Contractor, he shall undertake, at his own cost measures as approved by the Engineer, to bring these levels down to the specified levels. Blasting should be done as per Indian Explosive Act. People living near such blasting sites shall have prior information of operational hazards. Blasting will not be undertaken at night. Workers at blasting sites will be provided with earplugs. Material haulage roads will be properly regulated.

Labour shall be warned against the hunting of wild life, if any. No archaeological site shall be disturbed.

Sub Clause 111.2 Borrow pits for Embankment Construction

Borrow pits shall not be dug within the Right-of-Way of the road. Arable lands will not be used for earth borrowing. The Contractor will ensure that proper excavation techniques are used to improve stability and safety of the borrow area. The excavation shall be carried out in such a way that the area does not inundate during monsoons or generate cesspools of water to become mosquito-breeding sites. The stipulations in Clause – 305.2.2 shall govern.

Sub Clause 111.3 Quarry Operations

The Contractor shall obtain material from licensed quarries only after the consent of the forest department or other concerned authorities. The quarry operation shall be undertaken within the purview of the rules and regulations in force. The Contractor shall ensure scheduling the movement of transport carrying material to and from the site during non-peak hours. The trucks carrying all the dusty material, red earth, moorum and fly ash/pond, ash shall be covered with a tarpaulin and provided with adequate free board to prevent spillage. End boards shall be provided in loaders to prevent spillage.

Stockpiling of material shall be properly planned so as to ensure that no traffic jam takes place on the highway.

Sub-Clause 111.4 Control of Soil Erosion, Sedimentation and Water

The Contractor shall carry out the works in such a manner that soil erosion is fully controlled, and sedimentation and pollution of natural water courses, ponds, tanks and reservoirs is avoided. The stipulations of Clause 306 shall govern.

Sub Clause 111.5 Precautions against Dust

The Contractor shall take all reasonable steps to minimize dust nuisance during the construction of the works. All existing highways and roads used by vehicles of the Contractor or any of his sub-Contractors or suppliers of materials or plant, and similarly any new roads which are part of the works and which are being used by traffic shall be kept clean and clear of all dust / mud or other extraneous material dropped by the said vehicles or their tyres. Similarly, all dust / or mud or other extraneous material from the works spreading on these highways shall be immediately cleared by the Contractor. Clearance shall be effected immediately by manual sweeping and removal of debris, or, if so directed by the Engineer, by mechanical sweeping and clearing equipment, and all

dust, mud and other debris shall be removed entirely from the road surface. Additionally, the road surface including haul road from Quarries and Plants shall be hosed or watered using suitable equipment to avoid dust pollution. Special care shall be taken to combat dust problem originating from use of fly ash/pond ash.

Sub Clause 111.6 Pollution from Hot Mix Plant, WMM Plant, Batching Plant & Crusher and Other Construction Machinery

The Contractor shall ensure the use of a relatively new, well maintained hot mix plant (batch type) so that any emission conforms to the CPCB norms and be fitted with a dust extraction unit to avoid prolonged engine powered equipment illness. Hot Mix Plant, WMM plant, Batching Plant & Crusher shall be located more than 500 m from any community or residence and 1 km away from the sensitive receptors (schools, hospitals), unless otherwise required by the statutory requirements. The Contractor has to obtain necessary consent/clearance from State Pollution Control Board to operate Hot Mix Plant, WMM plant, Batching Plant, DG Set & Crusher before commencement of works.

All vehicles, equipment and machinery needed for construction will be regularly maintained to ensure that pollution emission levels conform to CPCB norms. All vehicles should be fitted with silencers.

Construction vehicles, machinery & equipment will move or be stationed in designated areas to avoid compaction of soil to ensure the preservation of the top soil for agriculture.

Sub Clause 111.7 Road Safety

The Contractor shall provide adequate circuit for traffic flow around construction areas, control speed of construction vehicles through road safety and training of drivers, provide adequate signage, barriers and flag persons for traffic control. If there are traffic jams during construction, measures shall be taken to relieve the congestion with the assistance of local traffic police. Safety of workers undertaking various operations during construction will be ensured by providing helmets, masks, safety goggles, etc. One Qualified Safety Officer and one Safety Supervisor must be available in the Contractor's working team for the entire construction period.

The Contractor shall submit the **construction safety check** list in the format given below filled up to fourth column to the Engineer by 5th of every month. The Engineer shall fill up the remaining column of the check list and forward to the Employer within a week period.

Sl. No.	Safety Issues	Yes	No	Non compliance	Corrective Action	Penalty	Remarks
Safety during Construction Stage							
1	Appointment of qualified Construction safety officers						
2	Approval for Construction Safety Management Plan by the Engineer.						
3	Approval for Traffic Management/control Plan in accordance with IRC: SP: 55-2001						
4	Maintenance of the existing road stretches handed over to the Contractor.						

Sl. No.	Safety Issues	Yes	No	Non compliance	Corrective Action	Penalty	Remarks
5	Provision of Temporary Traffic Barriers/Barricades/caution tapes in construction zones						
6	Provision of traffic sign boards						
7	Provision for flags and warning lights						
8	Provision of metal drum/empty bitumen drum delineator, painted in circumferential strips of alternate black and white 100mm wide 2 coats fitted with reflectors 3 Nos of 7.5cm diameter						
9	Providing plastic crash barrier						
10	Provision of adequate staging, form work and access (ladders with handrail) for works at a height of more than 3.0 m						
11	Provision of adequate shoring / bracing / barricading / lighting for all deep excavations of more than 3.0 m depth.						
12	Demarcations (fencing, guarding and watching) at construction sites						
13	Provision for sufficient lighting especially for night time work						
14	Arrangements for controlled access and entry to Construction zones						
15	Safety arrangements for Road users / Pedestrians						
16	Arrangements for detouring traffic to alternate facilities.						
17	Regular Inspection of Work Zone Traffic Control Devices by authorized contractor personnel						
18	Construction Workers safety - Provision of personnel protective equipments						
19	A. Helmets						
	B. Safety Shoe						
	C. Dust masks						
	D. Hand Gloves						
	E. Safety Belts						
	F. Reflective Jackets						
	G. Earplugs for labour						
20	Workers employed on bituminous works, stone crushers, concrete batching plants etc. provided with protective goggles, gloves, gumboots etc.						

Sl. No.	Safety Issues	Yes	No	Non compliance	Corrective Action	Penalty	Remarks
21	Workers engaged in welding work shall be provided with welder protective shields						
22	All vehicles are provided with reverse horns.						
23	All scaffolds, ladders and other safety devices shall be maintained in as safe and sound condition						
24	Regular health checkup for Labour/ Contractor's personnel.						
25	Ensuring the sanitary conditions and all waste disposal procedures & methods in the camps.						
26	The Contractor shall provide adequate circuit for traffic flow around construction areas, control speed of construction vehicles through road safety and training of drivers, provide adequate signage, barriers and flag persons for traffic control						
27	Provision for insurance coverage to the contractor's personnel						

Sub Clause 11.8 Sanitation & Waste Disposal in Construction Camp

The Contractor shall ensure that construction camps are located at a distance of minimum 200m from water sources. Special attention shall be paid to the sanitary conditions of the camps. The Contractor shall ensure that sufficient measures are taken i.e. provision of garbage tanks and sanitation facilities. Waste in septic tanks shall be cleaned periodically. Garbage shall be collected in four empty drums at each construction site and disposed of daily. The Contractor shall provide adequate measures for the health care of workers and arrange their regular medical check-up to ensure that they do not suffer from any communicable disease. At every workplace, good & sufficient water supply will be maintained to avoid waterborne/ water related diseases. If any pits are dug at construction / camp sites which are not filled and then may turn into mosquito breeding sites during monsoons shall be filled up properly so that no water accumulates.

Sub Clause 11.9 Substance Hazardous to Health

The Contractor shall not use or generate any material in the works, which is hazardous to the health of persons, animals or vegetation. Where it is necessary to use some such substance which can cause injury to the health of the workers, the Contractor shall provide suitable protective clothing or appliances to his workers, viz. earplugs, helmets or dust masks.

Sub Clause 11.10 Damage to Existing road/ CD Structures

Any structural damage caused to the existing roads/structures by the Contractor's construction equipment shall be made good without any extra cost.

Sub Clause 111.11 Use of Nuclear Gauges

Nuclear gauges shall be used only where permitted by the Engineer. The Contractor shall provide the Engineer with a copy of the regulations governing the safe use of nuclear gauges he intends to employ and shall abide by such regulations. Without written approval, no such equipment shall be used at any level of the work.

Sub Clause 111.12 Environmental Monitoring

In order to carry out periodic checks, environmental monitoring will be carried out by the Engineer as per schedule and if any parameter is found above the acceptable standards, mitigation measures / control measures as decided by the Engineer shall be complied with by the Contractor.

Sub Clause 111.13 Protection of Existing Trees

Some of the existing trees within the right of way are likely to be cut down by the Employer prior to handing over of the site to the Contractor. The Contractor shall take all necessary measures to ensure safety and protection of the remaining trees from any action whatsoever relating to his construction operations in the adjoining areas.

Giant neighbourhood trees recognized locally as important shall be preserved and engineering designs modified to accommodate these wherever possible depending on Engineer's directions.

Sub Clause 111.14 Disposal of Materials outside Work Site

Notwithstanding other relevant provisions in the contract, the excess material generated by dismantling, excavation, waste material and lubricants, used oil, gasoline and other such substance etc., shall be removed from site outside the right of way at regular intervals and site shall kept clean from all such disposable materials. Grease, cotton and other waste construction materials shall be disposed off in shallow pits and periodically burnt in a incinerator constructed at each construction site. Such intervals shall not exceed one month under any circumstances. The selection of the disposal site shall be the responsibility of the Contractor and he shall ensure that the selected site does not result in any claim for damages to the Employer or violation of any existing laws.

This section of Technical Specifications sets out instructions, recommended standards and technical specifications for the design and implementation of EMP mitigation works associated with construction of roads.

Environmental Management Plan has been prepared for the Project road, which needs to be followed during the implementation of the civil works. The key responsibility of the contractor/sub-contractor will be the successful implementation of the EMP. In addition, he will update MORT&H on the progress of environmental protection and / or enhancement works as envisaged in the EMP. Execution of environmental mitigation measures meeting the requirement of Technical Specifications in conformity with applicable legislation will be the responsibility of the contractor. It shall also be accompanied with relevant documents (statements of compliance, certificates of compliance, test reports, etc.), evidencing their conformity with the statutory regulations.

111.14.1 DISPOSAL OF UNSERVICEABLE MATERIALS:

The locations of Disposal sites have to be selected such that:

- Locating the disposal sites is the sole responsibility of the contractor with the approval of Engineer.
- Joint inspection of all disposal sites shall be done by Engineer and Contractor prior to approval.
- No residential area are located downwind side of these locations,
- Disposal sites are located at least 1000 m away from sensitive locations like Settlements, Water body, notified forest areas, Sanctuaries or any other sensitive locations.
- Disposal sites do not contaminate any water sources, rivers etc for this site should be located away from water body and disposal site should be lined properly to prevent infiltration of water.
- Public perception about the location of debris disposal site has to be obtained before finalizing the location.
- Permission from the Village/local community is to be obtained for the Disposal site selected.
- Contractor will resolve all claims arising out of waste disposal at his own cost.
- Contractor shall utilize the suitable borrow areas, abandoned quarries and other waste land for the debris disposal.
- Contractor needs to plan the disposal in the following way:
 - Identify the disposal area.
 - Prepare a Contractors debris disposal plan with design drawings for each identified area and get it approved by the Engineer.
 - Need to photograph the present land use and condition of the area.
 - Construct all required structures (e.g. retaining wall).
 - The dumpsites filled only up to the ground level with compaction of the debris materials in layers after disposal.
 - The 30 cm top layer of disposal pit shall be provided with good earth suitable for development of vegetation/plantation.
 - After levelling, the site could be suitably rehabilitated by planting local species of grass (turking), shrubs and other plants as decided by the Engineer.

111.14.2 CONSTRUCTION OF WATER RECHARGE PITS:

Storm water recharge pits shall be located such that it should be in the valley of the surface layout nearby cross drainage structures and other water bodies along the project road. Water recharge pits shall be located at a height of 3 m. above the ground water table of the area as per the Central Ground Water Board norms. Recharge pits are constructed by the side of the guiding drains such that all the storm water shall be directed to the recharge pit. Any proposal for change in number and location recharge pits by the contractor shall be checked and approved by the Engineer.

Pits, trenches, abandoned dug wells, recharge wells or abandoned bore wells shall be connected by the rain water harvesting system with the consent of the respective owner or as approved by the Engineer.

111.14.3 CONSTRUCTION OF SILT TRAPS:

Silt fences shall be planned such that each recharge pit will have one silt fence to prevent silt from entering the nearest water bodies and also prevent choking of recharge pit by the silt coming from runoff water and increase the life of recharge pits. Silt fence are mounted in guiding drains at a distance of 3 to 5 M in the upstream direction depending on the gradient of the guiding drains. However any proposal for change in number and location silt fences by the contractor shall be checked and approved by the Engineer. Sand / silt removal facilities such as sand traps, silt traps and sediment basins should be provided to remove sand / silt particles from run-off.

111.14.4 SCARIFIED BITUMEN DISPOSAL PITS:

Scarified bitumen generated out of scarification of existing pavement is used for approach roads by mixing it with fresh bitumen or other granular materials to achieve the required strength followed by profiling and compaction.

The left out portion of the scarified bitumen is disposed safely in a clay lined pit or as directed and approved by the Engineer. A typical clay lined bitumen disposal pit with standard dimensions has been worked out. The dimension of the bitumen disposal pit may change provided the clay lining of required thickness is adhered to.

The selection of sites for disposal of scarified bitumen is made on following lines:

- Locating the bitumen disposal sites is the sole responsibility of the contractor with the approval of Engineer.
- Selection of bitumen disposal site is avoided in the quarry regions. If the disposal site is located in the abandoned quarry, region is suitably treatment seal the fractures and fissures.
- Joint inspection of all disposal sites shall be done by Engineer and Contractor prior to approval.
- Disposal sites shall be located at least 1000 m away from sensitive locations like Settlements, Water body, notified forest areas, Sanctuaries or any other sensitive locations.
- Disposal sites do not contaminate any water sources, rivers etc for this, site should be located away from water body and disposal site should be lined properly to prevent infiltration of water.
- Public perception about the location of bitumen disposal site has to be obtained before finalizing the location.
- Permission from the Village/local community is to be obtained for the Disposal site selected.
- Contractor will resolve all claims arising out of waste disposal at his own cost. Contractor needs to plan the bitumen disposal in the following way:
 - Identify the disposal area.
 - Prepare a Contractors bitumen disposal plan with design drawings for each identified area and get it approved by the Engineer.
 - Need to photograph the present land use and condition of the area.
 - Construct all required structures (e.g. retaining wall) along with clay lining and measures to prevent the seepage of bitumen leachate.
 - The dumpsites filled only up to the ground level with compaction of the materials in layers after disposal.

- The 30 cm top layer of disposal pit shall be provided with good earth suitable for development of vegetation/plantation.
- After levelling, the site could be suitably rehabilitated by planting local species of grass (turfing), shrubs and other plants as decided by the Engineer and the supervision consultant.

111.14.5 PROVISION FOR OIL INTERCEPTORS:

Location of Oil Interceptors shall be considered such that each construction camp having refuelling stations, oil and lubricants storage places will have one oil interceptor to stop & separate the floating oils. However the number of interceptors shall be increased as the situation demands or during the accidental spillages with the consent of the Engineer.

111.14.6 ENVIRONMENTAL MONITORING:

Environmental Monitoring of Air, Noise, Water and Soil parameters shall be carried by the contractor as per the consents and latest environmental norms, guidelines and policies of national and state level environmental authorities. The Contractor shall comply by all obligations and make sure that there are no deviations from them or from the Contract.

Environmental standards for Air, Noise and water are outlined below.

1. Ambient Air Quality Standards (National)

S. No.	Pollutants	Time weighted average	Concentration in ambient air		Method of measurement
			Industrial, Residential, Rural & other Areas	Ecologically Sensitive Area (notified by Central Government)	
1.	Sulphur Dioxide (SO ₂) µg/m ³	Annual*	50	20	- Improved West and Geake - Ultraviolet Fluorescence
		24 hours**	80	80	
2.	Nitrogen Dioxide (NO ₂) µg/m ³	Annual*	40	30	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
		24 hours**	80	80	
3.	Particulate Matter (size less than 10 µm or PM ₁₀) µg/m ³	Annual*	60	60	- Gravimetric - TOEM - Beta attenuation
		24 hours**	100	100	
4.	Particulate Matter (size less than 2.5 µm or PM _{2.5}) µg/m ³	Annual*	40	40	- Gravimetric - TOEM - Beta attenuation
		24 hours**	60	60	
5.	Ozone (O ₃) µg/m ³	8 hours**	100	100	- UV Photometric - Chemiluminescence - Chemical method
		1 hour **	180	180	
6.	Lead (Pb) µg/m ³	Annual*	0.5	0.5	- ASS/ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
		24 hours**	1.0	1.0	
7.	Carbon Monoxide (CO) mg/m ³	8 hour	02	02	- Non Dispersive Infra Red (NDIR) - Spectroscopy
		1 hours**	04	04	
8.	Ammonia (NH ₃) µg/m ³	Annual*	100	100	- Chemiluminescence - 24 - Indophenol blue method
		24 hours**	400	400	

S. No.	Pollutants	Time weighted average	Concentration in ambient air		Method of measurement
			Industrial, Residential, Rural & other Areas	Ecologically Sensitive Area (notified by Central Government)	
9.	Benzene (C ₆ H ₆) µg/m ³	Annual*	05	05	- Gas chromatography based - on continuous analyser - Adsorption and desorption - followed by GC analysis
10.	Benzol (O) Pyrene (BaP) – Particulate phase only ng/m ³	Annual*	01	01	- Solvent extraction followed - by HPLC/GC analysis
11.	Arsenic (As) ng/m ³	Annual*	06	06	- AAS/ICP method after - sampling on EPM 2000 or - equivalent filter paper
12.	Nickel (Ni) ng/m ³	Annual*	20	20	- AAS/ICP method after - sampling on EPM 2000 or - equivalent filter paper
*	Annual Arithmetic mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform interval.				
**	24 hourly/8 hourly values should be met 98% of the time in a year. However, 2% of the time, it may exceed but not on two consecutive days.				

2. Water quality Standards (IS 10500: 1991)

S. No.	Parameter	Requirement desirable Limit	Remarks
1.	Colour	5	May be extended up to 50 if toxic substances are suspected
2.	Turbidity	10	May be relaxed up to 25 in the absence of alternate
3.	pH	to 8.5	May be relaxed up to 9.2 in the absence of alternate
4.	Total Hardness	300	May be extended up to 600
5.	Calcium as Ca	75	May be extended up to 200
6.	Magnesium as Mg	30	May be extended up to 100
7.	Copper as Cu	0.05	May be relaxed up to 1.5
8.	Iron	0.3	May be extended up to 1
9.	Manganese	0.1	May be extended up to 0.5
10.	Chlorides	250	May be extended up to 1000
11.	Sulphates	150	May be extended up to 400
12.	Nitrates	45	No relaxation
13.	Fluoride	to 1.2	If the limit is below 0.6 water should be rejected, Max. Limit is extended to 1.5
14.	Phenols	0.001	May be relaxed up to 0.002
15.	Mercury	0.001	No relaxation
16.	Cadmium	0.01	No relaxation
17.	Selenium	0.01	No relaxation
18.	Arsenic	0.05	No relaxation
19.	Cyanide	0.05	No relaxation
20.	Lead	0.1	No relaxation
21.	Zinc	5.0	May be extended up to 10.0
22.	Anionic detergents (MBAS)	0.2	May be relaxed up to 1

S. No.	Parameter	Requirement desirable Limit	Remarks
23.	Chromium as Cr+6	0.05	No relaxation
24.	Poly nuclear aromatic Hydrocarbons	--	--
25.	Mineral Oil	0.01	May be relaxed up to 0.03
26.	Residual free Chlorine	0.2	Applicable only when water is chlorinated
27.	Pesticides	Absent	--
28.	Radio active	--	--

3. Ambient Noise Quality Standards in respect of Noise

Area code	Category of Area / Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

Note:-

1. Day time shall mean from 6.00 a.m. to 10.00 p.m.
2. Night time shall mean from 10.00 p.m. to 6.00 a.m.
3. Silence zone is an area comprising not less than 100 metres around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority
4. Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.

* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A "decibel" is a unit in which noise is measured.

"A", in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is an energy mean of the noise level over a specified period.

Note: The Principal Rules were published in the Gazette of India, vide S.O. 123(E), dated 14.2.2000 and subsequently amended by the Noise Pollution (Regulation and Control) (Amendment) Rules, 2000 vide S.O. 1046(E), dated 22.11.2000 and by the Noise Pollution (Regulation and Control) (Amendment) Rules, 2002 vide S.O. 1088(E), dated 11.10.2002, under the Environment (Protection) Act, 1986.

Sub Clause 111.15

Compliance with the foregoing will not relieve the Contractor of any responsibility for complying with the requirements of any highway authority in respect of the roads used by him.

Sub Clause 111.16 Measurement

For Compliance of all provisions made in this Clause 111, it shall be deemed to be incidental to the work and no separate measurement shall be made. The Contractor shall be deemed to have made allowance for such compliance with these provisions in the preparations of his prices for items of work included in the Bill of Quantities and full compensation for such compliance shall be deemed to be covered by them.

CLAUSE 112 ARRANGEMENT FOR TRAFFIC DURING CONSTRUCTION

Sub Clause 112.1 General

Add at the end of point iv) the following:

Contractor shall coordinate with the Ambulance services offered by Emergency Medical Transport Service (EMTS) provided by Department of Health & Family welfare, Govt. of Uttar Pradesh.

Add the following at the end of this Sub-Clause:

“The Contractor shall ensure that all the traffic management devices as per Traffic Management Plan approved by the Engineer are in position before opening of sites of work.”

Sub-Clause 112.2 Passage of Traffic along a part of the Existing Carriageway under improvement

Replace 2nd sentence of 1st paragraph of the Sub Clause 112.2 with the following:

The treatment of the shoulder shall consist of providing at least 150mm thick granular (Wet Mix Macadam) base course covered with 20 mm thick Close-Graded Premix Surfacing/Mixed Seal Surfacing (Type B) as per Clause 508 in a width of at least 1.5m such that the total paved width available for traffic including part of the existing road and treated shoulder is not less than 3.75m and the treated shoulder shall be maintained throughout the period during which traffic uses the same to the satisfaction of the Engineer.

Replace the Sub Clause 112.3 with the following

Sub Clause 112.3 Passage of Traffic along a Temporary Diversion

In stretches where it is not possible to pass the traffic on part width of the carriageway, a temporary diversion shall be constructed with 5.5 m carriageway and 2.5 m earthen shoulders (top 150mm portion constructed with GSB layer) on each side (total width of roadway 10.5 m) with the following provision for road crust in the 5.5 m width:

- (i) Earthwork
- (ii) 200 mm (compacted) granular sub-base;
- (iii) 225 mm (compacted) granular base course (Wet Mix Macadam);
- (iv) Priming and Tack Coat and
- (i) 20 mm thick Close-Graded Premix Surfacing / Mixed Seal Surfacing (Type B).

The use of fly ash in temporary diversions shall not be permitted.

The location of such stretch, alignment and longitudinal section of diversion including junctions and temporary cross drainage provision shall be as approved by the Engineer.

The Contractor shall be responsible for the design of temporary diversions and submit the designs to the Engineer for his approval. If the Contractor finds it necessary to construct part of any diversion outside the Right of Way, the temporary use of additional land shall be arranged for by the Contractor at his own risk and cost. Further as per Conditions of Contract, the Contractor shall indemnify the Employer and the Engineer against any claims or proceedings resulting from the occupancy and use of such areas of additional

land. Any roadside trees that have to be removed for the construction of temporary diversions shall be at the responsibility and cost of the Contractor.

Sub Clause 112.4 Traffic Safety and Control

Add following para at the end of this clause:

Should the Contractor fail to make provision as required in the preceding paragraphs, the Employer may provide necessary arrangements, the cost of which shall be recoverable from the Contractor.

Replace the Sub Clause 112.6 with the following

Sub Clause 112.6 Measurements for Payment and Rate

- (i) All arrangements for traffic during construction including provision of temporary cross drainage structures, if required and treated shoulder as described in Clause 112.2 and 112.4 including their maintenance, dismantling and clearing debris, where necessary, shall be considered as incidental to the works and shall be the Contractor's responsibility.
- (ii) The construction of temporary diversion including temporary cross drainage structures at the site of bridge reconstruction locations as described in Clause 112.3, shall be **payable** and measured and paid as per the BOQ. The unit contract rate shall be inclusive of full compensation for construction (including supply of material, labour, tools, etc.), maintenance, final dismantling, and disposal.

CLAUSE 114 SCOPE OF RATES FOR DIFFERENT ITEMS OF WORK

Sub Clause 114.2 Add the following at the end of Item (ii) of Clause 114.2:

“The Contractor shall submit data via electronic media and hard copy to the Engineer in a form readily compatible with the Engineer’s planning system.”

Sub Clause 114.2 Add the following as item (xix) to sub-clause 114.2:

“Monthly progress report in a format acceptable to the Engineer” The report shall state the progress which has been achieved compared with the planned progress, illustrate delays in proportion to the progress planned, analyze the consequences and state planned corrective measures. Intermediate progress reports may also be required.

The first issue of the detailed programme including the detailed description of the system and the procedures shall be submitted to the Engineer for acceptance not later than 28 days after the date of receipt of the letter of acceptance.”

Sub Clause 114.2 Add the following as item (xx) to Sub-Clause 114.2

Cost of carrying out Topographic Surveys and Auto Level Surveys.

CLAUSE 120 FIELD LABORATORY

Replace Sub-Clause 120.2 with the following:

120.2 Description

The Contractor shall arrange to provide fully furnished and adequately equipped field laboratory. The field laboratory shall be located in close proximity to the Works site. It

shall be provided with electricity supply, electrical wiring and points, all necessary electrical fittings and fixtures; potable water supply including pipes, pumps, storage tanks, plumbing, all necessary fittings and fixtures; septic tank, sewer lines, drains; surfaced access road; fencing and security lighting; security services etc.

The floor space requirement for the field laboratory shall be as indicated in the drawings. It shall include office space for the Materials Engineers, one from the Contractor's side and another from the Engineer's side, space for the installation of equipment, and space for other facilities. The field laboratory shall be fitted complete with laboratory equipment, laboratory tables and cupboards, wash basins, toilet facilities, curing tank around 4m x 2m x 1m in size for the curing of samples, a fume chamber, working platform area of about 1m x 10m against the walls, cupboards above and below the working platform, space for storage of accessories such as sample moulds, space for storage of samples etc. At least 4 racks of slotted angles and M.S. sheets shall also be provided. The furnishing in each of two offices of the Materials Engineers shall include working tables and chairs.

Table 100-2: List of Laboratory Equipments

S. No	Item, Specifications	Nos. required
A: General		
1)	Weigh Balances	
	(a) 5 kg to 20 kg capacity Electronic Type –Accuracy 1 gm	2
	(b) 500 gm capacity Electronic Type – Accuracy 0.01 gm	2
	(c) Chemical balance 100gm capacity - Accuracy 0.0001gm	1
	(d) Pan balance 5 kg capacity Electronic Type - Accuracy 0.5 gm	2
	(e) Platform Balance Scale – 300 kg capacity	1
	(f) Triple Beam balance-25kg capacity Accuracy 1gm	2
2)	Oven – electrically operated, thermostatically controlled (including thermometer), stainless steel interior	
	(a) From 0°C to 220°C – Sensitivity 1°C	2
3)	Sieves: as per IS: 460-1962	
	(a) IS Sieves 450 mm internal dia. of sieve sets as per BIS of required sieve sizes complete with lid and pan	2 set
	(b) IS sieve 200 mm internal dia. (brass frame and steel/ or brass wire cloth mesh) consisting of sieve sets of required sieve sizes complete with lid and pan	2 set
4)	Sieve shaker capable of taking 200 mm and 450 mm dia. Sieves electrically operated with time switch assembly (As per BIS)	1
5)	200 tonnes compression testing machine	1
6)	Stop watches 1/5 sec. Accuracy	2
7)	Glassware comprising of Beakers, Pipettes, dishes, measuring cylinders (100 to 1000 cc capacity) glass rods and funnels, glass thermometers range 0°C to 100°C and metallic thermometers range 300°C	1 Dozen each
8)	Hot plates 200 mm dia (1500 watt)	6
9)	Enamel trays	
	(a) 600 mm x 450 mm x 50 mm	10
	(b) 450 mm x 300 mm x 40 mm	10
	(c) 300 mm x 250 mm x 40 mm	6
	(d) Circular plates of 250 mm dia.	6
10)	Water Testing Kit	1
11)	First Aid Box	1
12)	Spatula Set of 100 and 200 long	3
13)	Digging Tools (pixels, shovel, fork etc.)	As reqd.
14)	Miscellaneous tools (sledge hammer, lump hammer, wooden pegs etc.)	As reqd.

S. No	Item, Specifications	Nos. required
15)	Maximum and Minimum Thermometer	2 Set
16)	Rain Gauge	1 Set
17)	Timer 0-60 minutes with alarm & 1/5 sec accuracy.	3 Sets
B: For Soils and Aggregates		
1)	Water still, 3 liter/hr with fittings and accessories	1
2)	Liquid limit device with Casagrande and ASTM grooving tools as per IS: 2720	1
3)	Sampling pipettes fitted with pressure and suction inlets, 10 ml. Capacity	2 set
4)	Compaction apparatus (Proctor) as per IS: 2720 (Part 7) complete with collar, base plate and hammer and all other accessories	1 set
5)	Modified AASHTO compaction apparatus as per IS. 2720 (Part 8) 1983 or Heavy Compaction Apparatus as per IS complete with collar, base plate, hammer and all other accessories	1 set
6)	Sand pouring cylinder with conical funnel and tap and complete as per IS 2720 (Part 28) 1974 including modified equipment	4
7)	Ennore Standard Sand	As Reqd.
8)	Sampling tins with lids 100 mm dia x 75 mm ht ½ kg capacity and miscellaneous items like moisture tins with lid (50 grams) etc.	12
9)	Lab CBR testing equipment for conducting CBR testing, load frame with 5 Tonne capacity, electrically operated with speed control as per IS: 2720 (Part 16) and consisting of following:	1 set
	(a) CBR moulds 150-mm dia – 175-mm ht. complete with collar, base plate etc.	24
	(b) Tripod stands for holding dial gauge holder	24
	(c) CBR plunger with settlement dial gauge holder	1
	(d) Surcharge weight 147-mm dia 2.5 kg wt.	48
	(e) Spacer disc 148-mm dia, 47.7-mm ht. With handle	3
	(f) Perforated plate (Brass)	24
	(g) Soaking tank for accommodating 24 CBR moulds	
	(h) Proving rings of 1000 kg, 2500 kg and 5000 kg capacity	1 each
	(i) Dial gauges, 25 mm travel- 0.01 mm/division	10
	(j) Aluminium Tins	
	50x30mm	36 nos
	55x35mm	36 nos
	70x45mm	36 nos
	70x50mm	36 nos
	80x50mm	36 nos
10)	Standard Penetration test equipment	1
11)	Nuclear moisture Density meter or equivalent	2
12)	Speedy moisture meter complete with chemicals	4
13)	Unconfined compression test apparatus	1 set
14)	Aggregate Impact Test Apparatus	1
15)	Aggregate Impact Test Apparatus as per IS 2386 (Part 4) 1963	1
16)	Los Angeles abrasion Test Apparatus as per IS 2386 (Part 4) 1963	4
17)	Riffle Box of Slot size of 50mm as per ASTM C-136	1
18)	Dynamic Cone Penetrometer	1
19)	Hydrometer with high speed stirrer and jars	2 sets
20)	Post-hole augur (to BS-812)	3
C: For Bitumen and Bituminous Mixes		
1)	Constant temperature bath for accommodating bitumen test specimen, electrically operated and thermostatically controlled (to accommodate minimum six Specimens)	2

S. No	Item, Specifications	Nos. required
2)	Penetrometer automatic type, adjustable weight arrangement and needles as per IS. 1203 – 1978	2
3)	Soxhlet extraction or centrifuge type apparatus complete with extraction thimbles with stocks of solvent and filter paper	1
4)	Bitumen laboratory mixer including required accessories (20 ltrs.)	1
5)	Marshall compaction apparatus automatically operated as per ASTM 1559-62 T complete accessories (with 180 N Marshall Moulds	1 set
6)	Distant Reading Digital Thermometer for Measuring Temperatures in Asphaltic Mixes	As required
7)	Riffle Box	1
8)	Automatic Asphalt Content Gauge [Nuclear or equivalent]	1
9)	Thin film Oven test apparatus for modified binder either with PMB or CRMB	1
10)	Ring Ball Apparatus as per IS 1205- 1978	1
11)	Asphalt Institute Vacuum Viscometer as per IS 1206 (part II) – 1978	1
12)	BS U- Tube Modified Reverse Flow Viscometer IS 1206 (Part III) – 1978	1
13)	Apparatus for Determination of Ductility Test as per IS 1208 – 1978	1
14)	Pen Sky – Martin closed Tester for testing flash and fire point as per IS 1209 – 1978.	1
15)	Apparatus for Float Test – IS – 1210 – 1978	1
16)	Apparatus for Determination of water content (Dean and Stark Method) IS – 1211 – 1978	1
17)	Apparatus for Determination of Loss on Heating IS – 1212-1978.	1
18)	Apparatus of Determination of specified Gravity IS-1202-1978	1
19)	Core cutting machine suitable for upto 150mm dia. Core	1
20)	Apparatus for Elastic Recovery test for Modified Bitumen	1
21)	Apparatus for Storage Stability test for Modified Bitumen	1
22)	Apparatus for Separation test for Modified Bitumen	1
23)	Sand Equivalent test apparatus	1
24)	Mastic Asphalt Hardness testing equipment	1
25)	Automatic Asphalt content Meter	1
D: For Cement, Cement Concrete and Materials		
1)	Water still	1
2)	Vicat needle apparatus for setting time with plungers, as per IS. 269-1967	1
3)	Moulds	
	(a) 150 mm x 300 mm ht cylinder with capping component along with the capping set and compound as per IS	As required
	(b) Cube 150mm, and 100mm (each size)	As required
	(c) 150mmx100 mm x600mm beam for flexural strength	As required
4)	Concrete permeability apparatus	1
5)	High frequency mortar cube vibrator for cement testing	1
6)	Concrete mixer power driven, 1 cu ft capacity	1
7)	Variable frequency and amplitude vibrating table size 1 metre x 1 metre as per the relevant British Standard	1
8)	Flakiness & Elongation test apparatus	2each
9)	Aggregate impact test apparatus as per IS 2386 (Part 4) 1963	2
10)	Los Angeles abrasion apparatus as per IS. 2386 (Part 4) 1963	1
11)	Flow table as per IS 712-1973	1
12)	(a) Equipment for slump test	2
	(b) Compaction factor test equipment	1
13)	Equipment for determination of specific gravity for fine and coarse	2

S. No	Item, Specifications	Nos. required
	aggregate as per IS 2386 (Part 3) 1963	
14)	Compression and Flexural strength testing machine of 200T capacity with additional dial for flexural testing	1
15)	Core cutting machine with 100 mm dia. Diamond cutting edge	1
16)	Needle vibrator	1
17)	Vibrating hammer as per BS specification	1
18)	Air entrainment meter ASTM C - 231	1
19)	0.5 Cu. ft, 1 Cu. ft cylinder for checking bulk density of aggregate with tamping rod	1
20)	Soundness testing apparatus for cement (Lee Chatlier)	1
21)	Flexural Beam testing machine with accessories	1
22)	Chemicals solutions and consumable	As reqd.
23)	Chloride Testing kit for chemical analysis of chloride content.	1
24)	ION Exchange kit for rapid determination of sulphate content.	1
E: For Control of Profile and Surface Evenness		
1)	Precision automatic level with micrometer attachment	2 sets
2)	Distomat or equivalent	2 Nos.
3)	Theodolite – Electronically operated with computerised output attachment	2 sets
4)	Total Station with all accessories	2 sets
5)	Roughometer (Towed Fifth Wheel Bump Indicator)	1 set
6)	3 metre straight edge and measuring wedge	2 sets
7)	Camber templates 2 lane	
	(a) Crown type cross-section	2 sets
	(b) Straight run cross-section	2 sets
8)	String line Arrangement with sensor paver	1
9)	Steel tape	
	(a) 5 m long	as reqd
	(b) 10 m long	as reqd
	(c) 20 m long	as reqd
	(d) 30 m long	as reqd
	(e) 50 m long	As reqd
10)	Precision Staff	3 Sets
11)	BBD Test Equipment with Accessories	1 Set

Note:

- 1) The laboratory set-up must be complete including a set of reference standards, adequately staffed and operational to the satisfaction of the Engineer not later than 2 months from the date of receipt of Notice to commence the works. The Contractor shall be responsible for the provision of adequately experienced and qualified laboratory staff, in sufficient numbers to be able to meet all testing requirements to the approval of the Engineer, and for the supply of all transportation of staff, testing equipment and samples necessary to allow the testing to be performed in a time scale compatible with the needs of the Site.
- 2) The laboratory setup may be reduced after issue of Taking Over Certificate with the approval of Engineer.

Sub Clause 120.4 Maintenance

This Clause shall read as under:

"The Contractor shall arrange to maintain the laboratory in satisfactory manner and will carry stocks of spare equipment and laboratory consumables until the issue of Performance Certificate. Maintenance include the day to day upkeep of the laboratory building and the surroundings, attending to repairs to various parts of the building, furniture, fittings, office/laboratory equipments and the concerned services as and when necessary, including the periodic white/colour washing of building and painting of wood, steel work, replacing the broken window/door/ventilator, glasses, furniture and other hardware and maintaining necessary watch and ward during the day and night.

The Contractor shall arrange to provide uninterrupted supply of electricity and water for the laboratory building. In case of failure of main power/water supply, alternate source shall be available for providing uninterrupted supply."

CLAUSE 122 PROVIDING AND MAINTAINING VEHICLES FOR THE EMPLOYER

Sub-Clause 122.1 Scope

The work covers providing and maintaining of hard top, non AC passenger car for use by the Employer.

Sub-Clause 122.2 Description

The passenger cars shall be petrol or diesel driven having adequate cylinder capacity. The number of vehicles to be provided by the Contractor shall be decided by the Engineer at various times, out of the total provision in the Bill of Quantities and indicated in writing.

The Contractor shall provide within one month from the date of order by the Engineer, vehicles as indicated above. The vehicles shall be provided and maintained until issue of the taking Over Certificate for the complete Work. Initially, new vehicles shall be provided In case of vehicles of Indian make, a vehicle shall be replaced with a new vehicle after a maximum run of 75,000 km or two years whichever is earlier. All necessary taxes for operating the vehicles shall be fully paid and all necessary papers shall be provided as required by prevailing Motor Vehicles Act with comprehensive insurance cover for the vehicles The vehicles shall be provided day and night as required by the Engineer The Contractor shall also make available drivers having valid licence at such times and for such duration as instructed by the Engineer

Sub-Clause 122.3 Maintenance

The vehicles shall be maintained in a smooth running condition. All expenses required for keeping the vehicles in smooth running condition such as fuel, lubrication oil and other consumables, necessary service and maintenance, drivers, repairs and replacement etc. are to be met by the Contractor. In the event of any vehicle being off the road for maintenance work or on account of breakdown, the Contractor shall provide substitute vehicle(s) or substitute vehicle(s) immediately. If the contractor at any time fails to provide vehicle(s) or substitute vehicle(s) as specified above, an amount of Rs 3000 per day or part thereof for each vehicle (that the Contractor failed to provide) shall be debited to the Contractor's account. Also the number of days for which the vehicle(s) were not provided shall not be included for payment.

If the contract works are not completed within the stipulated period or within the granted extended time of completion, provision and maintenance of vehicles in accordance with clause 122.1 through 122.4 shall be carried out by the Contractor at his own cost and no payment shall be made for the same. In case of any failure by the Contractor to do so, an

amount of Rs 3000 per day or part thereof per vehicle shall be debited to the Contractor's account.

Sub-Clause 122.4 Withdrawal of Vehicles

The Contractor shall withdraw particular vehicle/vehicles for the non-use by the Employer if so directed by the Engineer. In such cases the instructions for non-use of vehicle shall be given in writing 15 days in advance and the withdrawal of vehicles shall not be for a period of less than 15 days continuously at a time.

Sub-Clause 122.5 Measurements for Payment

The payment for providing and maintaining vehicles shall be on vehicle day basis for actual number of days the vehicles were provided in satisfactory working order. No payment shall be made for the period of withdrawal as per clause 122.4 irrespective of the fact whether vehicle was available or not.

Sub-Clause 122.5 Rates

The Contract unit rate for providing and maintaining vehicles for the Engineer shall include all expenses towards providing and keeping the vehicles in smooth running condition including taxes etc., mentioned in the preceding paras.

SECTION 200 SITE CLEARANCE**CLAUSE 201 CLEARING AND GRUBBING**

Sub Clause 201.5 Delete 1st sentence in the 1st Paragraph in Sub-Clause 201.5 and add the following sentence.

Clearing and grubbing for road embankment, drains and cross drainage structures shall be measured on area in plan basis in terms of hectares.

CLAUSE 202 DISMANTLING CULVERTS, BRIDGES AND OTHER STRUCTURES/PAVEMENTS**Sub-Clause 202.6 Measurements for Payment**

This Clause shall read as:

The work of dismantling shall be paid for in units indicated below by taking measurements before and after, as applicable:

(i)	Dismantling brick/stone masonry / plain cement concrete / reinforced cement concrete including reinforcement.	Cum
(ii)	Dismantling pavement structures such as Granular Course, Bituminous course, Concrete pavement	Cum
(iii)	Dismantling pipes, guard rails, road kerbs, gutters and fencing	Linear Meter
(iv)	Dismantling Guard Stones/KM stones/Sign post/Hect. Stones/5 th KM stones	Nos
(v)	Dismantling RCC railing	Linear Meter
(vi)	Dismantling angle type expansion joints of bridges	Linear Meter
(vii)	Dismantling of railing kerb	Linear meter
(viii)	Dismantling of Concrete Edge strip without damaging existing structure	Linear Meter
(ix)	Dismantling of Drainage spout including cleaning entire area, enclosure of metallic bearing	Nos.
(x)	Dismantling of Stone pitching/ boulder apron/ brick soling/ stone soling	Cum

SECTION 300 EARTHWORK, EROSION CONTROL AND DRAINAGE**CLAUSE 301 EXCAVATION FOR ROADWAY AND DRAINS****Sub-clause 301.3.5 Rock Excavation**

The first sentence of first paragraph shall read "Rock, when encountered in road excavation shall be removed up to a level of 150mm below the base of WMM".

Sub-clause 301.3.7 Excavation of road shoulders/verge/medians for widening of pavement or providing treated shoulders:

The 2nd sentence of this Clause shall read as under:

The Subgrade material within 500mm from the bottom of the pavement for the widened portion and paved shoulder shall be loosened and recompactd as per Clause 305 if it does not meet the compaction requirement of Table 300-2.”

Sub Clause 301.6 Preparation of Cut Formation

Third paragraph shall be read as under:

“In rock formation, the rock shall be cut 150mm below the specified elevation of base of WMM and the surface irregularities shall be corrected. The gap between rock cut and base of WMM shall be filled with 150mm thick granular sub-base as per Grading-V of Table 400-1 of Clause 401. The unsuitable material shall be disposed of in accordance with Clause 301.3.11”.

Sub Clause 301.8 Measurements for Payment

In first line of first paragraph add “and drains” after the word “roadway”

CLAUSE 304 EXCAVATION FOR STRUCTURES

Sub Clause 304.3.2 Excavation

At the end of 1st paragraph of Clause 304.3.2 insert the following additional sentences:

“The Contractor shall ensure the stability and structural integrity of adjacent existing foundations and structures and if necessary shall, at his own expense, install temporary or permanent sheet piles, coffer dams, shoring or similar support or protection to the satisfaction of the Engineer.”

CLAUSE 305 EMBANKMENT CONSTRUCTION

Clause 305.2.1.6 The 1st sentence of this Clause shall read as under:

“The material to be used in subgrade shall conform to the design CBR value of not less than as specified in the drawing at the specified density and moisture content of the test specimen.”

Clause 305.2.2.4 Compaction Requirements

In Clause 305.2.2.4 after the 1st paragraph delete Table 300-2 and substitute the following:

Table 300-2: Compaction Requirements for Embankment and Sub-grade

S. No.	Type of Work/Material	Relative Compaction as %age of maximum laboratory dry density as per IS 2720 (Part 8)
1	Subgrade and earthen shoulders	Not less than 97%
2	Embankment (Except top 200mm)	Not less than 95%
3	Embankment (For top 200mm)	Not less than 97%
4	High Embankment (Height >6m)	Not less than 97%
5	Expansive clays	Not allowed
6	Design CBR of Subgrade & Shoulder shall be as per Drawing, but not less than 8%	

Sub-Clause 305.9.1

Add new sub section as (xv) “slush removal”

Sub Clause 306.4 Replace Sub-clause 306.4 with the following:

“The soil erosion, 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

Sub Clause 306.5 Rates

This Clause shall be deleted.

Sub-Clause 309.4 Measurements for Payment

This Clause shall read as:

“Construction of drains shall be measured as finished work in position as below:

a)	Excavation for drain	As per Clause 301
b)	Plain Cement concrete grade M15	Cubic metre
c)	Reinforced Cement Concrete grade M25	Cubic metre
d)	Steel Reinforcement	Tonne
e)	Weep holes	Nos.
f)	Grating	Nos
g)	Drainage Chute	Running metre
h)	Energy Dissipation Basin	Nos.
i)	Loose Boulder Apron	Cubic meter

SECTION 400 SUB-BASES, BASES (NON-BITUMINOUS) AND SHOULDERS**CLAUSE 401 GRANULAR SUB-BASE****Sub Clause 401.2 Materials****Sub Clause 401.2.1 The Clause shall read as follows:**

“The material to be used for the work shall be crushed stone conforming to the physical requirements stipulated in Sub-Clause 401.2.2. The material shall be free from organic or other deleterious constituents and conform to Grading-V of Table 400-1.”

Sub Clause 401.3 Construction Operations**Sub-Clause 401.3.1: Preparation of Sub grade**

Add the following paragraphs at the end of the 1st paragraph of Sub-Clause 401.3.1: Preparation of Sub grade

Where the existing pavement is to be overlaid by a granular base/ sub-base, then the pavement shall be scarified in accordance with Sub Clause 501.8.3.2. Where the existing pavement contains multiple bituminous layers the scarification shall be to the underside of the lowest bituminous layer. The Contractor will verify that all bituminous layers have been removed using appropriate methods approved by the Engineer. The bituminous surfacing material removed from the existing pavement may be used in other parts of the works as directed by Engineer provided it complies with the relevant specification clauses.

After scarification and removal to the satisfaction of the Engineer of the bitumen surface from the existing pavement to be overlaid, the surface shall be lightly sprinkled with water if necessary and rolled with three passes of an 8-10 Ton smooth wheeled roller. The existing pavement shall then be proof rolled with an 8 tonne single drum vibrating roller in the presence of the Engineer who shall determine suitability of the surface for overlay.

CLAUSE 406 WET MIX MACADAM SUB-BASE/BASE**Sub Clause 406.2 Materials****Sub-Clause 406.2.1 Physical requirements**

Add following after 2nd Sentence in 1st Paragraph in the Sub Clause 406.2.1.1 and replace with the following Sentence:

“The constituents of the aggregates shall be produced by an integrated crushing and screening plant (200T/hour) having appropriate primary crusher, secondary cone crusher, vertical shaft impactor and vibratory screen, unless otherwise instructed by the Engineer, crushing shall be carried out in at least two stages. The fraction of material passing through 4.75mm sieve shall also be crusher run screening only.”

Sub-Clause 406.3 Construction Operations**Sub Clause 406.3.4 Spreading of Mix**

Replace “may” with “shall” in the 1st sentence of 2nd paragraph of Sub-Clause 406.3.4.

Delete the last paragraph of Sub-Clause 406.3.4.

Sub-Clause 406.3.5 Compaction

Delete second sentence of Paragraph 1 of Clause 406.3.5.

CLAUSE 410 FOOTPATHS AND SEPARATORS

Replace the entire Clause 410 with the following:

410.1 Scope

The work shall consist of constructing footpaths and/or separators at locations as specified in the drawings or as directed by the Engineer. The lines, levels and dimensions shall be as per the drawings. The scope of the work shall include provision of all drainage arrangements as shown in the drawings or as directed.

410.2. Materials

The footpaths and separators shall be constructed with the following type:

Precast cement concrete block/tiles of Grade M20 as per Sections 1700 of the Specifications. The minimum thickness of the cement concrete block/tile shall be 25 mm and minimum size shall be 300 mm x 300mm.

410.3. Construction Operations

410.3.1 Drainage pipes below the footpath originating from the kerbs shall be first laid in the required slope and connected to the drains/sumps/storm water drain/drainage chutes as per provisions of the drawings, or as specified.

410.3.2 Portion on back side of kerbs shall be filled and compacted with granular sub-base material as per Clause 401 of the Specifications in specified thickness.

410.3.3 The base shall be prepared and finished to the required line, levels and dimensions as indicated in the drawings with the following:-

- (a) Minimum 150 mm thick, compacted granular sub-base material as per Clause 401 of the Specifications.
- (b) Minimum 25 mm thick cement concrete of Grade M15.

Over the prepared base, precast concrete tiles shall be set/laid as described in Clauses 410.3.4.

410.3.4 Precast cement concrete tiles:

The tiles shall be set on a layer of average 12 mm thick cement-sand mortar (1:3) laid on prepared base in such a way that there is no rocking. The gaps between the tiles shall not be more than 12 mm and shall be filled with cement-sand mortar (1:3).

410.4 Measurements for Payment

Footpaths and separators shall be measured in sq. meter between inside of kerbs.

410.5 Rates

Contract unit rates shall be inclusive of full compensation of all labour, materials, tools, equipments and incidentals to construction of footpaths. Cost of providing pipes and arrangement for their discharge into appropriate drainage channels shall be incidental to the construction of footpaths.

SECTION 500 BASE AND SURFACE COURSES (BITUMINOUS)**CLAUSE 501 GENERAL REQUIREMENTS FOR BITUMINOUS PAVEMENT LAYERS****Sub Clause 501.2 Materials****Sub-Clause 501.2.2 Coarse Aggregates**

Delete “, crushed gravel or other hard material” from 1st Line of Para 1.”

Para 2 is deleted.

Sub Clause 501.3 Mixing

Line 1, Paragraph 1, replace “Adequate Capacity” with “Hot mix plant of Batch Mix type of minimum capacity of 160 T per hour.”

Sub Clause 501.6 Compaction

Replace the sentence “The intermediate rolling0.56 MPa.” **with** “The intermediate rolling shall be done with a smooth wheeled tandem vibratory roller of 8-10 tonne weight followed by a pneumatic tyre roller of 12-15 tonnes weight having nine wheels, with a tyre pressure of at least 0.56 MPa.” **in 2nd paragraph.**

CLAUSE 502 PRIME COAT OVER GRANULAR BASE**Sub-Clause 502.2 Materials**

Sub-Clause 502.2.1 This Clause shall be read as under:

502.2.1 The primer shall be cationic bitumen emulsion SS1 grade conforming to IS: 8887 and shall be refinery produced.”

Sub Clause 502.8 Rate

This Clause shall be read as under:

“The contract unit rate for prime coat shall be payment in full for carrying out the required operations including full compensation for all components listed in Clause 501.8.8 and as applicable to the work specified in these Specifications.”

CLAUSE 503 TACK COAT**Sub-Clause 503.2 Materials**

This Clause shall be read as under:

“The binder used for tack coat shall be low viscosity paving bitumen of VG10 grade conforming to IS: 73 and shall be refinery produced.”

Sub Clause 503.8 Rate

This Clause shall be read as under:

“The contract unit rate for tack coat shall be payment in full for carrying out the required operations including full compensation for all components listed in Clause 501.8.8 and as applicable to the work specified in these Specifications.”

CLAUSE 505 DENSE BITUMINOUS MACADAM

Sub-Clause 505.2.1 Bitumen

This Clause shall be read as under:

“The bitumen shall be paving bitumen of viscosity grade VG-30 complying with Indian Standard Specifications for “Paving Bitumen”, IS: 73.”

Sub-Clause 505.2.2 Coarse Aggregates

Delete the words “, crushed gravel or other hard material’ from the first sentence of Clause 505.2.2.

Delete 2nd paragraph of Clause 505.2.2.

Sub-Clause 505.2.3 Fine Aggregates

Replace the words “or natural occurring mineral material, or a combination of the two” with “material” in the 1st sentence of the Clause 505.2.3.

Delete the 4th sentence of the Clause 505.2.3.

Sub Clause 505.2.4 Filler

“The first sentence of this clause shall read as “Filler shall consist of finely divided hydrated lime”

Sub Clause 505.2.5 aggregate Grading and Binder Content

Add the following at the bottom of **Table 500-10**:

“The grading of the aggregate mix as used in work shall be a smooth curve within and approximately parallel to the envelope in Table 500-10”.

Sub-Clause 505.9 Rate

Add the words “except for item of prime coat and tack coat” after the words “required operations” in 2nd line.

CLAUSE 507 BITUMINOUS CONCRETE

Sub-Clause 507.2.1 Bitumen

This Clause shall be read as under:

“The bitumen shall be paving bitumen of viscosity grade VG-30 complying with Indian Standard Specifications for “Paving Bitumen”, IS: 73.”

Sub-Clause 507.2.2 Coarse Aggregates

Delete the words “and where crushed gravel is proposed two fractured faces” from the first sentence of Clause 507.2.2.

Sub Clause 507.2.5 aggregate Grading and Binder Content

Add the following at the bottom of **Table 500-17**:

The grading of the aggregate mix as used in work shall be a smooth curve within and approximately parallel to the envelope in Table 500-17”.

Sub-Clause 507.9 Rate

Replace “504.9” with “505.9” in the Clause 507.9.

CLAUSE 508 CLOSE GRADED PREMIX SURFACING/MIXED SEAL SURFACING

Sub Clause 508.1 Scope

Sub Clause 508.1.2

This Clause shall read as under

Close graded Premix surfacing shall be “Type B”

Sub Clause 508.2 Materials

Sub-Clause 508.2.1 Binder

This Clause shall be read as under:

“The binder shall be paving bitumen of viscosity grade VG-30 complying with Indian Standard Specifications for “Paving Bitumen”, IS: 73.”

Sub-Clause 508.2.2 Coarse Aggregates

Replace “511.1.2.2” with “510.1.2.2” in the Sub-Clause 508.2.2.

Sub-Clause 508.2.3 Fine Aggregates

Delete the words “, or natural sand or a mixture of both” with “material” in the 1st sentence of the Clause 508.2.3.

Sub Clause 508.8 Rate

Add the words “except for item of prime coat and tack coat” after the words “required operations” in 2nd line.

CLAUSE 510 OPEN GRADED PREMIX SURFACING**Sub Clause 510.1 Open-Graded Premix Surfacing using Viscosity Grade Paving Bitumen****Sub Clause 510.1.2 Materials****Sub Clause 510.1.2.1 Binder**

This Clause shall read as under

“The binder shall be paving bitumen of viscosity grade VG-30 complying with Indian Standard Specifications for “Paving Bitumen”, IS: 73.”

Sub Clause 510.1.8 Rate

Add the words “except for item of prime coat and tack coat” after the words “required operations” in 2nd line.

CLAUSE 516 MASTIC ASPHALT**Sub-Clause 516.2 Materials****Sub-Clause 516.2.2 Coarse Aggregates**

Delete the words “, crushed gravel/shingle or other stones” from the first sentence of Clause 516.2.2.

Fine Aggregates

Delete the words “, natural sand or a mixture of both” in the 1st sentence of the Clause 516.2.2.

Sub-Clause 516.4.5 Spreading

Replace “Table 500-6” with “500-5” in sub-paragraph 2) of 4th paragraph of Sub-Clause 516.4.5.

Sub-Clause 516.4.7 Surface Finish

Replace “retained on the 6.7 mm sieve” **with** “retained on the 9.5 mm sieve” in 4th line of Sub-Clause 516.4.7.

SECTION 800 TRAFFIC SIGNS, MARKINGS AND OTHER ROAD APPURTENANCES**Clause 801 Traffic Signs****Sub-Clause 801.2.6** This clause shall read as under:

“Concrete shall be M25 grade.”

Sub-Clause 801.2.5 The 1st sentence shall read as under:

“The substrate shall be either Aluminium sheeting or Aluminium Composite material (ACM) Aluminium sheets used for sign boards shall be smooth, hard and corrosion resistant aluminium alloy conforming to IS 736 Material Designation 24345 or 1900”

Sub-clause 801.3.2.1 High Intensity Grade (Type III)

This shall be deleted.

Sub-clause 801.4 Installation

Sub-clause 801.4.1 The 1st sentence of Clause shall read as follows:

Traffic Signs shall be mounted on support posts, which shall be of MS pipe 80mm dia. (NB-MW) or as shown in the drawing.

Sub-clause 801.4.2 Add following at the end of this clause:

“The sign back shall be painted with two coats of grey colour epoxy paint. The sign post shall be painted in black & white alternate bands with two coats of epoxy paint.”

Clause 802 OVERHEAD SIGNS

Sub-Clause 802.4.2 Replace the words “they shall IS Specifications.” **with** “they shall be thoroughly descaled, cleaned, primed along with all other components of signs, except reflective portion. They shall be painted with two coats of epoxy paint. The sign back side shall be painted with grey colour and post shall be painted in black & white alternate bands. The post below ground shall be painted with three coats of red lead paint.

CLAUSE 803 ROAD MARKINGS

Sub Clause 803.2 Materials

This clause shall read as under:

“Road markings shall be of hot applied thermoplastic compound and the materials shall meet the requirements as specified in Clause 803.4.

Sub Clause 803.8.11 Measurement for Payment

The 1st sentence of this Clause shall read as under:

“The Audible and Vibratory pavement markings shall be measured in square metre of area including the gaps.”

CLAUSE 805 DISTANCE INDICATOR POST

Sub Clause 805.3 The first sentence of this Clause shall read as under:

“The hectometre/kilometre/5th kilometre distance indicator posts shall be made of concrete of grade as shown in the drawing.”

Sub Clause 805.5 Rate

This Clause shall read as under:

“The Contract unit rate for hectometre/kilometre/5th kilometre distance indicator posts shall be payment in full compensation for furnishing all labour, materials, tools, equipment including cost of excavation, foundation in M15 grade concrete, formwork, backfilling, etc and making the posts, painting and lettering and fixing at site and all other incidental costs necessary to complete the work to these Specifications.”

CLAUSE 807 BOUNDARY STONES

Sub Clause 807.1 Scope

Add at the end of Paragraph 1, “The boundary stones shall be of concrete as shown in drawing.” The words ‘SH-.....’ or as directed by the Engineer should be engraved on each stone appropriately.

CLAUSE 809 TUBULAR STEEL RAILING

Sub Clause 809.3 Add the following to the end of this Sub-Clause:

“The railing shall be embedded in the concrete foundation of size and the grade of concrete along with the depth of the embedment of post as indicated in the drawing.”

Sub Clause 809.5 Rate

After the words “test and final erection at site” in 3rd line of this Clause, add the words “including cost of excavation, concrete foundation etc.”

CLAUSE 811 CRASH BARRIER

Sub Clause 811.2 Concrete Crash Barrier

Sub Clause 811.2.1 Materials

Sub Clause 811.2.1.2 This Clause shall read as under:

“The grade of concrete shall be M-40.”

Sub Clause 811.2.2 Construction Operations

Sub Clause 811.2.2.2 Replace “Clause 810.2.2.3” **with** “Clause 811.2.2.3” in the 4th line of 1st paragraph of Clause 811.2.2.2.

CLAUSE 811.3 Metal Beam Crash Barrier

Sub Clause 811.3.1.2 Replace 1st paragraph of Sub-Clause 811.3.1.2 **with** the following:

Metal beam is a “W” profiled corrugated beam as specified in drawings made from hot dip galvanised rail of 3.0 mm thick using high strength steel of IS:5986 Fe 510 grade and have properties as under:

Ultimate Tensile Strength (Min.): 483 Mpa.

Yield stress (Min.): 345 Mpa.

Elongation (Min.) in 50mm: 12%

The beam after forming shall have formed width of 312 mm and depth of 81 mm and shall have punched holes for fixing as specified in drawings.

The steel post and the blocking out spacer shall both be channel section of 75 mm x 150 mm & size 5 mm thick conforming to IS: 5986 grade Fe.360 as specified in drawings. The rail shall be 73 cm above the ground level and posts shall be spaced 2.0 m centre-to-centre. Double “W” beam barrier shall be as indicated in the drawing.

The Guardrail reflector shall be hot dip galvanized 0.55 kg per square meter.

Test specimens for mechanical properties and coating shall be prepared and tested as specified in relevant IS codes.

Sub Clause 811.3.1.3 This Clause shall read as under:

“Concrete for bedding and anchor assembly shall conform to Section 1700 of these Specifications. The size of the concrete foundation block for embedding the posts and grade of concrete shall be as shown in the drawing.”

Sub-Clause 811.3.3 Installation of Posts

The sub-clause 811.3.3.1, 811.3.3.2, 811.3.3.3 and 811.3.3.4 are replaced as below:

“The steel posts shall be embedded in the concrete foundation of size and the grade of concrete along with the depth of the embedment of post as indicated in the drawing.”

Sub Clause 811.3.3.5 This Clause shall read as under:

“Posts and end section for metal beam guardrails on bridges shall be bolted to the structure as detailed in the drawings. The anchor bolts shall be set to proper location and elevation with templates and carefully checked.”

Clause 811.3.4.3 Add at the end of this Clause:

“The guard rail reflector shall be bolted replacing splice washer at every 10th posts interval.”

Sub-Clause 811.3.7 Measurements for Payment

Sub-Clause 811.3.7.1 The 2nd sentence "Terminals/anchors of various types shall be paid by numbers" is **deleted**.

Sub-Clause 811.3.7.2 This Clause shall read as under:

“No separate measurement for payment shall be made for Terminals/anchors of various types required for the work. The cost of these elements shall be deemed to be included in the rate quoted by the Contractor. Furnishing and placing anchor bolts and/or devices for guard rail posts on bridges shall be considered incidental to the construction and the costs thereof shall be included in the price for other items of construction.”

Sub-Clause 811.3.7.3 The words “and concreting” shall be added after the words “or backfilling”.

Sub Clause 811.3.8 Rate

Add the words “**and drawings**” at the end of the last sentence in Sub-Clause **811.3.8**.

SECTION 1000 MATERIALS FOR STRUCTURES.**CLAUSE 1002 SOURCES OF MATERIALS**

Add the words “at his own expense” at the end of 3rd paragraph of Clause 1002.

CLAUSE 1006 CEMENT

The 1st paragraph of this Clause shall read as follows:

“Cement to be used in bridge structures shall conform to the following standard:
IS:12269 – Specification for 53 Grade Ordinary Portland cement.

For other works Ordinary Portland cement 43 grade, conforming to IS 8112 shall be used with the prior approval of the Engineer.”

CLAUSE 1007 COARSE AGGREGATES

Delete **the following from 3rd and 4th lines of 1st paragraph “Crushed gravel
.....inert material”**

CLAUSE 1008 SAND/FINE AGGREGATES

Delete from the 1st line the word “or crushed gravel sand” and from the 2nd line “or gravel” in Paragraph 2.

CLAUSE 1014 STORAGE OF MATERIALS**Sub Clause 1014.3: Add the following to the Sub-clause 1014.3:**

“Aggregates shall be stored or stockpiled in their respective size in such a manner that the various sizes will not become intermixed before proportioning. They shall be stored, stockpiled and handled in such a manner that will prevent contamination by foreign materials.”

SECTION 1500 FORMWORK**CLAUSE 1501 DESCRIPTION**

Add the following paragraphs at the end of this Clause:

“The Contractor shall prepare a formwork mobilization and utilization plan and submit the plan for Engineer’s approval at least 21 days before the commencement of construction of structures. The requirement of formwork shall be worked out considering the overall construction program of all the structures to be cast in one or more stages, as specified in the drawings. The plan shall take into account the time required for erection of formwork, retention in position, stripping, and removal and subsequent use in the next and subsequent structures.

Notwithstanding Engineer’s approval of mobilisation plan, if due to any reason, Contractor has to arrange additional formwork, to meet the requirements of the construction program, it shall be done by the Contractor without any extra cost to the Employer.”

CLAUSE 1502 MATERIALS

Delete **the last sentence in 1st paragraph.**

Delete **the word “or timber” in 1st line of 2nd paragraph.**

CLAUSE 1506 PRECAUTIONS

Add the following as items (vii) and (viii) to this Clause:

- vii) Adequate support against sideway and lateral loads due to construction operations and wind shall be provided.
- viii) In case cantilevers are supported directly from the ground, the supports for cantilevers shall be removed simultaneously with main supports only after approval for the same from the Engineer.

Clause 1513 Rate

Add the following at the end of the first paragraph:

“The unit rate shall also include all costs for preparation of erection scheme, designs of false work and formwork.”

SECTION 1600 STEEL REINFORCEMENT**CLAUSE 1602 GENERAL**

Paragraph 2 of Clause 1602 shall read as follows:

“Reinforcements shall be High Strength Deformed Steel Bars (HSD) of grade Fe 500D conforming to IS: 1786. Only uncoated steel shall be used as reinforcement unless specified.”

CLAUSE 1603 PROTECTION OF REINFORCEMENT

Replace “1010.3.2” with “1009.3.2” in 2nd line of 3rd paragraph of Clause 1603.

CLAUSE 1605 PLACING OF REINFORCEMENT

Add the following as sub Para (f) to this Clause:

Tolerances:

1. Tolerance of cover: Deviation shall not exceed + 10 mm No negative tolerance is allowed.
2. Tolerance in position: Tolerance for deviation from the positions shown in the drawings shall not exceed the following:

Structural depth d (mm)	Tolerance (mm)
d < 1000	< 10
1000 < d < 2000	< 0.01d
2000 < d	< 20

SECTION 1700 STRUCTURAL CONCRETE**CLAUSE 1705 ADMIXTURES****Sub Clause 1705.1: Chemical Admixtures**

Replace “Clause 1007” with “Clause 1012” in the 3rd paragraph of Sub-Clause 1705.1.

CLAUSE 1706 SIZE OF COURSE AGGREGATE

Table 1700-7 shall be modified as given below:

Components	Maximum nominal size of Coarse aggregate (mm)
a. RCC Well Curb.	20
b. RCC / PCC well steining, PCC below foundations and approach slab, annular filling around foundations.	40
c. Well cap or pile cap; solid wall type abutments, piers, median walls, splayed wing walls and their foundations.	40
d. RCC works in T-beam and slab / solid slab / voided slab and box girder superstructure, wearing coat, kerb, crash barrier, approach slab, dirt walls, coping on masonry wing walls, hollow abutments and piers, pier / abutment caps, pedestals, dirt walls, piles, all components of counter fort type abutments, columns, cantilever return walls etc.	20
e. All PSC works	20
f. Any other item	As specified by the Engineer

Clause 1707 EQUIPMENT

The Para “a (i) & (ii)” shall be replaced with the following:

For production of concrete, batching and mixing of the concrete shall be done in a concrete batching and mixing plant fully automatic of a minimum capacity of 15 cum/hour. The plant shall be approved by the Engineer.”

CLAUSE 1715 HIGH PERFORMANCE CONCRETE**Sub Clause 1715.9: Additional Tests for Concrete**

Replace “Clause 1714.3” with 1714.4 in 2nd line of Sub-Clause 1715.9.

CLAUSE 1800 PRESTRESSING**CLAUSE 1803 MATERIALS****Sub Clause 1803.2.2**

Replace “1804.6” with “1805.6” in 3rd line of 3rd paragraph of Clause 1803.2.2.

SECTION 2000 BEARINGS**CLAUSE 2005 ELASTOMERIC BEARINGS****Sub Clause 2005.4: Acceptance Specifications**

In Paragraph 5, substitute the words "Engineer or his authorised representative" for the word "Inspector".

Sub-Clause 2005.4.5 Inspection Certificate

Substitute the words "Engineer or his authorised representative" for the word "Inspector".

Sub-Clause 2005.4.6 Quality Control Certificate

Delete the words “/Inspector” in sub-paragraph b) of 1st paragraph.

CLAUSE 2009 MEASUREMENTS FOR PAYMENT

Add the following after Paragraph 2:

"Tar Paper bearings shall be measured in square meters."

CLAUSE 2011 TAR PAPER BEARING

Add the new Clause 2011 at the end of the Section 2000.

“2011 TAR PAPER BEARING

Tar Paper bearing shall be reinforced bitumen laminated Kraft paper conforming to the requirements of IS- 1398.”

CLAUSE 2100 OPEN FOUNDATIONS**CLAUSE 2104 WORKMANSHIP****Sub Clause 2104.1 Preparation of Foundations**

Replace “M10” with “M15” in 5th line of 1st paragraph of Clause 2104.1.

Sub Clause 2104.3 Construction

Replace “M10” with “M15” in 1st & 7th line of sub-paragraph ii) of Clause 2104.3.

SECTION 2200 SUB-STRUCTURE**CLAUSE 2208 TOLERANCES IN CONCRETE ELEMENTS**

Add the following paragraph at the end of Clause 2208

Variations at top levels of side drains, ± 10 mm
Precast slabs, haunches supporting precast slabs

Structures not meeting dimensional tolerances shall be rectified to the satisfaction of Engineer – failing with structures shall be dismantled and reconstructed at the expense of the Contractor and no additional payment shall be made for this..

CLAUSE 2210 RATE

This Clause shall read as under:

“The contract rate for masonry, concrete reinforcement and weep hole in substructure shall include all works as given in respective sections of these Specifications and cover the cost of all incidental items like providing cofferdams, dewatering, providing special formwork, where necessary, and all other items for furnishing and providing substructure as mentioned in this Specifications and shown on the drawings.

The necessary material (asphaltic/bituminous board or equivalent material) and labour, tools etc. required for maintaining 20 / 40 mm gap between faces of various structures (old / new) wherever required / as shown in drawing shall be incidental to work and shall not be measured / paid separately.”

SECTION 2500 RIVER TRAINING AND PROTECTION WORK

CLAUSE 2504 PITCHING/REVTMENT ON SLOPES

Sub Clause 2504.3 Construction Operations

Replace “Clause 1405.3” **with** “Clause 1405.1.3” in 3rd line of 3rd paragraph of Clause 2504.3.

CLAUSE 2507 CURTAIN WALL AND FLEXIBLE APRON

Sub Clause 2507.1 Curtain Wall

The last sentence of this Clause shall read as:

“The curtain wall shall be in cement concrete grade as shown in the drawing.”

SECTION 2700 WEARING COAT AND APPURTENANCES

Sub Clause 2702.1 Bituminous Wearing Coat

Add following para at the end of this clause:

“In case of structures having strip seal expansion joint, wearing coat shall be laid first and expansion joint shall be installed thereafter matching with the profile of already constructed wearing coat.”

CLAUSE 2703 RAILING AND CRASH BARRIER

2703.1 General

Add para i) after para h) as follows:

“Grade of concrete crash barriers on deck slab.Approach slab etc.Shall be M40.”

CLAUSE 2706 WEEP HOLES

This Clause shall read as under:

“Weep holes shall be provided in solid plain concrete / reinforced concrete/ brick or stone masonry abutments, wing walls, return walls as shown in the drawing or as directed by the Engineer to drive moisture from the back filling. Weep holes shall be provided with 100mm dia PVC (6 Kg/cm²) pipe and shall extend through the full width of concrete/masonry with slope of about 1 vertical: 20 horizontal towards the draining face.”

CLAUSE 2708 MEASUREMENT FOR PAYMENT

Sub-paragraph i) of this Clause shall read under:

“i) Cement wearing coat shall be measured in cubic metres. Bituminous wearing coat be measured in square metres. Steel reinforcements in concrete wearing coat shall be measured in tonnes.”

Sub-paragraph iii) of this Clause shall read under:

“iii) Concrete crash barriers shall be measured in linear metres of concrete in place, including approach and departure ends. Reinforcement for the crash barrier and steel rails on the top of crash barrier shall be included in the rate of concrete crash barrier and shall not be measured and paid separately. The painting shall be measured in square meter. .”

SECTION 2900 PIPE CULVERTS**CLAUSE 2910 MEASUREMENT FOR PAYMENT**

“RCC pipe culverts shall be measured along their centre between the inlet and the outlet ends in linear metres between outer faces of head walls.

Ancillary works like headwalls, Aprons, selected granular material and cement concrete for pipe bedding etc., shall be measured as provided for under the respective Sections.”

CLAUSE 2911 RATE

This Clause shall read as under:

“The Contract unit rate for the pipes shall include the cost of pipes including loading, unloading, hauling, handling, storing, laying in position and jointing complete and all incidental costs to complete the work as per these Specifications.

Ancillary works such as excavations including backfilling, concrete, selected granular material for pipe bedding, cement concrete for pipe bedding and masonry shall be paid for separately, as provided under the respective Clauses.”

ADDITIONAL TECHNICAL SPECIFICATIONS

The Additional Technical Specifications provided here in this section shall be read in conjunction with General Technical Specifications and Particular Specifications included.

CLAUSE A-1 SPECIFICATIONS FOR PART – 2 WORKS**Clause A-1.1 General**

During the Part-2 Works, the Employer shall provide to the Contractor access to the Site for Maintenance in accordance with this Contract. The obligations of the Contractor hereunder shall include:

- (a) permitting safe, smooth and uninterrupted flow of traffic;
- (b) undertaking routine maintenance of all the works undertaken as Part-1 Works including but not limited to repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, road signs and other traffic control devices;
- (c) undertaking repairs to structures;
- (d) informing the Engineer of any unauthorised use;
- (e) informing the Engineer of any encroachments; and
- (f) operation and maintenance , route patrolling and administrative systems necessary for the efficient maintenance of the Project Road in accordance with the provisions of this Contract.

The Contractor shall remove promptly from the Project Road any waste materials (including hazardous materials and waste water), rubbish and other debris (including, without limitation, accident debris) and keep the Project Road in a clean, tidy and orderly condition, and in conformity with the Applicable Laws, Applicable Permits and Good Industry Practice.

Clause A-1.2 Maintenance Requirement

The Contractor shall ensure and procure that at all times during the Part-2 Works; the Project Road conforms to the maintenance requirements set forth in these specifications.

Clause A-1.3 Components of Part-2 Works

The Part-2 Works for the roads shall in general consist of the following activities:

- a) Maintenance of carriageway and paved/earthen shoulders
- b) Maintenance of side slopes, drainage and CD works
- c) Maintenance of Road side furniture including Road Signage, pavement marking, Kerbs and delineators
- d) Maintenance of Road lighting if any
- e) Maintenance of horticulture and avenue trees
- f) Maintenance of Rest area and other project facilities
- g) Maintenance of Bridges including foundation, sub structure, superstructure, bearings and expansion joints

The Contractor shall repair and rectify the defects and deficiencies specified in the table below within the time limit set forth.

Nature of Defect or deficiency		Time limit for repair/rectification
ROADS		
(a)	Carriageway and paved shoulders	
(i)	Breach or blockade	Temporary restoration of traffic within 24 hours; permanent restoration within 15 (fifteen) days
(ii)	Pot holes	24 hours
(iii)	Any cracks in road surface	15 (fifteen) days
(iv)	Any depressions, rutting exceeding 10 mm in road surface	15 (thirty) days
(v)	Bleeding/skidding	7 (seven) days
(vi)	Any other defect/distress on the road	15 (fifteen) days
(vii)	Damage to pavement edges	15 (fifteen) days
(viii)	Removal of debris, dead animals	6 hours
(b)	Granular/ earth shoulders, side slopes, drains and culverts	
(i)	Variation by more than 1 % in the prescribed slope of camber/cross fall (shall not be less than the camber on the main carriageway)	7 (seven) days
(ii)	Edge drop at shoulders exceeding 40 mm	7 (seven) days
(iii)	Variation by more than 15% in the prescribed side (embankment) slopes	30 (thirty) days
(iv)	Rain cuts/gullies in slope	7 (seven) days
(v)	Damage to or silting of culverts and side drains	7 (seven) days
(vi)	Desilting of drains in urban/semi-urban areas	24 hours
(vii)	Railing, parapets, crash barriers	7 (seven) days (Restore immediately if causing safety hazard)
(c)	Road side furniture including road sign and pavement marking	
(i)	Damage to shape or position, poor visibility or loss of retro-reflectivity	48 hours
(ii)	Painting of km stone, railing, parapets, crash barriers	As and when required/Once every year
(iii)	Damaged/missing road signs requiring replacement	7 (seven) days
(iv)	Damage to road marking	7 (seven) days
(d)	Road lighting (if any)	
	Any failure of the system including bulb replacement	24 hours

Nature of Defect or deficiency		Time limit for repair/rectification
(e)	Trees and plantation	
(i)	Obstruction in a minimum head-room of 5 m above carriageway or obstruction in visibility of road signs	24 hours
(ii)	Removal of fallen trees from carriageway	4 hours
(iii)	Deterioration in health of trees and bushes	Timely watering and treatment
(iv)	Trees and bushes requiring replacement	30 (thirty) days
(v)	Removal of vegetation affecting sight line and road structures	15 (fifteen) days
(f)	Other Project Facilities and Approach roads	
(i)	Damage in approach roads, pedestrian facilities, truck lay-byes, bus-bays, bus-shelters, cattle crossings	15 (fifteen) days
(ii)	Cleaning of toilets	Every 4 hours
(iii)	Defects in electrical, water and sanitary installations	24 hours
(iv)	Damaged vehicles or debris on the road	4 (four) hours
(v)	Malfunctioning of the mobile crane	4 (four) hours
Bridges		
(a)	Superstructure	
(i)	Any damage, cracks, spalling/ scaling a. Temporary measures b. Permanent measures	a. within 48 hours b. within 15 (fifteen) days or as specified by the Engineer
(b)	Foundations	
(i)	Scouring and/or cavitation	15 (fifteen) days
(c)	Piers, abutments, return walls and wing walls	
(i)	Cracks and damages including settlement and tilting, spalling, scaling	30 (thirty) days
(d)	Bearings (metallic) of bridges	
(i)	Deformation, damages, tilting or shifting of bearings	15 (fifteen) days Greasing of metallic bearings once in a year
(e)	Joints	
(i)	Malfunctioning of joints	15 (fifteen) days
(f)	Other items	
(i)	Deforming of pads in elastomeric bearings	7 (seven) days
(ii)	Gathering of dirt in bearings and joints; or clogging of spouts, weep holes and vent-holes	3 (three) days

Nature of Defect or deficiency		Time limit for repair/rectification
(iii)	Damage or deterioration in kerbs, parapets, handrails and crash barriers	3 (three) days (immediately within 24 hours if posing danger to safety)
(iv)	Rain-cuts or erosion of banks of the side slopes of approaches	7 (seven) days
(v)	Damage to wearing coat	15 (fifteen) days
(vi)	Damage or deterioration in approach slabs, pitching, apron, toes, floor or guide bunds	30 (thirty) days
(vii)	Growth of vegetation on the structure or obstructing the waterway	15 (fifteen) days

Clause A-1.4 Maintenance Programme

The Contractor shall prepare a monthly Maintenance Programme in consultation with the Engineer and submit the same to the Engineer not later than 10 (ten) days prior to the commencement of the month in which the Maintenance is to be carried out. For this purpose a joint monthly inspection by the Contractor and the Engineer shall be undertaken. The Maintenance Programme shall contain the following:

- (a) The condition of the road in the format prescribed by the Engineer;
- (b) the proposed maintenance works; and
- (c) deployment of resources for maintenance works.

Clause A-1.5 Safety, vehicle breakdowns and accidents

The Contractor shall ensure safe conditions for the Users, and in the event of unsafe conditions, lane closures, diversions, vehicle breakdowns and accidents, it shall follow the relevant operating procedures for removal of obstruction and debris without delay. Such procedures shall conform to the provisions of this Contract, Applicable Laws, Applicable Permits and Good Industry Practice.

The Contractor shall maintain and operate vehicle patrol, a round-the-clock vehicle rescue post with one mobile crane having the capacity to lift a truck with a Gross Vehicle Weight of 30,000 (thirty thousand) kilograms; and such post shall be placed at the location as decided by the Engineer.

Contractor shall report all accidents to the police forthwith and submit a monthly report in the format approved by the Engineer. Contractor shall coordinate with the Ambulance services offered by Emergency Medical Transport Service (EMTS) provided by Department of Health & Family welfare, Govt. of Uttar Pradesh.

Clause A-1.6 Lane Closure

The Contractor shall not close any lane of the Project Road for undertaking maintenance works except with the prior written approval of the Engineer. Such approval shall be sought by the Contractor through a written request to be made at least 5 (five) working days before the proposed closure of lane and shall be accompanied by particulars thereof. Within 3 (three) working days of

receiving such request, the Engineer shall grant permission with such modifications as it may deem necessary and a copy of such permission shall be sent to the Employer.

Clause A-1.7 Measurement for payment

The Measurement shall be in Km-month i.e. length in km certified by the Engineer for the satisfactory maintenance of the Works multiplied with the time in the month for which maintenance works are performed.

Clause A-1.8 Rate

Rate shall include the cost of materials, labour, equipment and other incidentals to complete the work as per the specifications.

CLAUSE A-2 INTER LOCKING CONCRETE BLOCKS

Clause A-2.1 Scope

The scope of work involves laying of Precast M-50 grade interlocking concrete blocks of 100mm thick laid on 30 mm thick prepared sand bed conforming to IRC: SP: 63 and as directed by Engineer. The shape of blocks, the source of supply, the methodology for laying of blocks shall be got approved from Engineer before the start of the work. The bedding sand and joint filling sand should conform to para 6.6 of IRC: SP: 63.

Clause A-2.2 Unit of measurement

The unit of measurement shall be the area of the finished item of work of interlocking blocks measured in plan in sq m.

Clause A-2.3 Rate

The unit cost includes full compensation for laying the sand bed and laying the interlocking tiles, edge restraint blocks including the cost of all materials, labour and other incidentals to complete the work as per these Specifications.

CLAUSE A-3 Tree Plantation

Clause A-3.1 Scope

The scope of work involves the plantation along the project road and as directed by Engineer. All the plants will be produced from established nursery. All plants are to be supplied in standard container/ bags and shall have grown to the approved heights. The source of sampling, tree plantation plan and drawings shall be approved by the Engineer.

The contractor shall mark proposed planting locations for the approval of the Engineer, minimum 7 days before planting is to commence. Planting holes will be excavated to the dimensions as shown on the drawings or as per direction of the Engineer. The use of an auger or similar implement to excavate planting holes is not acceptable. The contractor shall test the fertilizer for conformance of constituent elements prior to using the fertilizer in the work. The plant fertilizer shall be a slow release type in pellet form with 8-9 month release period and an N:P:K ratio approximately equal to 20:4:8. Fertilizer shall delivered to the site not less than two weeks prior and in unopened standard bags or containers bearing the manufacture's description, analysis of constituents and quantity. The contractor shall submit the proposals for mulch to the Engineer for approval, 21 days before planting. The mulch will be free of soil, weeds, stones, vermin, insects or other foreign material. Mulch will be spread to a depth as required by the drawing and specification. The maintenance period for planting will end at the completion of the

defects liability period for the relevant road section or 12 months from the completion of planting, whichever occurs. The contractor will be responsible for all maintenance requirements from the time of seeding and planting to the end of the maintenance period. During the maintenance period the contractor will be responsible for keeping all plants and materials secure from damage by animals or left. The contractor will submit a written report to the Engineer within four (4) days of each maintenance inspection. The Contractor will obtain the Engineer's written approval to the type of chemical proposed for spraying before spraying is carried out spraying will also be carried out in accordance with the manufactures recommendations and only on windless days. The Engineer as required may direct additional spraying. In no circumstances are pesticides to be used without the written consent of the Engineer. Pesticides and their application shall comply with requirements of the relevant laws and regulations.

Clause A-3.2 Unit of measurement

The unit of measurements for tree planting shall be per "each" "surviving" plant (the surviving plants will be counted at the end of the defects liability period for the respective section or road or 12 months from the completion of planting on the said section of road, whichever is later.

The rate for planting is to include supply from storage site, site preparation, excavation (in all types of material), backfilling, mulching fertilizing, watering and maintenance of trees of the specified size.

Payment of 50% of the scheduled rate shall be paid at the satisfactory completion of planting. The final payment of 50% shall be made at the end of the maintenance period for those trees, which are healthy at that time.

The unit of measurement shall be number of tree survived for 1 year after plantation of the same along the project road.

Clause A-3.3 Rate

The unit cost includes tree survived for 1 year after plantation of the same along the project road.

CLAUSE A-4 Tree Protection

Clause A-4.1 Scope

Protection of tree shall be done by the Contractor with tree guard of brick work. The half brick circular tree guard shall be provided having 2nd class brick, internal diameter 1.25 metres, height 1.5 metres above ground and 0.50 metre below ground with cement mortar 1:6 as per complete design. The source of 2nd class brick and drawings of brick tree guard shall be approved by the Engineer.

Clause A-4.2 Unit of measurement

The unit of measurements for brick tree guard planting shall be "number" for each tree guard.

Clause A-4.3 Rate

The unit cost includes brick tree guard survived for 1 year.

CLAUSE A-5 Environmental Monitoring**Clause A-5.1 Scope**

The Contractor shall conduct the environmental monitoring through NABL/approved monitoring agencies during construction stage of the project as per following monitoring plan and final approval of environmental monitoring shall be given by the Engineers.

Environmental Monitoring Plan:

Parameters	Standards	Locations	Frequency	Duration
PM ₁₀ µg/m ³ , PM _{2.5} µg/m ³ , SO ₂ , NO _x , CO	National Ambient Air Quality Standard (CPCB, 18 th Nov, 2009)	Plant site, HMP Stone Crusher and construction site in consultation with Engineers (3 locations)	Once in 3 month for 2 years excluding monsoon period)	Continuous 24 hours
pH, Temperature, DO, BOD, COD, Oil & Grease, Total Suspended Solid, turbidity, Total Hardness, Chlorine, Iron, Total Coliform	Surface Water Quality Standard	The water bodies along the project road at 3 locations in consultation with Engineers.	Once in a season excluding monsoon for 2 Years	Grab Sampling
pH, Temperature, TSS, Total hardness, Suspended Solid, Chlorine, Iron, Sulphate, Nitrate	Ground Water Quality Standard- IS: 10500, 1991	Construction site (2 locations at camp site)	Once in 3 months for 2 Years	Grab Sampling
Leq dB (A) (Day and Night) Average and Peak values	Ambient Noise Standard (CPCB, 2000)	At equipment yards and locations as identified along the project road by Engineers (3 locations)	In the interval of 3 months for 2 Years	Readings to be taken at 60 seconds interval for every hour and then Leq are to be obtained for Day time and Night time
Physical Parameter: Texture, Grain Size, Gravel, Sand, Silt, Clay; Chemical Parameter: pH, Conductivity, Calcium, Magnesium, Sodium, Nitrogen, Absorption Ratio	Soil	Near Construction sites along the road as identified by the PMC (3 locations)	In the interval of 3 months for 2 Years	-

Clause A-5.2 Measurement of Payments

The unit number of Ambient Air, Ambient Noise, Surface water, Ground water and Soil shall be measured and shall be verified by the Engineer.

Clause A-5.3 Rate

The contract rate for environmental monitoring shall include the sampling of environmental components and submission of reports to the Engineers and the sampling

and report submission shall only be done by NABL environmental monitoring agency or approved agencies.

CLAUSE A-6 Oil and Grease Interceptors

Clause A-6.1 Scope

The oil and grease interceptors shall be provided at camp site. The schematic plan of Oil & Grease Interceptor is given in ANNEX-A and same shall be approved by the Engineer.

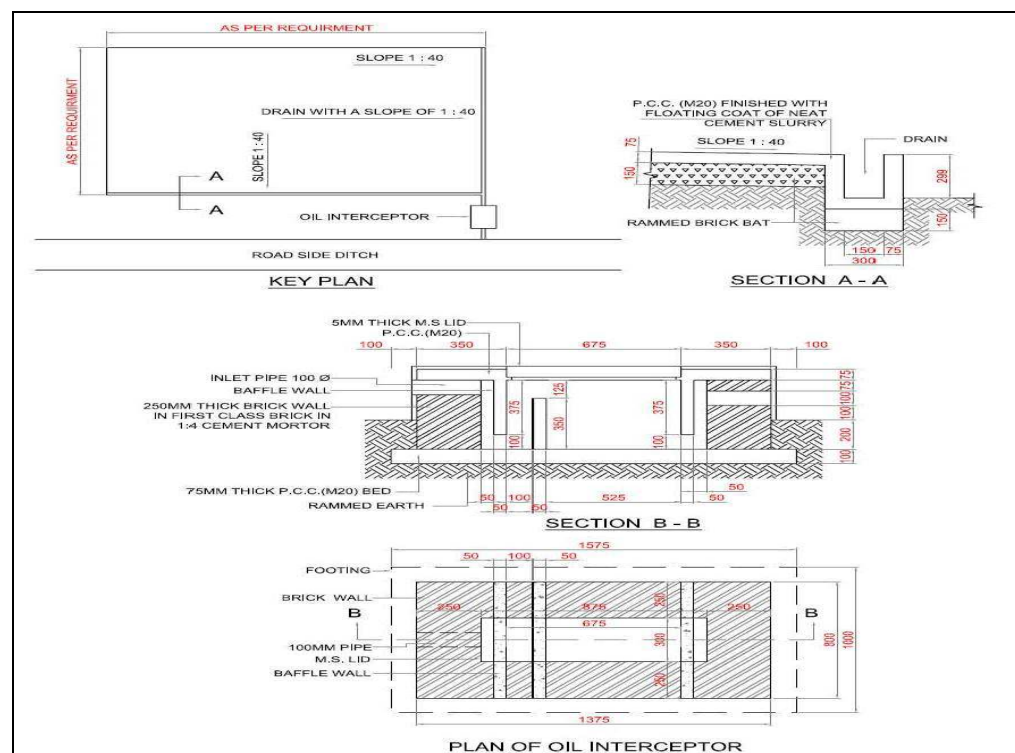
Clause A-6.2 Unit of measurement

The unit of measurements for Oil and Grease Inceptor shall be “each” number provided in camp site.

Clause A-6.3 Rate

The unit cost includes functioning of Oil & Grease Interceptors throughout the construction period and payment shall be in two parts i.e 50 % at the time of construction & functioning for next 3 months and 50 % at the end of the project.

ANNEX-A: Schematic plan of oil interceptor for removal of Oil & Grease Interceptors



CLAUSE A-7 Rain Water Harvesting Structure along the Project road

Clause A-7.1 Scope

The Water harvesting structure along shall be provided at an interval of 500 m along both side of the project road. The purpose of water harvesting structure is to recharge the water

table along the project area. The schematic plan of Water harvesting structure is given in ANNEX-B. The contractor shall submit a detailed drawing based on this schematic plan and get it approved by the Engineer before the start of the work

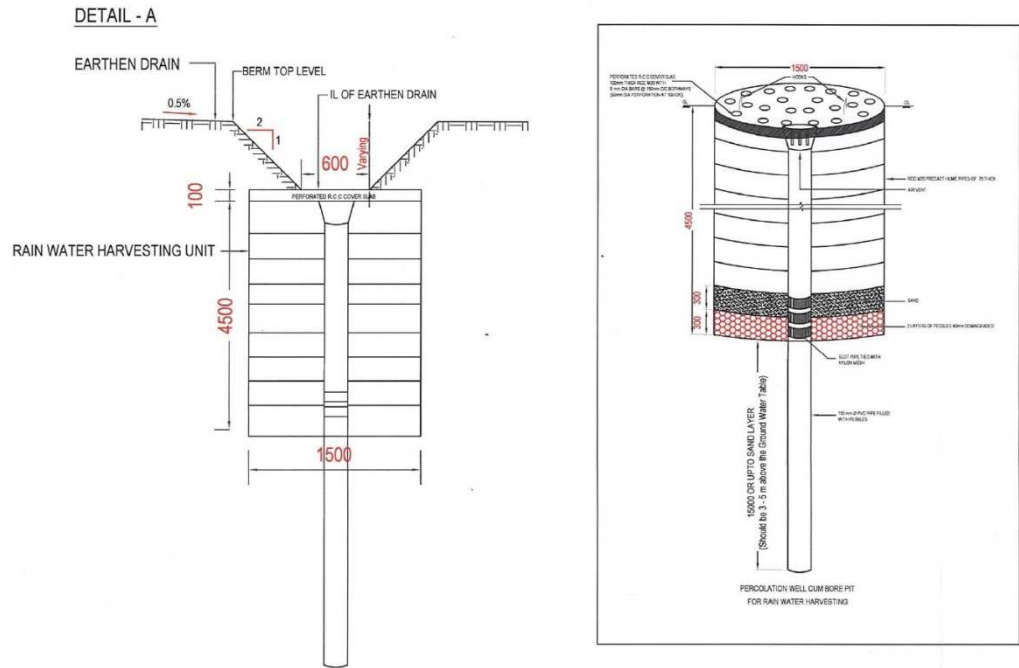
Clause A-7.2 Unit of measurement

The unit of measurements for Water harvesting structure shall be number provided along the project road. Payment shall be in two parts with 50 % at the time of construction and 50 % at the time of completion of Part-1 Works at satisfactory functioning of the same. The confirmation of satisfactory functioning shall be certified by the Engineer.

Clause A-7.3 Rate

The unit cost of water harvesting structure shall be inclusive of all labour, material, machineries and other incidentals to complete the work as per these Specifications.

ANNEX-B



Clause A-8 Dowel bars in deck slab / brick masonry at locations of parapet and expansion joints and grouting with epoxy resin locations.

Holes shall be drilled vertically using rotary drill machines. Care shall be taken that the holes are drilled vertical and the deck concrete / brick masonry is not damaged. It shall be drilling by avoiding locations above reinforcement. Rebar detector shall be used for this purpose. 16mm dia dowel bars shall be inserted in the hole and kept in undisturbed position with appropriate fixture. The annular space shall be filled by epoxy grouting.

Work of epoxy grouting shall be done in accordance with clause 2803 of these Specifications. It shall be ensured that the inside of the hole is dry.

Epoxy resin shall be Resicrete 21 or equivalent with following properties:

Compressive strength -min 35 MPa at 24 hours.

Tensile strength -15 – 20 MPa at 7 days

Flexural strength -30-40 MPa at 7 days

Viscosity @ 250 C -900-1200 cps

Clause A-8.1 Unit of measurement

Drilling of holes [300 mm deep for concrete and 500 mm deep for brick masonry] for dowel bars and grouting with epoxy shall be measured separately in numbers. Reinforcement shall be measured separately.

Clause A-8.2 Rate

Rate for drilling holes shall be all inclusive for machinery, labors, materials and other incidentals to complete the work as per these specifications.

Clause A-9 Providing and fixing drainage spouts in existing structures

For all existing bridge decks drainage spouts to be replaced with new drainage spouts as shown in the drawings for solid slab / box & girder superstructure. The work shall be executed in accordance with Section 2700 of these specifications to the extent modified below.

The work shall be done after the existing wearing coat is removed. The existing spouts shall be removed carefully with minimum damage to surrounding concrete. The pocket formed ~ 500mm x 500 mm shall be sufficiently large to ensure good flow and compaction of non-shrink cement sand mortar of strength > M 35 around the new drainage spout adequately.

Clause A-9.1 Unit of measurement

Replacing old or installing new drainage spouts in concrete deck shall be measured in numbers.

Clause A-9.2 Rate

Rate for Replacing old or installing new drainage spouts in concrete deck shall be all inclusive for machinery, labors, materials and other incidentals to complete the work as per these specifications.

Clause A10 Clearing of steel rocker-roller bearings and removal of all debris around bearings including fixing missing parts

All existing steel rocker-roller and plate shall be thoroughly cleared. The abutment caps / pier shall be cleared of all debris around the bearings. Debris shall be removed by water jetting and other suitable means as approved by the Engineer. All bearings shall be cleared and missing parts shall be installed as per manufacturer, s specifications duly approved by Engineer.

Clause A-10.1 Unit of measurement

Cleaning and retrofitting of missing parts of roller – rocker bearings like stopper plate, spacer plate etc. shall be measured in number of bearings.

Clause A-10.2 Rate

Rate for Cleaning and retrofitting of missing parts of roller – rocker bearings like stopper plate, spacer plate etc shall be all inclusive for machinery, labors, materials and other incidentals to complete the work as per these specifications.

Clause A-11 Sitting Bench

Clause A-11.1 Scope

The sitting bench of dimension 1.5 meter x 0.5 meter shall be provided as part of environmental enhancement of Cultural properties/PanchayatChabutra along the project road.

The detail of sitting bench is given in ANNEX-C. The Contractor shall take the approval from the Engineer before construction of the sitting bench.

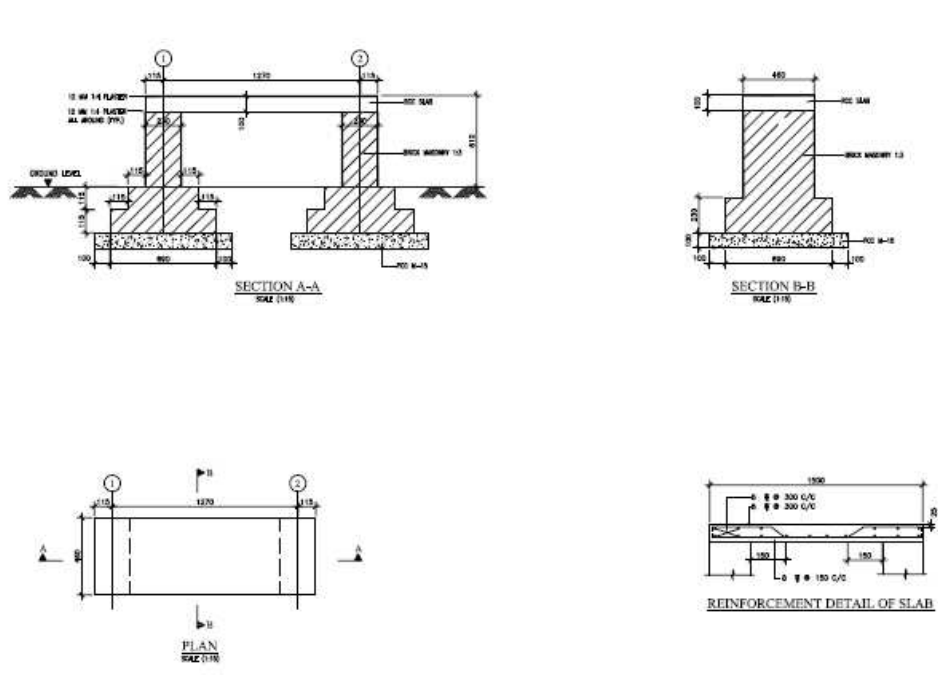
Clause A-11.2 Unit of measurement

The unit of measurements for sitting bench shall be in number provided as part of environmental enhancement along the project road. Payment shall be in two parts with 50 % at the time of construction and 50 % at the time of completion of Part-1 Works.

Clause A-11.3 Rate

The unit cost of sitting bench shall be inclusive of all labour, material, machineries and other incidentals to complete the work as per these Specifications.

ANNEX-C



- NOTES:-**
- (1) ALL DIMENSIONS ARE IN mm.
 - (2) GRADE OF CONCRETE IS M25.
 - (3) CLEAR COVER SLAB REINFORCEMENT-25 MM.

Section – 6: Drawings

Drawings are submitted in a separate Volume

Section 7: Bill of Quantity

PREAMBLES TO BILLS OF QUANTITIES

1. PREAMBLES

- 1.1 The bills of quantities shall be read in conjunction with the instructions to bidders, general and special conditions of contract, specifications and drawings.
- 1.2 The quantities given in the bills of quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out in accordance with the contract requirements, valued at the rates and prices in the bills of quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.
- 1.3 Rates and prices in the bills of quantities shall be quoted by the Bidder in Indian Rupees (ITB Clause 14.1) and shall, except insofar as otherwise provided under the Contract, include all constructional plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.
- 1.4 A rate or price shall be entered against each item in the bills of quantities. The cost of items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the bills of quantities. (Refer ITB Clause 13.2 and Contract Condition Clause 43.3)
- 1.5 The whole cost of complying with the provisions of the Contract shall be included in the items provided in the bills of quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of work.
- 1.6 General directions and descriptions of work and materials are not necessarily repeated or summarized in the bills of quantities. References to the relevant sections of the contract documentation shall be made before entering prices against each item in the bills of quantities.
- 1.7 The method of measurement of completed work for payment shall be in accordance with the measurement provisions contained in the specifications.
- 1.9 Arithmetical errors shall be corrected as per clause 27 of ITB.

ABBREVIATIONS

The following abbreviations shall have the meanings defined below:

cum	cubic meter
cu.cm	cubic centimeter
DBM	Dense Bituminous Macadam
GSB	Granular Sub-Base Course Material
Ha	hectare
km	kilometer
Lm	linear metre
mm	millimeter
MORT&H	Ministry of Road Transport and Highways
Nos. or no.	number
PCC	Profile Corrective Course
INR	Rupees
RCC	Reinforced Cement Concrete
sq.m	square metre
MT	Metric tonne
WMM	Wet Mix Macadam
Veh.days	Vehicle days

The Bill of Quantity is present separately in excel Sheet

Section 8: Forms of Security

Forms of Securities

Acceptable forms of securities are annexed. Bidders should not complete the Performance and Advance Payment Security forms at the time. Only the successful Bidder will be required to provide Performance and Advance Payment Securities in accordance with one of the forms, or in a similar form acceptable to the Employer.

Annex A :	Bid Security (Bank Guarantee)
Annex B :	Performance Bank Guarantee
Annex B1 :	Performance Bank Guarantee for Unbalanced Items
Annex C :	Bank Guarantee for Advance Payment

Form of Bid Security (Bank Guarantee)

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

KNOW ALL PEOPLE by these presents that We _____ [name of bank] of _____ [name of country] having our registered office at _____ (hereinafter called "the Bank") are bound unto _____ [name of Employer] (hereinafter called "the Employer") in the sum of _____¹⁹ for which payment well and truly to be made to the said Employer the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 19____.

THE CONDITIONS of this obligation are:

- (1) If after bid opening the Bidder withdraws his bid during the period of Bid validity specified in the Form of Bid;
- Or
- (2) If the Bidder having been notified of the acceptance of his bid by the Employer during the period of Bid validity:
- (a) fails or refuses to execute the Form of Agreement in accordance with the Instructions of Bidders, if required; or
 - (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to bidders; or
 - (c) does not accept the correction of the Bid Price pursuant to Clause 28.

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

This Guarantee will remain in force up to and including the date _____²⁰ days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE _____ SIGNATURE OF THE BANK _____

WITNESS _____ SEAL _____

[Signature, name and address]

¹⁹ The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 16.1 of the Instructions of Bidders.

²⁰ 45 days after the end of the validity period of the Bid.

Performance Bank Guarantee

To: _____ [name of Employer]
 _____ [address of Employer]

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

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

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

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of _____ [amount of guarantee]²¹ _____ [in words], -and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

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

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

This guarantee shall be valid until.....(i.e.) 28 days from the date of expiry of the Defects Liability Period.

Signature and seal of the guarantor _____

Name of Bank _____

Address _____

Date _____

²¹ An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract and denominated in Indian Rupees.

PERFORMANCE BANK GUARANTEE (for unbalanced items)

To: _____ [name of Employer]
 _____ [address of Employer]

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

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

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

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of _____ [amount of guarantee]²² _____ [in words], and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

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

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

This guarantee shall be valid until.....(i.e.) 28 days from the date of issue of the certificate of completion of works.

Signature and seal of the guarantor _____
 Name of Bank _____
 Address _____
 Date _____

²² An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract and denominated in Indian Rupees.

BANK GUARANTEE FOR ADVANCE PAYMENT

To: _____ [name of Employer]
 _____ [address of Employer]
 _____ [name of Contract]

Gentlemen:

In accordance with the provisions of the Conditions of Contract, sub clause 51.1 (“Advance Payment”) of the above-mentioned Contract, _____ [name and address of Contractor] (hereinafter called “the Contractor”) shall deposit with _____ [name of Employer] a bank guarantee to guarantee his reimbursement of the advance payment in an amount of _____ [amount of guarantee]²³ _____ [in words].

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

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

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

Yours truly,

Signature and seal of the guarantor _____
 Name of Bank/Financial Institution _____
 Address _____

Date _____

²³ An amount shall be inserted by the bank representing the amount of the Advance Payment, and denominated in Indian Rupees.