



GOVERNMENT OF BIHAR

**CONSTRUCTION CUM MAINTENANCE
BIDDING DOCUMENT**

(CMBD)

For

**Construction/Improvement cum
Output And Performance Based Road Assets
Maintenance work.**

December 2013

**PUBLISHED BY
ROAD CONSTRUCTION DEPARTMENT
(FINAL DRAFT)**

CMBD 01.01.2014



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**CONSTRUCTION CUM MAINTENANCE
BIDDING DOCUMENT**

(CMBD)

For

Construction/Improvement cum Output
And Performance Based Road Assets
Maintenance work for the road
..... under road division

.....

CMBD 01.01.2014

Government of Bihar

Road Construction Department

Office of the Executive Engineer, ... Division,.....

CMBD BASED DETAILED NOTICE INVITING TENDER (through e-procurement mode only-

www.eproc.bihar.gov.in)

NIT No.- RCD/ ...(Short name of Division)/...../20.....

1. Designation and Address of the Advertiser

:

2. Date of Issue of Notice Inviting Tender

:

3. Period for download of Tender Document : From..... to.....upto 15.00 hours

(From Website : www.eproc.bihar.gov.in)

4. Date, Time & Place of Pre-Bid meeting : Date.....at 11 hours at the Office of the Chief Engineer,.....Wing,.....(address),RCD, Bihar, Patna.

5. Last Date & time for uploading tender documents by bidder

: Date.....till.time 15.00 Hours on www.eproc.bihar.gov.in

6. Last date, time and place for submission of original instrument of EMD and cost of BOQ+ processing fees.

: Till 15.00 hrs. on or next working day of last date of uploading of tender document by the bidders as stated in above Serial -5

Place: office of the -

(i) Executive Engineer,.....

or

(ii) Superintending Engineer,.....

or

(iii) Chief Engineer,.....

7. Date, time & Place of opening of Technical Bid: Date....., Time- 15.30 hours or next working day of last date of uploading of tender document by the bidders as stated in above Serial -5

Place: On Website - www.eproc.bihar.gov.in

8. Details of works:-

Bid No..	Name of work	Estimated Cost/ECV (Rs in .Lakh).	Amount of Earnest money (Rs in .Lakh).	Cost of B.O.Q+ Bid Processing Fee (non-refundable) in Rs.	Time of completion of work (in month) Including monsoon period, if any.
1	2	3	4	5	6
1	Construction/Improvement cum Output & Performance Based Road Assets Maintenance work for the road (Name of the road) under work division				months for Construction/Improvement work, 60 months for maintenance works excluding additional months for Periodic Maintenance Works.

9. Date, time & place of opening of Financial Bid : Date.....,Time 15.30 hours

Place: On Website - www.eproc.bihar.gov.in

10. Project scope & Work

To under take the Construction/Improvement of road which mainly includes widening and /or strengthening other related & specific work. The scope & work also includes the Ordinary Maintenance work, Periodic Maintenance work and Emergency work of the road/roads after Construction/Improvement. The maintenance work will also include cross- drainage works, minor work on bridges and road side maintenance within the select road limits.

The Ordinary Maintenance work will be carried out under Output and Performance based road maintenance on a lump sum basis paid monthly. Construction/Improvement work will be paid on the basis of item wise actual quantity of work completed, periodic maintenance will be paid as measured quantity to the value of the lump sum. There is a requirement of specialized maintenance equipment and the contract obligation is for continuous output over a period of 60 months (excluding time required for Periodic Maintenance to be done after 48 months from completion of Construction/Improvement work).

11. Bid Validity : 120 Days.

12. Any Contractor registered with the Central Government / any State Government or any PSU or an agency of international or national repute may participate in the tender but registration with the Road Construction Department, Bihar will be essential after issue of L.O.A. and before executing the agreement.

13. Detailed NIT can be seen on web site www.prd.bihar.nic.in or www.eproc.bihar.gov.in or on the notice board of the office of the undersigned.

14. For participating in the above E-Tendering process, the contractors shall have to get themselves registered with the service provider so that user ID, password and Digital Signature are issued to them. This will enable them to access the website www.eproc.bihar.gov.in and

download/participate in E-Tender. For this, intending bidders may contact E-procurement Helpdesk at 1st Floor, M/22, Bank of India Building, Road No.-25, Sri Krishna Nagar, Patna,- 800020, Telephone No. 0612-2523006, Mob No.-9939035696.

15. The undersigned reserves the right to extend or cancel or reject the tender/tenders at any time without assigning any reason thereof. No cost what so ever shall be claimed on such account by the bidder.
16. For any information/complaints the departmental Road Maintenance Cell Phone no.-0612-2545047, Mobile no.-9470001255 and email Id # rcd.roadmaintenance@gmail.com may be contacted.
17. Earnest money in any form as prescribed in rule 161 of the revised PWD code and duly endorsed/pledged to the authorized departmental representative (concerned Executive Engineer) can be in any of the following shapes or combination thereof:-
 - (a) Fixed Deposit receipt of Nationalized /Scheduled Bank.
 - (b) Post Office/Saving Bank Passbook.
 - (c) One, two or three years Post Office time deposit.
 - (d) NSC issued within the State of Bihar.
 - (e) 5 years National Development Bond.
 - (f) State Development Loan Certificate.
 - (g) For works costing more than one Crore, a Bank Guarantee of Nationalized/Scheduled Bank may also be submitted.

The above instrument(s) ***shall be issued on/after the start date of uploading of bid document by the Employer and before/up to the stipulated last date of uploading the bid by the bidder, shall only be applicable. It should be valid for not less than 180 days..***

- 18.(a). A scanned image of form Fee instrument (cost of B.O.Q + Processing fee for Beltron) which is Rs..... (Rs.), paid in the form of D.D of any nationalized/scheduled bank in favour of Executive Engineer, ... Division, ... and payable at.....to be uploaded along with the tender documents.
- (b) A scanned copy of the instrument(s) for Earnest Money as described in Clause 17 above to be uploaded along with the tender documents.
- (c) In respect of 18(a) and (b), the bidder shall also upload details of the instrument(s) including amount, date, serial no., bank on which drawn, office in favour of whom it is drawn/pledged and the place where they are payable.
19. Bidders/ Contractors can access tender documents on the website and must fill them and submit the completed tender documents in electronic form on the website itself. Bidders/ Contractors shall attach scanned copies of all required papers, DD and certificates as required in the eligibility criteria. All the uploaded documents shall have the signature of bidder or their authorized signatories. The scanned copies should be of the original papers and certificates.
20. Corrigendum/ Addendum, if any, will be published on the website itself.

21. .In compliance to Clause no 3 and 4 (of ITB) of CMBD and RCD letter no. 3987(s) dated 28.04.12 and 3407(s) dated 18.3.11 an Affidavit in the format must be attached within the bid document.
22. For any information/complaints the departmental helpline (no 18003456161) may be contacted.
23. Before uploading tenders, bidders are advised to go through the CMBD uploaded with the tender document.
24. Contractor will have to deposit additional performance guarantee for seriously unbalanced rate quoted by him at the time of agreement as per RCD letter No.3376(E)WE dated 17.08.10
25. Bids from joint ventures are allowed as per the eligibility criteria and other instructions issued by Road Construction Department, Bihar. This is available on department website ..
26. In the unlikely event of the server for www.eproc.bihar.gov.in being down for more than two consecutive hours (in the period from midnight to closing time for receipt of tenders) on the last date of receiving of bid, the last date of the same shall automatically be extended to next working day till the last receiving time stipulated in the original NIT.
27. The bidders are requested to check their file size of uploaded documents at the time of submission & they should ensure that work file is uploaded. If they feel that the complete file is not uploaded then they should click on cancel & update the same before submission. The bidders should satisfy themselves of Download ability/visibility of the scanned & uploaded file by them.
28. The bidders are directed to zip their files using WinZip or WinRAR software only. Other formats of zipping will not be accepted and will be rejected.
29. The bidder must use MS Office-2007 or lower version.
30. File size should be less than 5MB and should be in Ms Word, Ms Excel, PDF and JPEG formats.
31. No claim shall be entertained on account of disruption of internet service being used by bidders. Bidders are advised to upload their bids well in advance to avoid last minute technical snags.

Executive Engineer
..... Division, ...
Road Construction Department, Bihar, Patna

Government of Bihar

Road Construction Department

Office of the Executive Engineer, ... Division,.....

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Executive Engineer
..... Division, ...
Road Construction Department, Bihar, Patna

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SECTION 1
INSTRUCTION TO BIDDERS
(Common for Construction and Maintenance work)
(ITB)

Section 1 : Instructions to Bidders

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CMBD 01.01.2014

A. GENERAL

1. Scope of Bid

- 1.1 The Employer (named in Appendix to ITB) invites bids for the construction of works (as defined in these documents and referred to as "the Works") along with post-construction Maintenance (as defined in these documents and referred to as "Maintenance" detailed in the table given in NIT. The bidders may submit bids for any or all of the Works along with Maintenance detailed in the table given in NIT.
- 1.2 The successful bidder is required to complete the Works by the intended completion date specified in the Contract data and shall continue with Maintenance thereafter till the completion of the Contract period as specified in contract data
- 1.3 Throughout these bidding documents, the terms 'bid' and 'tender' and their derivatives (bidder / tenderer, bid/tender, bidding/tendering, etc.) are synonymous.
- 1.4 **Administrative authority shall decide that this agreement would be either PERCENTAGE RATE OR ITEM RATE and accordingly the non-relevant sections of this document must be crossed.**
- 1.5 **Maintenance may include one or more aspects of output and performance based road maintenance namely Ordinary Maintenance, Periodic Maintenance, and Emergency Work, which shall be indicated in the Appendix to ITB and any irrelevant expression shall be deemed to be inoperative in this context if not included in the Appendix to ITB.**

2.1 Source(s) of Funds

- 2.1 The expenditure on this project will be met as decided by the Competent Authority.

3 Eligible Bidders

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

4. Qualification of the Bidder

- 4.1 All bidders shall provide in Section 2(Forms of Bid and Qualification Information), a preliminary description of the proposed work method and schedule, including drawings and charts indicating milestones to complete the project on time.
- 4.2, All bidders shall also furnish the following information in Section 2.
 - (i) Evidence of access to or availability of credit facilities (minimum 10% of estimated cost) certified by the bankers.
 - (ii) Undertaking that bidder would be able to invest a minimum of cost upto 25% of the contract value of work, during implementation of contract.
 - (iii) Proposals, if any, for sub contracting of elements of work, costing more than 10% of the bid amount. (for all contracts over Rs. 5 crore)
 - (iv) Power of attorney, if any.

4.3 If the Employer has not undertaken prequalification of potential bidders, 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;
- (c) Experience in works of a similar (as specified in ITB) nature and size for each of the last five years, and details of works underway or contractually committed; and clients who may be contacted for further information on those contracts;
- (d) Major items of construction equipment proposed to carry out the Contract or evidence of arrangement; of possessing them on hire/ lease/ buying as defined therein;
- (e) Qualifications and experience of key site management and technical personnel proposed for contract;
- (f) Reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five years;
- (g) Evidence of access to line(s) of credit and availability of other financial resources facilities (10% of contract value), certified by the Bankers (Not more than 3 months old)
- (h) Undertaking that the bidder will be able to invest a minimum cash up to 25% of contract value of work, during implementation of work.
- (i) Authority to seek references from the Bidder's bankers;
- (j) Information regarding any litigation, current or during the last five years, in which the Bidder is involved, the parties concerned and dispute amount;
- (k) Proposals for subcontracting components of the Works amounting to more than 10% of the Bid Price (for each, the qualifications and experience of the identified sub-contractor in the relevant field should be annexed); *(for all contracts over Rs. 5 Crore)*
- (l) The proposed methodology and programme of construction, and that of subsequent Maintenance backed with equipment planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability for execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones .

4.4 **(Bids from Joint ventures for projects costing under Rs. 10 crores are not acceptable. Criteria for JV Attached in Annexure III)**

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

- (a) Achieved in any one year a minimum annual financial turnover (in all classes of civil engineering construction works only) volume of construction work of at least the amount equal to the 50 % (fifty percent) estimated cost of works for which bid has been invited. The turnover will be indexed at the rate of 8% for a year.
- (b) Satisfactorily completed as a prime contractor (or as a nominated subcontractor, where the subcontract involved execution of all main items of work described in the bid document, provided further that all other qualification criteria are satisfied) at least one similar work of value not less than amount indicated in the Appendix to ITB (*usually not less than 10%(Ten percent) of the estimated value of the contract*);
- (c) executed in any one year, the minimum quantities (usually 50% of the expected average rate of construction or 50% of the quantities whichever is less) of the following items of work.
 - Concrete works (MORTH Specification Section 1703 all grades)-----

- Non Bituminous Sub –bases and Bases(GSB,WBM,WMM))
(MoRTH Specification Sections 300,400)
- Earthwork in both excavation and embankment combined Quantity M³
- Bituminous Treatment
(BM, DBM, BC, SDBC)
(MORTH Specification Sections 500 & 400) –

**** Also, see section 5, the special condition of contract**

***(d)** For projects costing Rs 10 crores or above, the contractor or his identified sub-contractor must possess required valid electrical license for executing the building electrification works and should have executed similar electrical works for a minimum amount as indicated in Appendix..... in any one year.

- *(e)** The contractor or his identified sub-contractor should possess required valid license for executing the water supply/sanitary engineering works and should have executed similar water supply/sanitary engineering works for a minimum amount as indicated in Appendix in any one year.

** To be deleted for projects costing Rs. 10 Crore or more.*

B. Each bidder should further demonstrate :

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

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

Availability of the testing equipment required for establishing field laboratory to perform mandatory tests e.g. those stated in Appendix to ITB.

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(l) 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 personnel with adequate experience as required; as per Annexure-II.
- (c)** Liquid assets and/or availability of credit facilities of no less than amount indicated in Appendix
(Credit lines/letter of credit/certificates from Banks for meeting the funds requirement etc.- usually the equivalent of the estimated cash flow for 3 months in peak construction period.)

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

4.5 Sub-contractors' experience and resources shall not be taken into account in determining the bidder's compliance with the qualifying criteria except to the extent stated in 4.4(A) above.

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

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

Where

- A = Maximum value of civil engineering works executed in any one year during the last five years (updated to the price level of the year indicated in Appendix) taking into account the completed as well as works in progress.
- **N = Number of years prescribed for completion of the Works (Construction period only) for which bids are invited.
- B = Value (updated to the price level of the year indicated in Appendix) of existing commitments and on-going** works to be completed during the next...N... years (period of completion of the construction works for which bids are invited). Contract, commitment for OPRMC shall be evaluated as indicated in Contract data.

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*

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

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

5. One Bid per Bidder

5.1 Each bidder shall submit only one bid for any work or one package or group. A bidder who submits or participates in more than one Bid (other than as a 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.

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

7. Site Visit

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

7.2. Tender documents are not transferable

**** For ongoing works under OPRMC of RCD the commitments in N years be evaluated as per the approved programme of OPRMC & should be countersigned by the Engineer in charge, not below the rank of an Executive Engineer or equivalent.**

B. BIDDING DOCUMENTS

8. Content of Bidding Documents

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

Section	Particulars	Volume No.
	Invitation for Bids	I
1	Instructions to Bidders	
2	Qualifications of Bidders	
3	(i) Conditions of Contracts For construction (ii) Conditions of Contracts For Maintenance	
4	Contract Data for Construction and Maintenance	
5	(i) Special condition of Contract for construction ii) Particular condition of Contract for Maintenance	II
6	i) Technical Specifications for Construction ii) Technical Specifications for Maintenance	III
7	Bill of Quantities	
8	Securities and other forms	
9	Drawings	IV
10	Documents to be furnished by bidder	V

8.2 One copy of each of the volumes I, II, III and IV will be issued to the bidder Documents to be furnished by the bidder in compliance to section 2 will be prepared by him and furnished as Volume- V in two parts (refer clause 12).

8.3 The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, technical specifications, bill of quantities, forms, Annexes and drawings in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder's own risk. Pursuant to clause 25 hereof, bids which are not substantially responsive to the requirements of the Bid Documents shall be rejected.

9.1 Pre-bid meeting

9.1.1 The bidder or his official representative is invited to attend a pre-bid meeting which will take place at the address, venue, time and date as indicated in appendix.

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

9.1.3 The bidder is requested to submit any questions in writing or by fax to reach the Employer not later than one week before the meeting.

9.1.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be transmitted without delay to all purchasers of the bidding documents. Any modification of the bidding documents listed in Sub-Clause 8.1 which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 10 and not through the minutes of the pre-bid meeting. All

bidders have to collect any addendum on the web site of department. The bidder shall receive the minutes of the meeting on the web site.

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

10. Amendment of Bidding Documents

- 10.1 Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing addendum.
- 10.2 Any addendum thus issued shall be part of the bidding documents and shall be available on the web site.
- 10.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at his discretion, extend as necessary the deadline for submission of bids, in accordance with Sub-Clause 20.2 below.

C. PREPARATION OF BIDS

11. Language of the Bid

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

12. Documents Comprising the Bid

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

Part I shall be named "Technical Bid" and shall comprise

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

Part II shall be named "Financial Bid" and shall comprise

- (i) Form of Bid as specified in Section 6
- (ii) Priced Bill of Quantities for items specified in Section 7

- 12.2 Each part will be separately uploaded in accordance with the Instructions in Clause 19.

13. Bid Prices

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

The bidder shall adopt the percentage rate method or item rate method as specified in the appendix to ITB; only the same option is allowed to all the bidders. Percentage rate method requires the bidder to quote a percentage above/below/ at par of the schedule of rates specified in the appendix to ITB . Rate quoted by bidder shall be within the threshold limit as defined in the Appendix to ITB.

Item rate method requires to quote rates and prices and line item total (both in figures and words) for all items of the Works described in the Bill of Quantities along with total bid price both in figures and words). *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.* Corrections, if any, shall be made by crossing out, initialing, dating and rewriting.

- 13.1.1 All duties, taxes, and other levies payable by the contractor under the contract or for any other cause shall be included in the rates, prices and total Bid Price submitted by the Bidder.
- 13.2 The rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions clause 10CA & 10CC clause Conditions of Contract.
- 13.3 The rate should include the cost of all seen and unseen expenditure. No claim, whatsoever, will be entertained due to non-inclusion of any such event necessary for the completion of the item of work.
- 14. Currencies of Bid and Payment**
- 14.1 The units rates and the prices shall be quoted by the bidder entirely in Indian Rupees. All payments shall be made in Indian Rupees.
- 15. Bid Validity**
- 15.1 Bids shall remain valid for a period not less than 120 days after the deadline date for bid submission specified in Clause 20.A bid valid for a shorter period shall be rejected by the Employer as non-responsive. In case of discrepancy in bid validity period between that given in the undertaking pursuant to Clause 12.1 (v) and the Form of Bid submitted by the bidder, the latter shall be deemed to stand corrected in accordance with the former and the bidder has to provide for any additional security that is required.
- 15.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid.
- 16. Earnest Money**
- 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 NIT for this particular work. This bid security shall be in favour of Executive Engineer as mentioned in the Bihar Financial Rules, and shall be in any of the following forms.
- Indian post office term deposit 1 year/ 2 year/ 3 year; National saving Certificate; Kishan Vikash Patra duly endorsed by the Competent Postal authority in Bihar.
 - Fixed deposit receipt of a Schedule bank, Fixed deposit receipt should be Valid for six months after last date of receipt of tender and shall be pledged in favour of the department.
 - 5 year National Development bond/ State development loan Certificate.
 - Unconditional bank guarantee from any scheduled Indian bank issued within the state in the format given in Vol. III (If issued from any bank outside state will be Converted to any bank within the state before executing the agreement).
- 16.2 Unconditional bank guarantees (and other instruments having fixed validity) issued as surety for the bid shall be valid for 60 days beyond the validity of the bid.
- 16.3 Any bid not accompanied by an acceptable Bid Security and not secured as indicated in Sub-Clauses 16.1 and 16.2 above shall be rejected by the Employer as non-responsive.
- 16.4 The Earnest money of unsuccessful bidders will be returned within 28 days of the end of the bid validity period specified in Sub-Clause 15.1.
- 16.5 The Earnest money of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.
- 16.6 The Earnest money may be forfeited
- if the Bidder withdraws the Bid after Bid opening during the period of Bid validity;
 - if the Bidder does not accept the correction of the Bid Price, pursuant to Clause 26; or
 - in the case of a successful Bidder, if the Bidder fails within the specified time limit to
 - sign the Agreement; or
 - furnish the required Performance Security.

17. Alternative Proposals by Bidder

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

18. Format and Signing of Bid

- 18.1 The Bidder shall submit one set of the Technical bid and two set of Financial bid (original & duplicate) comprising of the documents as described in clause 12 of ITB.
- 18.2 The Bid shall be uploaded on the website..
- 18.3 The Bid shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the bidder, in which case such corrections shall be initialled by the person or persons uploading the bid.

D. SUBMISSION OF BIDS

19. Uploading of Bids

- 19.1 The Bidder shall upload the technical and the financial bid on the website itself.
- 19.2 On the website format of technical and financial bid is available for the particular work.
- 19.3 On the website the bidder shall upload his technical and financial bid well in time as specified in Appendix to ITB.
- 19.4 If the bid is not submitted within time specified in Appendix to ITB or not in conformity with the norms of this document, the Employer will assume no responsibility for its rejection.

20. Deadline for Submission of the Bids

- 20.1 Complete Bids (including Technical and Financial) must be uploaded on website not later than the date and time indicated in appendix.
- 20.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

21. Late Bids

- 21.1 **Any Bid received by the Employer after the deadline prescribed in Clause 20 will be summarily rejected.**

E. BID OPENING AND EVALUATION

22. Bid Opening

- 22.1 The Employer or their authorized representative will open all the Bids received (except those received late), in the presence of the Bidders or their representatives who choose to attend at time, date and the place specified in Appendix in the manner specified in Clause 20 and 22.3. 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. Even in the case of absence of the bidder at the time of opening of bids, department will proceed a head with the opening.
- 22.2 The "Technical Bid" will be opened on the website by engineer –in –charge after verification of Earnest money and cost of BOQ . If the bid security furnished by the bidder does not conform as specified in the Invitation for Bid (ref. Column 4 and paragraph 3), and has not been furnished in the form specified in Clause 16, the bid will be rejected.

- 22.3 (i) The bids accompanied with valid security will be taken up for evaluation with respect to the Qualification Information and other information furnished in Part I of the bid pursuant to Clause 12.1.
- (ii) After receipt of confirmation of the bid security, the bidder may be asked in writing (usually within 10 days of opening of the Technical Bid) to clarify or modify his technical bid, if necessary, with respect to any rectifiable defects.
- (iii) The bidders will respond in within 7 days of issue of the clarification letter.
- (iv) Immediately (usually within 3 to 4 days), on receipt of these clarifications the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration.
- 22.4** Before opening of "Financial Bid", the names of the bidders found responsive in Technical bid in accordance with Clause 22.4(iv) will be announced. The bids of only these bidders will be opened. The responsive Bidders' names, the Bid prices, the total amount of each bid, any discounts, Bid Modifications and withdrawals, and such other details as the Employer may consider appropriate, will be announced by the Employer after opening. Any Bid price or discount, which is not read out and recorded will not be taken into account in Bid Evaluation.
- 22.5 In case bids are invited in more than one package, the order for opening of the "Financial Bid" shall be that in which they appear in the "Invitation For Bid".
- 22.6 The Employer shall prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Sub-Clause 22.5
- 23. Process to be Confidential**
- 23.1** Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not 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.
- 24. Clarification of Financial Bids**
- 24.1** To assist in the examination, evaluation and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdowns of unit rates. The request for clarification and the response shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids in accordance with Clause 26.
- 24.2 Subject to sub-clause 24.1, no Bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer, it should do so in writing.
- 24.3 Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidders' bid.
- 25. Examination of Bids and Determination of Responsiveness**
- 25.1** During detailed evaluation of "Technical Bids", the Employer will determine whether each Bid (a) meets the eligibility criteria defined in Clause 3 and 4; (b) has been properly signed; (c) is accompanied by the required securities and; (d) is substantially responsive to the requirements of the Bidding documents. During the detailed evaluation of the "Financial Bid", the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e., priced bill of quantities, technical specifications, and drawings.
- 25.2 A substantially responsive "Financial Bid" is one which conforms to all the terms, conditions, and specifications of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality or performance of the Works; (b) which limits in any substantial way, inconsistent with the Bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

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

26. Correction of Errors

- 26.1** "Financial Bids" determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

- (a) where there is a discrepancy between the rates in figures and in words, the rate in words will govern; and
- (b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

- 26.2** The amount stated in the "Financial Bid" will be corrected by the Employer in accordance with the above procedure and the bid amount adjusted with the concurrence of the Bidder in the following manner:

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

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

27. Evaluation and Comparison of Financial Bids

- 27.1** The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Sub-Clause 25.2.

- 27.2** In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:

- (a) making any correction for errors pursuant to Clause 26; or
- (b) making an appropriate adjustments for any other acceptable variations, deviations.

- 27.3** The Employer reserves the right to accept or reject any variation or deviation. Variations and deviations and other factors, which are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in Bid evaluation.

- 27.4** If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price 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 31 be increased at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

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

F. AWARD OF CONTRACT

28. Award Criteria

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

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

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

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

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

30. Notification of Award and Signing of Agreement

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

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

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

31. Performance Security

31.1 Within 21 (twenty one) days of receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in any of the forms given below for an amount equivalent 2% of ECV of the construction part and 0.5 % of ECV of maintenance part plus additional security for unbalanced Bids in accordance with the Clause **27.4** of ITB and the provisions of Bihar Financial Rules. After 28 day of successful completion of construction work 1.5% of ECV of maintenance work as performance security is to be delivered to the Employer.

31.2 If the performance security is provided by the successful Bidder in the form of an Bank Guarantee or fixed deposit receipts in the name of Employer, it shall be issued either (a) at the Bidder's option, by a Nationalized/ Scheduled Indian bank within state or (b) acceptable to the Employer.

31.3 Failure of the successful Bidder to comply with the requirements of Sub-Clause 31.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security.

32. Advance Payment and Security

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

33. Corrupt or Fraudulent Practices

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

CMBD 01.01.2014

G. APPENDIX to ITB

Clause Reference with respect to Section-I.

<u>S.N.</u>	<u>Description</u>	<u>Clause of ITB</u>
1.	Name of the Employer	1.1
1a	Agreement will be in percentage rate	1.4
1.b	Only ordinary maintenance , Periodic maintenance, and Emergency work are required.	1.5
1.c	Road included in this bid are 1.....km to km 2.....km to km	1.1
2.	The last five years means for this tender (2013-2014) 2008- 2009 2009- 2010 2010- 2011 2011- 2012 2012- 2013	4.4
3.	The required annual financial turn over amount is Rs. ###.##Lacs (-----)	4.4A(a)
4.	Value of work [Construction and Maintenance] is Rs. ####.## Lacs (-----)	4.4A(b)
5.	The cost of electric work is Rs. Nil	4.4A(d)
6.	The cost of water supply/ sanitary works is Rs. Nil	4.4A(e)
7.	Liquid assets and/or availability of credit facilities is Rs. ----- Lacs	4.4B(c)
8.	Price level of the financial year – 13-14	4.6
9.	The pre-bid meeting will take place at Office of -----,	9.1.1
10.	The technical bid will be opened Through website: www.eproc.bihar.gov.in only Date dd-mm-yyyy Time 15.30 Hours.	22.3
11.	Address of the Employer - Executive Engineer, -----,	24.2

12a	Any instrument of EMD shall be <i>issued on/after the start date of uploading of bid document by the Employer and before/up to the stipulated last date of uploading the bid by the bidder, shall only be applicable. It should be valid for not less than 180 days from the date of issue.</i>	16
13.	Identification: - Bid for [-----Name of work----- -----] - Bid reference No. - (insert number) - Do not open before Date <i>dd-mm-yyyy</i> Time 15.30 Hours.	19.2
13a	Threshold limit :- Upper limit & Lower limit –Contractor is allowed to quote any % above or below of the ECV ,but beyond 10% above or below the Authority shall be “Pradhikrit Samiti”, Govt. of Bihar headed by Development Commissioner.	13.1
14.	Bids shall be submitted only in Percentage Rate Method.	13.1
15.	Schedule of rate applicable for Percentage Rate Method is effective from -----(dd/mm/yyyy.)	13.1
16.	The bid should be uploaded latest by Date ----(<i>dd-mm-yyyy</i>) Time 15.00 Hours	20.1
17.	The bid will be opened at – through www.eproc.bihar.gov.in	22]
18.	The Bid Security shall be duly endorsed/pledged to the <i>Executive Engineer, ----- Division,-----</i> payable at -----	16.1
19.	Escalation factors (for the cost of works executed and financial figure to a common base value for works completed) Year before One Two Three Four Five Multiply factor 1.1 1.21 1.33 1.46 1.61	4.4 (A) (a)
20.3	The technical bid shall be opened electronically at the place, date and time as specified in detailed NIT. through website www.eproc.bihar.gov.in	19

List of Key Plant & Equipment to be deployed on ROAD Work

[Reference Cl. 4.5 (B) (a)]

Sl.	Type of Equipment*	Max *** age as on (Years)	Road Contract Package Size **				
			Within One Cr. Fifty Three lakhs (1.53cr)	Rs.- 1.53- 5.53 Crores	Rs. 5.53- 30.53 Crores	Rs. 31.53- 50.53 Crores	Above 50.53 Crores
1.	Motor Grader	5	As per the decision of Engineer-in-Charge concerned	1	1	3	5
2.	Dozer	5			1	1	2
3.	Front end Loader	5			1	2	3
4.	Smooth Wheeled Roller	5		1	2	2	3
5.	Vibratory Roller	5		1	1	1	2
6.	Fully Computerized Hot Mix Plant with Electronic Controls	5		1 (Min. 40-60 TPH capacity)	1 (Min 80-100 TPH capacity)	1 (Min 100-120 TPH capacity)	2
7.	Paver Finisher with Electronic Sensor	5		1 (Mechanical)	1	1	2
8.	Water Tanker	5		1	2	3	4
9.	Bitumen Sprayer	5-7		1	1	1	2
10.	Tandem Roller	5			1	2	2
11.	Concrete Mixes with Integral Weigh Batching facility	5		1 (Drum mixer)	1	1	1
12.	Concrete Batching and Mixing Plant (Minimum Capacity – 15m ³ /hour)	5			-	-	1
	Total -			8	13	18	29
13.	Provision of Exclusion & Inclusion of any plant & machinery as per requirement of project	Name. of plant & machinery to be Excluded		No. of plant & machinery to be Included			

* To be decided by the concern department before floating the tender.

* The Road contract Package size has been Re-calculated from SBD on the basis of WPI (All commodities) with the base year 2006.

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

*** Life of machine minus two years or 5 years on dd-mm-yyyyy which ever is more.

ANNEXURE – II

List of Key Personnel to be deployed on Contract Work

[Reference Cl. 4.5(B) (b)]

Sl. No.	Personnel*	Qualification	Contract Package Size **						
			Rs. 5.50 - 30.50 Lacs	Rs. 30.50 Lacs to 70.50 Lacs	Rs. 70.50 Lacs to 2.50 Crores	Rs. 2.50- 10.50 Crores	Rs. 10.50- 30.50 Crores	Rs. 31.50- 50.50 Crores	More than 50.50 Crores
1.	Project Manager	B.E. Civil + 10 Years Exp. (5 years as Manager) or retired E.E.					1 No.	1 No.	1 No.
2.	Site Engineer	B.E. Civil + 07 Years Exp. (3 years in Road Construction) or retired A.E.			1 No.	1 No.	1 No.	2 Nos.	4 Nos.
3.	Plant Engineer	B.E. Mech./ Civil + 05 Years Exp. or Dip. Mech + 07 Years Exp. or Retired J.E.				1 No.	1 No.	1 No.	2 Nos.
4.	Quantity Surveyor	B.E. Civil + 05 Years Exp. or Dip. Civil + 07 Years Exp.						1 No.	2 Nos.
5.	Soil & Material Engineer	B.E. Civil + 07 Years Exp.						1 No.	2 Nos.
6.	Survey Engineer	B.E. Civil + 03 Years Exp. or Dip. Civil + 05 Years Exp.						1 No.	2 Nos.
7.	Site Supervisor or	Fresh Graduate in Civil or Diploma Civil + 03 Years Exp. or retired I.T.I Holder.		1 No.	1 No.	1 Nos.	2 Nos.	3 Nos.	4 Nos.
	Total			1	2	3	5	10	17

* The designation and no. of the personnel has to be decided by the department concerned as per the requirement

** The contract Package size has been Re-calculated from SBD on the basis of WPI (All commodities) with the base year 2006 and shall be revised every three years onwards.

बिहार सरकार
पथ निर्माण विभाग

पत्रांक-प्र0-6/नियम-02/2010 - 8131 (5) / पटना, दिनांक 24.7.12

प्रेषक,

प्रत्यय अमृत
सचिव,

सेवा में,

प्रधान सचिव/सचिव, बिहार, पटना।
जल संसाधन विभाग, बिहार, पटना।
ग्रामीण कार्य विभाग, बिहार, पटना।
भवन निर्माण विभाग, बिहार, पटना।
लोक स्वास्थ्य अभियंत्रण विभाग, बिहार, पटना।
नगर विकास एवं आवास विभाग, बिहार, पटना।
योजना एवं विकास विभाग, बिहार, पटना।
निगरानी विभाग, बिहार, पटना।
लघु जल संसाधन विभाग, बिहार, पटना।
ऊर्जा विभाग, बिहार, पटना।

विषय :- Standard Bidding Document आधारित निविदाओं में Joint Venture के रूप में भाग लेने हेतु Joint Venture के शर्तों के उपबंध के संबंध में।

महाशय,

निदेशानुसार उपर्युक्त विषय पर आपका ध्यान आकृष्ट करते हुए कहना है कि राज्य में लागू Standard Bidding Document के Instruction to Bidders Chapter के कडिका-4.4 में रुपये 10.00 करोड़ से अधिक प्राक्कलित राशि के निविदाओं में संवेदकों द्वारा Joint Venture के रूप में भाग लेने का प्रावधान है। किन्तु Joint Venture के लिए Criteria एवं Guideline का उपबंध नहीं होने के कारण इसके कार्यान्वयन हेतु मार्गदर्शन की अपेक्षा की जाती रही है।

तदनुसार सम्यक विचारोपरांत एवं सरकार के अनुमोदनोपरांत Standard Bidding Document में Joint Venture के लिए सामान्य Criteria एवं Guideline तथा Format for joint venture agreement का प्रावधान निम्नवत् किया जाता है :-

Criteria for Joint venture participating in the bids for procurement of civil works.

1. Bids from joint venture are only allowed for the works having estimated cost more than 10.00 cr. Bids submitted by a joint venture (JV) of not more than a total of three firms as partners shall comply with the following requirements :-

- 1.1 There shall be a Joint Venture Agreement (Refer Annexure 1) specific for the contract package between the constituent firms, indicating clearly, amongst other things, the proposed distribution of responsibilities both financial as well as technical for execution of the work amongst them. For the purpose of this clause, the most experienced lead partner will be the one defined. A copy of the Joint Venture agreement in accordance with requirements mentioned in Annexure-I shall be necessarily submitted with the bid.
- 1.1.1 Alternatively, a letter of intent to execute a JV in the event of successful bid shall be signed by all partners of JV and submitted with the bid together with a copy of the proposed agreement. Pursuant to the foregoing, the JV shall include among other things, the joint venture's objectives, the proposed management structure, the contribution of each partner to joint venture operation, the commitment of the partners to joint and several liability for due performance, recourse/sanctions within the joint venture in the event of default or withdrawal of any partner and arrangements for providing the required indemnities.
- 1.1.2 The JV so formed shall also have to be registered with the concerned department after issue of LOA but before the agreement.
- 1.2 The bid, and in the case of the successful bidder, the form of agreement, etc, shall be signed and /or executed in such a manner as may be required for making it legally binding on all partners (including operative parts of the ensuing contract in respect of Agreement of Arbitration, etc). On award of work, the Form of Agreement and Contract Documents shall be signed by all partners of the Joint Venture to conclude Contract Agreement.
- 1.3 Lead partner shall be nominated as being partner-in-charge; and this authorization shall be evidenced by submitting a power of attorney signed by the legally authorized signatories of all the partners.

- 1.4 The partner-in-charge shall be authorized to incur liabilities and to receive instruction for and on behalf of the partners of the Joint venture, whether jointly or severally and entire execution of the Contract (including payment) shall be carried out exclusively through the partner-in-charge. A copy of the said authorization shall be furnished with the bid.
 - 1.5 All partners of the Joint Venture shall be liable jointly and severally for the execution of the contract in accordance with contract terms, and a relevant statement to this effect shall be included in the authorization mentioned under sub clause (1.3) above as well as in the Form of tender and the Form of Agreement (in case of a successful bidder).
 - 1.6 In the event of default, all the partners of the Joint venture will retain the full and undivided responsibility for the performance of their obligations under the contract and/or for satisfactory completion of the works.
 - 1.7 The bid submitted shall include all the relevant information as required under the provisions of sub-clause 4.5 of ITB and furnished separately for each partner. The requirement of key plants & equipments construction equipments as per Annexure I of SBD testing equipment for establishing field laboratory key personnel to be employed on contract work as per Annexure II of SBD shall be counted altogether for the partners it shall be less than the requirement.
 - 1.8 The bank guarantee/other suitable instrument in shape of bid security shall be issued in the name of JV and pledged in favor of employer.
2. Each partner of the JV must produce:
- 2.1 The Permanent account number (PAN) of Income Tax
 - 2.2 An affidavit through 1st class Executive Magistrate that the information furnished with the bid documents is correct in all respect; and
 - 2.3 Such other certificates as defined in the Appendix to ITB. Failure to produce the certificates shall make the bid non-responsive.

3. Each bidder must demonstrate:-

- 3.1 Availability for construction work, either owned, or on lease or on hire, of the key equipment stated in the Appendix to ITB including equipments required for establishing field laboratory to perform mandatory test, and those stated in the Appendix to ITB. The requirement of key plants & equipments construction equipments as per Annexure I of SBD testing equipment for establishing field laboratory key personnel to be employed on contract work as per Annexure II of SBD shall be counted altogether for the partners it shall be less than the requirement.
- 3.2 Availability for construction work of technical personnel as stated in the Appendix to ITB. The requirement of key plants & equipments construction equipments as per Annexure I of SBD testing equipment for establishing field laboratory key personnel to be employed on contract work as per Annexure II of SBD shall be counted altogether for the partners it shall be less than the requirement.
- 3.3 The joint venture must satisfy collectively the criteria laid down in para 3.1 & 3.2 above.
- 3.4 Liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of not less than the amount specified in the Appendix to ITB.
- 3.5 The bidder must not have in his employment.
 - 3.5.1 The near relations (defined as first blood relations, and their spouses, of the bidder or the bidder's spouse) of persons. The bidder must produce an affidavit stating that the near relations of the following departmental officers are not in his employment:
JE/AE/EE/SE/CE/E-in- C & Divisional Accountant of any works department of Bihar State.

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

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

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

4. To qualify for a package of contracts made up of this and other contracts for which bids are invited in the Notice Inviting Tender, the bidder must demonstrate having experience and resources sufficient to meet the aggregate of the qualifying criteria for the individual contract.
5. If bidder is Joint venture, the partners would be limited to three (including lead partner). Joint venture firm shall jointly and severally responsible for completion of the project. Joint venture must fulfil the following minimum qualification requirement.
 - 5.1 **The lead partner shall meet not less than 50% (fifty percent)** of qualification criteria given in sub-clause 4.2, 4.5 A, 4.5 B, 4.7 & 4.8 of ITB.
 - 5.2 Each of the remaining partners shall meet not less than **25% (Twenty five percent)** of all the qualifying criteria given in sub-clause 4.2, 4.5 A, 4.5 B, 4.7 & 4.8 of ITB.
 - 5.3 However in case one of the joint ventures partner is proposed to be included primarily to provide financial strength to the joint venture, such joint venture partner shall have to commit to provide liquidity support to the project to the extent of 10 % of the value of contract.
 - 5.4 The joint venture must also collectively satisfy the subject of the criteria of clause 4.2, 4.5 A, 4.5B, 4.7 and 4.8 of ITB for this purpose the relevant figures for each of the partners shall be 100% or more.

- 5.5 In the event that the Employer has caused to disqualify under clause 4.8 of ITB and the constitutions stated below all of the Joint Venture partners will be disqualified.
- 5.6 Joint venture applicants shall provide a certified copy of the Joint venture Agreement in demonstration of the partners undertaking joint and several liabilities for the performance of any contract entered into with the bid.
- 5.7 The available bid capacity of the JV as required under clause 4.7 of ITB below will be applied for each partner to the extent of his proposed participation in the execution of the work. The total bid capacity available shall be more than estimated contract value.

The available bid capacity will be calculated as under

Assessed Available Bid capacity = $(A * N * M - B)$

Where

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

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

6. Sub-Contractor's (duly authorized) experience and resources shall be taken into account in determining the bidder's compliance with the qualifying criteria. The sub contractor's role may be verified by the employer.

7. Qualification of a joint venture does not necessarily qualify any of its partners individually or as a partner to any other joint venture. In case of dissolution of a joint venture, each one of the constituent firms may qualify if they meet all the qualification requirements subject to the written approval of the Employer.
8. The rescinding of contract of a joint venture on account of reasons other than non-performance, such as most experienced partner of joint venture pulling out, court direction leading to breaking up of a joint venture before the start of work, which are not attributable to the poor performance of the contractor will, however, not affect the qualification of the individual partners.

विश्वासभाजन

(प्रत्यय अमृत)
सचिव,

ज्ञापक-प्र0-6/नियम-02/2010 - 8131 (S) / पटना, दिनांक 24.7.12

प्रतिलिपि :- सभी अभियंता प्रमुख, सभी कार्य विभाग / सभी मुख्य अभियंता, सभी कार्य विभाग / सभी अधीक्षण अभियंता, सभी कार्य विभाग एवं सभी कार्यपालक अभियंता, सभी कार्य विभाग, को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

(प्रत्यय अमृत)

सचिव,

Format for Joint Venture Agreement

If the application is made by a joint venture of two or more firms (limited to three firms), the evidence of clear mandate (i.e., in the form of respective Board Resolution duly authenticated by competent authority) by such two or more firms willing to form Joint Venture among themselves for the specified projects should accompany duly recognizing their respective authorised signatories signing for and on behalf of the respective Firms for the purpose of forming the Joint Venture. A certified copy of power of attorney to the authorized representatives, signed by legally authorized signatories of the all the firms of the joint venture shall accompany the application. The JV agreement shall be signed by the authorized representative of the Joint Venture. The JV Agreement shall need to be submitted consisting but not limited to the following provision:-

- a. Name, style and project (s) specific JV with head Office address.
- b. Extent (or Equity) of participation of each party in the JV.
- c. Commitment of each party to furnish the Bond money (i.e., Bid Security, performance security and security for Mobilisation Advance) in proportion to his participation in the JV.
- d. responsibility of each partner of JV (in terms of Physical and Financial involvement)
- e. Working capital arrangement of JV
- f. Operation of separate bank account in the name of JV to be operated by at least one foreign partner and one local partner. In case of JV among local partners, all the partners are required to operate.
- g. Provision for cure in case of non-performance of responsibility by any party of the JV.
- h. Provision that NEITHER party of the JV shall be allowed to sign, pledge, sell or otherwise dispose all or part of its respective interests in JV to any party including existing partner (s) of the JV The Employer derives right for any consequent action (including blacklisting) against any or all JV partners in case of any breach in this regard.
- i. Management Structure of JV with details.
- j. Lead partner to be identified who shall be empowered by the JV to incur liabilities on behalf of JV.
- k. Parties/firms committing themselves to the Employer for jointly and severally responsible for the intended works.
- l. The Power of Attorney shall be duly notarized.
- m. Any relevant detail.

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

QUALIFICATION INFORMATION

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

1. For Individual Bidders

1.1 Constitution or legal status of Bidder
(Attach copy)

Place of registration :

Principal place of business :

Power of attorney of signatory of Bid
(Attach)

1.2 Total value **(In Rs. Lakh)** of Civil Engineering construction work performed in the last five years
 2008-2009 _____
 2009-2010 _____
(Based upon the Certificate issued by Chartered Accountant. Also attach copy of certificate) 2010-2011 _____
 2011-2012 _____
 2012-2013 _____

1.3.1 **Details of Work performed as prime contractor, work performed in the past as a nominated sub- contractor will also be considered provided the sub-contract involved execution of all main items of work described in the bid document, provided further that all other qualification criteria are satisfied (in the same name) on works of a similar nature over the last five years (immediately preceding the financial year in which bids are received). Also attach certificate(s) from Engineer(s)-in-Charge not below the rank of Executive Engineer or from Competent Authority.**

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

Note for above para 1.3.1

If the bid are invited in the financial year is 2013-14 , then the last five years will be 2012-13, 2011-12, 2010-11, 2009-10 and 2008-09.

1.3.2.

See
also
note1

Quantities of work executed as prime contractor, work performed in the past as a nominated sub-contractor will also be considered provided the sub-contract involved execution of all main items of work described in the bid document, provided further that all other qualification criteria are satisfied (in the same name and style) in the last five years :²

Year	Name of the work	Name of the Employer*	Quantity of work performed (cum) ³ Remarks						Remarks* (indicate contract Ref)
			Cement Concrete (including RCC & PCC)	Masonry	Earth works	WBM	WMM	Bituminous Work	
2008__2009									
2009__2010									
2010__2011									
2011__2012									
2012__2013									

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

(A) Existing commitments and on-going works:

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

(1) Delete, if prequalification has been carried out

(2) Immediately preceding the financial year in which bids are received. (e.g. if the financial is 2013-14 in which bids are invited then the last five years will be 2012-13, 2011-12, 2010-11, 2009-10 and 2008-09.)

(3) The item of work for which data is requested should tally with that specified in ITB clause 4.4A (c)

(4) Attach certificate(s) from the Engineer(s)-in-Charge not below the rank of Executive Engineer or Self issued

(B) Works for which bids already submitted :

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

1.5 Availability of key items of Contractor's Equipment essential for carrying out the Works [Ref. Clause 4.4(B)(a)]. The Bidder should list all the information requested below. Refer also to Sub Clause 4.3 (d) of the Instruction to Bidders.

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

1.6 Qualifications and experience of key personnel required for administration and execution of the Contract [Ref. Clause 4.4(B)(b)]. Attach biographical data. Refer also to Sub Clause 4.3 (e) of instructions to Bidders and Sub Clause 9.1 of the Conditions of Contract.

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

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

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

Attach copies of certificates on possession of valid license for executing water supply/ sanitary work/ building electrification works [Reference Clause 4.4d) & Clause 4.4(e)]

***1.8** Financial reports for the last five years: balance sheets, profit and loss statements, auditors' reports (in case of companies/corporation), etc. List them below and attach copies.

* Delete, if prequalification has carried out

1.9 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List them below and attach copies of support documents.

1.10 Name, address and telephone, telex and fax numbers of the Bidders' bankers who may provide references if contacted by the Employer.

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

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

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

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

1.14 Programme

1.15 Quality Assurance Programme

2. Additional Requirements

2.1 Bidders should provide any additional information required to fulfill the requirements of Clause 4 of the Instructions to the Bidders, if applicable.

(i) Affidavit

(ii) Undertaking

*** (iii) Update of original prequalification application

*** (iv) Copy of original prequalification application

*** (v) Copy of prequalification letter

- ** *Fill the Name of Consultant.*
- *** *Delete, if prequalification has not been carried out.*

CMBD 01.01.2014

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

(CLAUSE 4.2 (i) OF ITB)

BANK CERTIFICATE

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

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

(Signature)

Name of Bank

Senior Bank Manager

Address of the Bank

Format of Affidavit
In the Court of Sub-Divisional Magistrate/Executive Magistrate

(See Note below)

I, Sri/Mrs./Ms.....S/O.D/O.....

Aged.....by Nationality Indian by occupation.....

.....resident of village.....

Town.....P.O.....

P.S.....District.....do

hereby solemnly affirm and declare as follows:-

- (1) that I am a permanent resident of the aforesaid village/Town
- (2) That I am authorized to sign this affidavit on behalf of M/S.....in the capacity of director/Partner/Sole Proprietor/ Manager/.....
- (3) That I the Undersigned, do hereby certify that all the requisite Statements and attachments for the work.....(Name of work as PerNIT) are the true copy of Originals and are true.
- (4) The undersigned certifies that our Company M/s.....has neither been blacklisted nor has abandoned any government department, India nor any contract awarded to us for such works have been rescind, during last five years prior to the date of this bid.
- (5) The undersigned hereby certifies that his firm M/s.....has not been declared ineligible by any for delay, failure or corrupt, any fraudulent practices by any of the State Government or Central Governments or Public Understanding or any autonomous body.
- (6) That our Company has no record of poor Performance such as abandoning the work, not properly Completing the contract, inordinate delays in completion, litigation history or financial failure etc.
- (7) The undersigned hereby authorizes and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding my (our) competence and general reputation.
- (8) The undersigned understand and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the Department/Project implementing agency
- (9) That if any contract of the above affidavit is, at any stage subsequently found to be false or fabricated, our tender shall be considered further and legal action shall also be initiated.

Deponent Signature

Solemnly affirm and declare before me to be true by deponent who is identified by the

Advocate.....

Signature of Magistrate.....

N.B. – Above Affidavit may be affirmed and declared before a Sub-Divisional Magistrate, Executive Magistrate, Notary or other competent authority.

UNDERTAKING

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

(Signed by an Authorised Officer of the Firm)

Title of Officer

Name of Firm

DATE

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FOR CONSTRUCTION

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GENERAL GUIDELINES

1. This book of "General Conditions of Contract" is applicable to both types of tenders i.e. "Percentage rate tenders" and "Item rate tenders". Accordingly alternative provisions for conditions Nos. 4, The appropriate alternatives will be applicable in specific cases depending on whether this is used for percentage rate tender (P.W.D.- 2) or item rate tender (P.W.D.-3)
2. P.W.D.- 1, Schedules A to F, special conditions/ specifications and drawing only will be issued to intending bidders. The standard form shall form part of the agreement to be drawn and signed by both parties after acceptance of tender.
3. All blanks are confined to Notice Inviting Tender (P.W.D.- 1) and Schedules A to F.
4. Authority approving the Notice Inviting Tender (NIT) shall fill up all the blanks in P.W.D.-6 and in Schedules B to F before issue of Tender Papers.
5. The intending bidders will quote their rates in Schedule A.
6. The proforma for registers and Schedules A to F are only for information and guidance. These are not to be filled in the Standard Form. The Schedules with all blanks, duly filled shall be separately issued to all intending tenderers.

**GOVERNMENT OF BIHAR
ROAD CONSTRUCTION DEPARTMENT
NOTICE INVITING TENDER**

1. The on the behalf of invites item rate/ percentage rate bids from the eligible and approved contractor registered with State P.W.D./ other State P.W.D. & Central Government / PSU or any Agency of National or International repute for each of the following works.

District	Name of work	Estimated cost in Rs./ Lakh	Earnest money	Time allowed for completion	Last date and time for receipt of application for issue of tender forms	Time and date of opening of tender	Place of sale and submission of tender
1	2	3	4	5	6	7	8

- ATTACHED SEPERATELY -

The bidders who download the bidding documents from the internet site would have to pay the cost of bid documents and submit it in a separate envelope marked cost of bidding document downloaded from internet.

Criteria of eligibility for issue of tender document

- 1.1 Issue of Tender to any Contractor registered with Central Government / any State Government or any PSU or an agency of international or national repute may be submitted without the registration. However, registration with the concerned works department will be essential after issue of L.O.A.

Following documents duly attested by gazetted officer and photocopied are required at the time of submission of bid (In case of other State PWD/ CPWD/ any PSU eligible contractors or Agencies of National/ International repute following documents (from a to c) have to be submitted after letter of acceptance).

- (a) Registration paper (renewed) of appropriate class and deptt.
- (a) Latest sales tax clearance/ sales tax registration in State of Bihar.
- (b) Latest labour license (renewed) in State of Bihar.
- (c) Power of attorney/ partnership deed/ MoU of private limited company.
- (d) Bank Draft for B.O.Q. cost.
- (e) Tools & plans ownership/ lease certificate required in aforesaid work duly verified from Divisional Engineer / other State PWD / CPWD Contractor will provide definite proof from appropriate authority for tools & Plant and Undertaking to install it on works site after getting letter of acceptance.

2. Agreement shall be drawn with the successful tenderer on prescribed Form No. P.W.D. 2/3 which is available as a Govt. of Bihar Publication, Tenderer shall quote his rates as overall percentage above/below the amount of B.O.Q. or item rate as per various terms and conditions of the said form which will form part of the agreement.
3. The amount of Estimated Cost or B.O.Q. Cost of the work may vary.
4. The earnest money will be applicable on the sanction cost of B.O.Q. only. **(See note below)**
5. The time allowed for carrying out the work will be seven days from the day after the date of written orders to commence the work or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the tender documents.
6. The site for the work is available.
7. Receipt of applications for issue of forms will be stopped by dd-mm-yy Up HH:MM Hours. . Issue of tender forms will be stopped on the date fixed for opening of tenders or as mentioned in press Notice.
Tender documents consisting of plans, specifications, the schedule of quantities of the various classes of work to be done and the set of terms & conditions of contract to be complied with by the contractor whose tender may be accepted and other necessary documents can be seen *Through website: www.eproc.bihar.gov.in only.*
i) Rs####.###.in Bank Draft as cost of tender.
ii) Earnest Money of Rs.###.####.as mentioned in Bihar Financial Rule .For work costing more than one crore, Bank Guarantee from any scheduled bank in the state. (If issued from any bank outside state then it will be converted from any bank within state before executing the work agreement)
8. Tenders, which should always be placed in sealed envelope, with the name of work and due date written on the envelopes, will be received by the Dated dd-mm-yy Up to HH:MM Hours
(Through website: www.eproc.bihar.gov.in only.
will be opened by him or his authorized representative in his office on the same day at 03.30 P.M.
9. The Amount of Performance Guarantee shall be as follows-
(A) At the time of Signing of contract-
(i) 2% of Construction Estimated cost Value
(ii) 0.5% of Maintenance Estimate cost Value
(B) At the time of commencement of Maintenance
1.5% Additional performance security of maintenance ECV.
Rest criteria will remain the same
10. The description of the work is as follows:-

Copies of other drawings and documents pertaining to the works will be open for inspection by the tenderers at the office of the above-mentioned officer.

Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no

Note (for para 4 above)-The BG instrument as applicable for the Earnest Money, issued on/after the start date of uploading of bid document by the Employer and before/up to the stipulated last date of uploading the bid by the bidder, shall only be applicable. It should be valid for not less than 180 days from the date of issue.

extra charges consequent on any misunderstanding or otherwise shall be allowed. The tenderer shall be responsible for arranging and maintaining at his own cost all materials, tool & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a tender by a tenderer implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

- 11 Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
- 12 The competent authority on behalf of Governor of Bihar reserves to himself the right of accepting the whole or any part of the tender and the tenderer shall bound to perform the same at the rate quoted.
- 13 The contractor shall not be permitted to tender for works in the RCD Division wing (responsible for award and execution of contracts) in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Assistant Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the RCD Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
- 14 No Engineer of Gazetted rank or other Gazetted officer employed in Engineering or Administrative duties in an Engineering Department of the Government of Bihar is allowed to work as a contractor for a period of two years after his retirement from Government service, without the previous permission of the Government of Bihar in writing. This contract is liable to be cancelled if either the contractor or any of his employee is found any time to be such a person who had not obtained the permission to the Government of Bihar as aforesaid before submission of the tender or engagement in the contractors service.
- 15 The tender for the works shall remain open for acceptance for a period of 120 days from the date of opening of tenders. If any tenderer withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 100 % of the said earnest money as aforesaid.
17. The Department has right to cancel or postpone any work without given any notice or clarification.
18. The Department may add or delete any of the condition required for execution of any work.
19. This Notice Inviting Tender shall form a part of the contract document. The successful tenderer/contractor, the Competent Authority, shall issue the letter of acceptance and will sign the contract within 15 days after submitting the performance guarantee :-

- a) The notice inviting tender, all the documents including additional conditions specifications and drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.
- b) Standard P.W.D. Form 2/3

CMBD 01.01.2014

P.W.D.-2/3
GOVERNMENT OF BIHAR
ROAD CONSTRUCTION DEPARTMENT

STATE – BIHAR

CIRCLE –

DEPARTMENT- R.C.D

DIVISION-

Percentage Rate Tender & Contract for Works

(A) Tender for the work of :-

(i) To be submitted BY HH:MM- hours on dd.mm.yy as per N.I.T

(ii) To be opened at 15.30 hours on dt. dd.mm.yy On website [www. eproc.bihar.gov.in](http://www.eproc.bihar.gov.in)

Signature of officer issuing the documents

Designation

Date of issue

T E N D E R

I/We have read and examined the notice inviting tender, schedule, A,B,C,D,E & F. Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the Works and Maintenance specified for the Governor of Bihar within the time specified in Schedule 'F', viz., schedule of quantities and in accordance in all in respects with the specifications, designs, drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respect in accordance with, such conditions so far as applicable.

We agree to keep the tender open for one hundred twenty (120) days from the due date of submission thereof and not to make any modifications in its terms and conditions.

A sum of Rs. has been deposited as/receipt treasury challan/ deposit at call receipt of a scheduled bank/fixed deposit receipt of scheduled bank/ demand /draft/ NSC/ Bank guarantee of a scheduled bank as earnest money. If I/We, fail to furnish the prescribed performance guarantee within prescribed period, I/we agree that the said Governor of Bihar or his successors in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if/we fail to commence work as specified, I/we agree that Governor of Bihar or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him

towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, up to maximum of the percentage mentioned in Schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived therefrom to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated
Contractor

Signature of
Postal Address

Witness :
Address :
Occupation :

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the Governor of Bihar for a sum of Rs

(Rupees.....)

The letters referred to below shall form part of this contract Agreement :-

- a)
- b)
- c)

For & on behalf of the Governor of Bihar.

Signature

Dated



GOVERNMENT OF BIHAR

ALL WORKS DEPARTMENT

General Rules & Directions

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

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

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

Applicable for Item Rate Tender only (PWD- 3)

4. Any person who submits a tender shall fill up the usual printed form, stating at what rate he is willing to undertake each item of the work. Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort, will be liable to rejection. No single tender shall include more than one work, but contractors who wish to tender two or more works shall submit separate tenders for each; with the nature and number of works to which they refer on the envelope.

The rate(s) must be quoted in decimal coinage. Amounts must be quoted in full rupees by ignoring fifty paise and less and considering more than fifty paise as rupee one.

Applicable for Percentage Rate Tender only (PWD- 2)

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

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

bills for work done and in fixing the percentage it should be borne in mind that the calculations will be made.

5. The officer inviting tender or his duly authorized assistant, will open tenders in the presence of any intending contractors who may be present at the time, and will enter the amount of the several tenders in a comparative statement in a suitable form. In the event of a tender being accepted, a receipt for the earnest money forwarded therewith shall thereupon be given to the contractor who shall thereupon for the purpose of identification sign copies of the specifications and other documents mentioned in Rule-I. In the event of a tender being rejected, the earnest money forwarded with such unaccepted tender shall thereupon be returned to the contractor remitting the same, without any interest.
6. The officer inviting tenders shall have the right of rejecting all or any of the tenders and will not be bound to accept the lowest or any other tender.
7. The receipt of an accountant or clerk for any money paid by the contractor will not be considered as an acknowledgment or payment to the officer inviting tender and the contractors shall be responsible for seeing that he procures a receipt signed by the office inviting tender or a duly authorized person.
8. The memorandum of work tendered for and the schedule of materials to be supplied by the department and their issue-rates, shall be filled and completed in the office of the officer inviting tender before the tender form is issued. If a form is issued to an intending tenderer without having been so filled in and incomplete, he shall request the officer to have this done before he completes and delivers his tender.
9. For works of sensitive nature the tenderers shall sign a declaration under the Official Secrets Act 1923, for maintaining secrecy of the tender documents drawing or other records connected with the work given to them. The unsuccessful tenderers shall return all the drawing given to them.
10. In the case of Item Rate Tenders, only rates quoted shall be considered. Any tender containing percentage below/above the rates quoted is liable to be rejected. Rates quoted by the contractor in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy if any discrepancy found or the rates which correspond with the amount worked out of an item is not worked out by the contractor or it does not correspond with the rates written either in figures or in words then the rates quoted by the contractor in words shall be taken as correct. Where the rates quoted by the contractor in figures and in words tally but the amount is not worked out correctly, the rates quoted by the contractor will unless otherwise proved be taken as correct and not the amount.
- 10A. In case of Percentage Rate Tenders only percentage quoted shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the contractor in percentage rate tender shall be accurately filled in figures and words, so that there is no discrepancy. However if the contractor has worked out the amount of the tender and if any discrepancy is found in the percentage quoted in words and figures, the percentage which corresponds with the amount worked out by the contractor shall, unless otherwise proved, be take as correct. If the amount of the tender is not worked out by the contractor or it does not correspond with the percentage written either in figures or in words then the percentage quoted by the contractor in words shall be taken as correct. Where the percentage quoted by the contractor in figures and in words tally but the amount is not worked out correctly, the percentage quoted by the contractor will, unless otherwise proved, be taken as correct and not the amount.
11. In the case of any tender where unit rates of any item/items appear unrealistic, such tender will be considered as unbalanced and in case the tenderer is unable to provide satisfactory explanation such a tender is liable to be disqualified and rejected.
12. All rates shall be quoted on the tender form. The amount for each item should be worked out and requisite totals given. Special care should be taken to write

**Applicable for Item
Rate Tender only (PWD- 3)**

**Applicable for
Percentage
Rate Tender
only (PWD- 2)**

**Applicable for
Item Rate
Tender only (PWD- 3)**

**Applicable for
Percentage
Rate Tender
only (PWD- 2)**

the rates in figures as well as in words and the amount in figures only, in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of figures, the word 'Rs' should be written before the figure of rupees and word 'P' after the decimal figures, e.g. 'Rs 2.15 P' and in case of words, the word, 'Rupees' should precede and the word 'Paise' should be written in the end. Unless the rate is in whole rupee and followed by the word 'only' it should invariably be up to two decimal places. While quoting the rate in schedule of quantities, the word 'only' should be written closely following the amount and it should not be written in the next line.

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

13. (i) The contractor whose tender is accepted, will be required to furnish performance guarantee of 2% (two percent) for construction & 0.5% for Maintenance of the agreement value within specified period. This guarantee shall be in the form of Govt. Securities or fixed deposit receipt of any scheduled bank, guarantee bonds of any scheduled bank or State Bank of India or Bank guarantee from any schedule bank in the State for works of more than one crore.
- (ii) The contractor whose tender is accepted, will also be required to furnish by way of Security Deposit for the fulfillment of his contract, an amount equal to 8 % of the agreement value of construction cost of the work. The security deposit will be collected by deductions from the running bills of the contractor at the rates mentioned above
14. On acceptance of the tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instructions from the Engineer-in-Charge shall be communicated in writing to the Engineer-in-Charge.
15. Sales-tax, purchase tax, turnover tax, service tax, entry tax royalty or any other tax on material in respect of this contract shall be payable by the Contractor and Government will not entertain any claim whatsoever in respect of the same.
16. The contractor shall give a list of both gazette and non-gazette P.W.D. employees related to him posted in the division, if any.
17. The tender for the work shall not be witnessed by a contractor or contractors who himself/themselves has/have tendered or who may and has/have tendered for the same work.
Failure to observe this condition would render, tenders of the contractors tendering, as well as witnessing the tender, liable to summary rejection.
18. The tender for composite work includes in addition to building work all other works such as sanitary and water supply installations drainage installation, electrical work, horticulture work, roads and paths etc. The tenderer apart from being a registered contractor (B&R) of appropriate class, must associate himself with agencies of appropriate class which are eligible to tender for sanitary and water supply drainage, electrical and horticulture works in the composite tender.

19. The contractor shall submit list of works which are in hand (progress) in the following form:-

Name of work	Name and Particular of Division. where work is	Value of work	Position of work in progress	Remarks

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

CONDITIONS OF CONTRACT

Definitions :

1. The contract means the document forming the tender and acceptances thereof and the formal agreement executed between the competent authority on behalf of the Governor of Bihar and the Contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time form one contract and shall be complementary to one another.
2. In the contract, the following expressions shall, unless the context otherwise requires have the meanings, hereby respectively assigned to them :-
 - i) The expression Works or Work shall, unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.
 - i) The expression "Maintenance" shall mean long term Output and performance based maintenance of road assets and shall include any or all of i) Ordinary maintenance ii) Periodic maintenance and iii) Emergency work as indicated in Bid data sheet.
 - ii) The Site shall mean the land/or other places on. into or through which work is to be executed under the contract or any adjacent land, path or street through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.
 - iii) The Contractor shall mean the individual, firm or company, whether incorporate or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm of company.

- iv) The Engineer-in-Charge means the Engineer officer who shall supervise and be in-charge of the work and who shall sign the contract on behalf of the Governor of Bihar as mentioned in Schedule 'F' hereunder.
- v) Government or Government of Bihar shall mean the Governor of Bihar.
- vi) Excepted Risk are risks due to riots (other than those on account of contractor employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, any act of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, and other causes over which the contractor has no control and accepted as such by the Accepting Authority Provided that the contractor is also to show that he has taken all due precautions to avoid / un minimise any adverse after / damage from the above or causes solely due to use or occupation by Government of the part of the works in respect of which a certificate of completion has been issued or a caused solely due to Government's faulty design of works.
- vii) Bill of quantity means the price and completed Bill of Quantities forming part of the Bid.
- viii) The Defect liability certificate is the certificate issued by Engineer-in-Charge after defect liability period has ended and upon correction of defects by the contractor.
- ix) The defect liability period will be decided by the department for different nature of works from date of completion of the work and must be mentioned in the agreement.
It will be decided by the department for different nature of work from time to time as mentioned in contract Data.
- x) The intended completion date is the time intended to complete the work by the contractor.
- xi) The start date is given in the contract data. It is the date when the contractor shall commence execution of the works. It does not necessarily coincide with any of the site possession date.
- xii) A sub contractor is a person or corporate body who has a contract with the contractor to carry out a part of the construction work in the contract, which includes work on the site.
- xiii) Temporary works are works designed, constructed, installed and removed by the contractor that are needed for construction or installation of the works.
- xiv) Market Rate shall be the rate as decided by the competent authority on the basis of the cost of materials and labour at the site where the work is to be executed plus the percentage mentioned in Schedule 'F' to cover, all overheads and profits.
- xv) Schedule(s) referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard Schedule of Government mentioned in Schedule 'F' hereunder, with the amendments thereto issued up to date of receipt of the tender.
- xvi) Department means any department of Government of Bihar, which invite tenders on behalf of Governor of Bihar as specified in schedule 'F'.
- xvii) Specifications means the specifications followed by relevant department of the Government of India / State Government.
- xviii) Tender value means the value of the entire work as stipulated in the letter award.

Scope and Performance	3. Where the context so requires, words imparting the singular only also include the plural and vice versa. Any reference to masculine gender shall whenever required include feminine gender and vice versa. 4. Heading and Marginal notes to these General Conditions of Contract shall not be deemed to form part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.
Works and Maintenance to be carried	5. The contractor shall be furnished, free of cost one certified copy of the contract documents except standard specifications, Schedule of Rates and such other printed and published documents, together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this contract. 6. The Work and Maintenance to be carried out under the Contract shall, except as otherwise provided these conditions, include all labour, materials, tools, plants, equipment and transport which may be required in preparation of and for and in the full and entire execution and completion of the works. The descriptions given in the Schedule of Quantities (Schedule - A) shall unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labours necessary in and for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognized principles.
Sufficiency of Tender	7. The contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the works.
Discrepancies and Adjustment of Errors	8. The several documents forming the contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scale and special conditions in preference to General Conditions. 8.1 In the case of discrepancy between the schedule of Quantities, the Specifications and/or the Drawings, the following order of preference shall be observed :- i) Description of Schedule of Quantities. ii) Particular Specification and Special Condition, if any iii) Drawings. iv) MORT & H specification. v) Indian Standard Specifications of B.I.S. 8.2 The documents forming the Contract shall be interpreted in the following order of priority: (1) Agreement, (2) Letter of Acceptance, (3) Contractors bid (4) Addendum (5) Special /Particular Conditions of Contract (For both part Construction +Maintenance), (6) General Conditions (GC)(For both part Construction +Maintenance), (7) Specifications, (8) Drawings,

- (9) BOQ/Schedule of Prices,
- (10) Appendices
- (11) any other document listed in the SC/PC as forming part of the Contract.

Signing of Contract

- 8.3** Any error in description, quantity or rate in Schedule of Quantities or any omission therefore shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract.
9. The successful tenderer/contractor, after submitting the performance guarantee i.e. within 10 days of receipt of letter of acceptance shall attend the office of the Engineer-in-Charge for authentication signing and completion of the contractor document and execute the agreement consisting of :-
- i) the notice inviting tender, all the documents including drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.
 - ii) Standard P.W.D. Form as mentioned in Schedule 'F' consisting of:
Various standard clauses with corrections up to the date stipulated in Schedule 'F' along with annexure thereto.

CLAUSE OF CONTRACT-Part-1

(Applicable to Construction Works)

CLAUSE C1

Performance Guarantee

(i) The contractor shall submit an irrevocable PERFORMANCE GUARANTEE of the tendered amount including earnest money in the shape as mentioned in the Bihar Financial Rules or Bank Guarantee (for work costing more than one crore) or any other deposits mentioned for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in scheduled 'F' from the date of issue of letter of acceptance. This period can be further extended by the Engineer-in-Charge up to a maximum period as specified in schedule 'F' on written request of the contractor stating the reason for delays in procuring the Bank Guarantee, to the satisfaction of the Engineer-in-Charge. This guarantee shall be in the form of N.S.C. of Post Office/ Pledged in favour of department; D.D. of any Scheduled Bank or State Bank of India or Bank Guarantee (for work costing more than Rupees one Crore).

(ii) The performance Guarantee shall be initially valid up to 28 days beyond the defect liability.

(iii) The Engineer-in-Charge shall not make a claim under the Performance guarantee except for amounts to which the Governor of Bihar is entitled under the contract (notwithstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

(a) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer-in-Charge may claim the full amount of the Performance guarantee.

(b) Failure by the contractor to pay Governor of Bihar any amount due, either as agreed by the contractor or determined under any of the Clauses/Conditions of the agreement, within 30 days of the service of notice to this effect by Engineer-in-Charge.

(c) Failure by the contractor to rectify any defects as defined in the defect liability clause in the schedule – F of contract data to the satisfaction of the Engineer incharge.

(iv) In the event of the contract being determined or rescinded under provisions of any of the clause/condition of the agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of the Governor of Bihar.

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CLAUSE C1 A

Recovery of Security Deposit

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

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

CLAUSE 2

Compensation for Delay (Liquidated Damage)

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

This will also apply to items or group of items for which a separate period of completion has been specified.

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

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

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

CLAUSE 2A

Incentive for early completion

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

CLAUSE C3

When Contract can be Determined / Rescined

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

If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or unworkman like manner shall omit to comply with the requirement of such notice for a period of seven days thereafter.

- ii) If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wind up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.
- iii) if the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the work by the date of completion and continues to do so after a notice in writing of seven days from the Engineer-in-Charge.

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

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

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

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

CLAUSE C 3A

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

CLAUSE C4

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

In any case in which any of the powers conferred upon the Engineer-in-Charge by Clause-3 thereof, shall have become exercisable and the same are not exercised the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work. or any part thereof,

paying or allowing for the same in account at the contract rates or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.

CLAUSE C5

Time and Extension for Delay

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

- 5.1 As soon as possible after the contract is concluded the Contractor shall submit a Time & Progress Chart for each milestone and get it approved by the Department. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the work. It shall indicate the forecast of the dates of commencement and completion of various trades or sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and Contractor within the limitations of time imposed in the contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate Programme has been agreed upon) complete the work as per milestone given in schedule 'F'.
- 5.2 If the work(s) be delayed by.
 - i) force majeure, or
 - ii) Serious loss or damage by fire, or
 - i) Civil commotion, local.
 - v) Delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract, or
 - v) Non-availability of stores, which are the responsibility of Government to supply or
 - vii) Non-availability or break down of tools and Plant to be supplied or supplied by Government or
 - vii) Any other cause which, in the absolute discretion of the authority mentioned in Schedule 'F' is beyond the Contractor's control.

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

- 5.3 Request for the rescheduling of Milestones and extension of time, to be eligible for consideration, shall be made by the contractor in writing within fourteen days of the happening of the hindering event causing delay on the prescribed form. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.
- 5.4 In any such case the authority mentioned in Schedule 'F' may give a fair and reasonable extension of time and reschedule the milestones for completion of work. Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing, within 3 months of the date of receipt of such request. Non application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-in-Charge and this shall be binding on the contractor.

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

CLAUSE C5A

The Engineer may require the contractor to attend a progress review meeting during execution of work.

The Engineer shall record the minutes of the meeting and provide a copy to the Contractor for compliance. These minutes will be a part of evidence in case of any request for extension of time or impunitive action against the contractor.

CLAUSE C6

Measurement of Work Done

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

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

All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the contractor or his authorized representative at bast once in a month during the progress of the work and such measurements shall be signed and dated by the Engineer-in-Charge and the contractor or their representatives in token their acceptance. If the contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.If for any reason the contractor or his authorized representative is not available and the work of recording measurements is suspended by the Engineer-in-Charge or his representative, the Engineer-in-Charge and the Department shall not entertain any claim from contractor for any loss or damages on this account. If the contractor or his authorized representative does not remain present at the time of such measurements after the contractor or his authorized representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer-in-Charge or his representative shall be deemed to be accepted by the Contractor.

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

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

The contractor shall give not less than seven days notice to the Engineer-in-Charge or his authorized representative in charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimension thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-n-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing the same shall be uncovered at the contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the department to check the measurements recorded jointly or

otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.

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

CLAUSE C7

Payment on Intermediate Certificate to be Regarded as Advances

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

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

Pending consideration of extension of date of completion interim payments shall continue to be made as herein provided as per clause - 2, without prejudice to the right of the department to take action under the terms of this contract for delay in the completion of work, if the extension of date of completion is not granted by the competent authority.

CLAUSE C 8

Completion Certificate and Completion Plans

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within fifteen days of the receipt of such notice the Engineer-in-Charge shall inspect the work and if there is no defect in the work shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood

work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of execution thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirements of this clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the Engineer-in-Charge may at the expense of the contractor remove such scaffolding surplus materials and rubbish etc. and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

CLAUSE C 8A

Contractor to Keep Site Clean

When the annual repairs and maintenance of works are carried out, the splashes and droppings from white washing, color washing, painting etc. on walls, floor, windows etc. shall be removed and the surface cleaned simultaneously with the completion of these items of work in the individual rooms, quarters or premises etc. where the work is done without waiting for the actual completion of all the other items of work in the contract. In case the contractor fails to comply with the requirements of this clause, the Engineer-in-Charge shall have the right to get this work done at the cost of the contractor either departmentally or through any other agency. Before taking such action, the Engineer-in-Charge shall give ten days notice in writing to the contractor.

CLAUSE C 8 B

Completion Plans to be Submitted by the Contractor

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

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

CLAUSE C9

Payment of Final Bill

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

i)	If the Tendered value of work is up to Rs. 1 crores	:	2 months
ii)	If the Tendered value of work exceeds Rs. 1 crores	:	4 months

CLAUSE C 9 A

Payment of Contractor's Bills to Banks

Payments due to the contractor may, if so desired by him, be made to his bank instead of direct to him provided that the contractor furnishes to the Engineer-in-Charge (1) an authorization in the form of a legally valid document such as a power of attorney conferring authority on the bank to receive payments and (2) his own acceptance of the correctness of the amount made out as being due to him by Government or his signature on the bill or other claim preferred against Government before settlement by the Engineer-in-Charge of the account or claim by payment to the bank. While the receipt given by such banks shall constitute a full and sufficient discharge for the payment, the contractor shall wherever possible present his bills duly receipted and discharges through his bankers.

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

CLAUSE C10

Materials supplied by Government

Materials which Government will supply in rare case are shown in schedule 'B' which also stipulates quantum, place of issue and rate(s) to be charged in respect thereof. The contractor shall be bound to procure them from the Engineer-in-Charge.

As soon as the work is awarded, the contractor shall finalize the program for the completion of work as per clause 5 of this contract and shall give his estimates of materials required on the basis of drawings/or schedule of quantities of the work. The Contractor shall give in writing his requirement to the Engineer-in-Charge which shall be issued to him keeping in view the progress of work as assessed by the Engineer-in-Charge, in accordance with the agreed phased program of work indicating monthly requirements of various materials. The contractor shall place his indent in writing for issue of such materials at least 7 days in advance of his requirement.

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

The contractor shall submit along with every running bill (on account or interim bill) material wise reconciliation statements supported by complete calculations reconciling total issue, total consumption and certified balance (diameter/section-wise in the case of steel) and resulting variations and reasons therefore. Engineer-in-Charge shall (whose decision shall be final and binding on the contractor) be within his rights to follow the procedure of recovery in clause 42 at any stage of the work if reconciliation is not found to be satisfactory.

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

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

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

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

CLAUSE C10 A

Materials to be provided by the Contractor

The contractor shall, at his own expense, provide all materials, required for the works other than those, which are stipulated, to be supplied by the Government.

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

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

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

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

thereof and in case of default the Engineer-in-Charge may cause the same to be supplied and all costs which may attend such removal and substitution shall borne by the Contractor.

CLAUSE C10 B

Secured Advance on Non-perishable Materials

- i) The contractor, on signing an indenture in the form to be specified by the Engineer-in-Charge, shall be entitled to be paid during the progress of the execution of the work up to 75% of the assessed value of any materials which are in the opinion of the Superintending Engineer nonperishable, non-fragile and noncombustible and are in accordance with the contract and on the site in connection therewith and are

adequately stored and/or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which advance has been made under this sub-clause are incorporated in the work the amount of such advance shall be recovered/deducted from the next payment made under any or the clause or clauses of this contract.

- ii) Mobilization advance not exceeding 10% of the agreement value may be given, if requested by the contractor in writing within one month of the order to commence the work. In such a case the contractor shall execute a Bank Guarantee/ Bond from a Scheduled Nationalized Bank as specified by the Engineer-in-Charge for the full amount of such advance before it is released. Such advance shall be in two or more installments to be determined by the Engineer-In-charge at his absolute discretion. The first installment of such advance before shall be released by the Engineer-in-Charge to the contractor on a request made by the contractor to the Engineer-in-Charge in this behalf. The second and subsequent installment shall be released by the Engineer-in-Charge only after the contractor furnishes a proof of the satisfactory utilization of the earlier installment to the entire satisfaction of the Engineer-In-Charge.

**Plant & Machinery
& Shuttering
Material Advance**

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

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

1. Leasing company which gives certificate of agreeing to lease equipment to the contractor.
3. The contractor.

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

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

- iv) The mobilization advance and plant and machinery advance in (ii) & (iii) above bear simple interest and should be equal to the prevailing rate of interest charged by the bank as mentioned in contract date schedule 'F' and shall be calculated from the date

**Interest &
Recovery**

of payment to the date of recovery, both days inclusive, on the outstanding amount of advance. Recovery of such sums advanced shall be made by the deduction from the contractor's bills commencing after first ten per cent of the gross value of the work is executed and paid, on pro-rata percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered by the time eighty per cent of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount up to the date of the installment.

- v) If the circumstances are considered reasonable by the Engineer-in-Charge, the period mentioned in (ii) and (iii) for request by the contractor in writing for grant of mobilization advance and plant and equipment advance may be extended in the discretion of the Chief Engineer.
- vi) The said bank guarantee for advances shall initially be made for the full amount and valid for the contract period, and be kept renewed from time to time to cover the balance amount and likely period of complete recovery together with interest.
- vii) Any materials including tools plants equipments etc brought to the site shall not be removed from the sites without the written permission of the Engineer-in-charge.

CLAUSE C10 C

**Payment on
Account of
Increase in
Prices/Wages
due to Statutory
Order(s)**

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

If after submission of the tender, the price of any material incorporated in the works (not being a material supplied from the Engineer-in-Charge's stores

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

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

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

CLAUSE C10 CA

Payment on Account of Increase/decrease in Prices of construction materials after receipt of tender.

The price adjustment shall apply for the work done from the start date up to the end of Intended Completion Date or until extended time granted by the Engineer.

The price adjustment shall be determined during each month for bitumen and other inputs

Adjustment for Bitumen Component:

Price adjustment for increase or decrease in the cost of bitumen/emulsion shall be paid in accordance with the following formula:

$$V=(Q \times B) \times (B1 -B)/B$$

V= Increase or decrease in the cost of bituminous work (in Rs) during the month under consideration due to change in the rate of bitumen.

Q= Quantity of bitumen (tonnes) used during the month as determined on the basis of the minimum quantity of bitumen specified for the work as per Specifications.

B= Official retail price of bitumen (Rs./ton) at the nearest location of IOCI/HPCL/BPCL depot on 28 days prior to the last date of Opening of Bids.

B1= Official retail price of bitumen (Rs./ton) at the nearest location of IOCI/HPCL/BPCL depot on 28 days prior to the last date of the period to which a particular Interim payment certificate is related .

Adjustment for all other inputs (labour, materials, plant and machinery, fuel, lubricants, spares, etc.)

Price adjustment for increase or decrease in the cost of all other inputs shall be paid in accordance with the following formula:

$$V_o = R_o \times (W_m - W)/W$$

V = Increase or decrease in the cost of work during the month under consideration due to changes in rates for all inputs other than bitumen.

R = Value of work done during the month excluding bitumen component for which price adjustment considered separately in accordance with above. 'Ro' will include the amount of secured Advance granted for materials other than bitumen, if any, during month, less the amount of secured advance recovered.

W = All India Wholesale price index (all commodities) on 28 days prior to the last date of opening of Bids.

Wm = All India wholesale Price Index (all commodities) for the month under consideration.

NOTE--Price Neutralisation will only be payable if the contractor will Submit the monthly Bill when it is due.

CLAUSE C10 D

Dismantled Material Govt. Property

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

CLAUSE C11

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

The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer-in-Charge and the contractor shall be furnished free of charge one copy of the contract documents together with specification, designs, drawings and instruction as are not included in the standard specifications of Public Works Department specified in Schedule 'F' or in any Bureau of Indian Standard or any other, published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the contract.

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

CLAUSE C 12

Deviations/ Variations Extent and Pricing

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

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

- i) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus.
- ii) 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge after approval from competent authority

Deviation, Extra items and Pricing

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

Deviation, Substituted Items, Pricing

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

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

Deviation, Deviated Quantities, Pricing

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

- 12.3** The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in Schedule 'F' and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of receipt of the notice, revise the rates as per power delegated in PWD Code for the work in question within one month of expiry of the said period of fifteen days having regard to the market rates or current schedule of rate.
- 12.4** The contractor shall send to the Engineer-in-Charge once every three months an up to date account giving complete details of all claims for additional payments to which the contractor may consider himself entitled and of all additional work ordered by the Engineer-in-Charge after approval from competent authority which he has executed during the preceding quarter failing which the contractor shall be deemed to have waived his right. However, the Superintending Engineer is authorized for consideration of such claims on merits.
- 12.5** For the purpose of operation of Schedule 'F' the following works shall be treated as works relating to foundation :
- i) For buildings, compound walls plinth level or 1.2 meters (4 feet) above ground level whichever is lower excluding items of flooring and D.P.G. but including base concrete below the floors.
 - ii) For abutments, piers, retaining walls of culverts and bridges, walls of water reservoirs the bed of floor level.
 - iii) For retaining walls where floor level is not determinate 1.2 meters above the average ground level or bed level.
 - iv) For Roads all items of excavation and filling including treatment of sub-base.
- 12.6** Any operation incidental to or necessary has to be in contemplation of tenderer while filing tender, or necessary for proper execution of the item included in the Schedule of quantities or in the schedule of rates mentioned above, whether or not, specifically indicated in the description of the item and the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or the rate given in the said schedule of rates, as the case may be. Nothing extra shall be admissible for such operations.

CLAUSE C13

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

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

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

CLAUSE C 14

Cancellation of contract in full or part

If the contractor :

- i) at any time makes default in proceeding with the works or any part of the work with due diligence and continues to do so after a notice in writing of 7 days from the Engineer-in-Charge; or
- ii) Commits default to comply with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge; or
- iii) Fails to complete the works or items of work with individual dates of completion, on or before the date(s) of completion, and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge; or
- iv) Shall offer or give or agree to give to any person in Government service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in

relation to the obtaining or execution of this or any other contract for Government; or

- v) Shall enter into a contract with Government in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Accepting Authority/Engineer-in-Charge; or
- vi) Shall obtain a contract with Government as a result of wrong tendering or other non-bonafide methods of competitive tendering; or
- vii) Being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors; or
- viii) Being a company, shall pass a resolution or the Court shall make an order for the winding up of the company, or a receiver or manager on behalf of the debenture holders or otherwise shall be appointed or circumstances shall arise which entitle the Court or debenture holders to appoint a receiver or manager; or
- ix) Shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days; or
- x) Assigns, transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Competent Authority;

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

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

- (a) Take possession of the site and any materials, constructional plant, implements stores, etc., thereon; and/or
- (b) Carry out the incomplete work by any means at the risk and cost of the contractor.

On cancellation of the contract in full or in part, the Engineer-in-Charge shall determine what amount, if any, is recoverable from the contractor for completion of the works or part of the works or in case the works or part of the works is not to be completed, the loss of

damage suffered by Government. In determining the amount, credit shall be given to the contractor for the value of the work executed by him up to the time of cancellation, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor.

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

If the contractor fails to pay the required sum within the aforesaid period of 30 days the Engineer-in-Charge shall have the right to sell any or all of the contractors unused materials, constructional plant, implements, temporary buildings, etc. and apply the proceeds of sale thereof towards the satisfaction of any sums due from the contractor under

the contract and if thereafter there be any balance is outstanding from the contractor, it shall be recovered in accordance with the provisions of the contract.

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

CLAUSE C 15

Suspension of Work

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

The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-Charge.
- ii) If the suspension is ordered for reasons (b) and (c) in sub-para (i) above, the contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25%, for completion of the item or group of items of work for which a separate period of completion is specified in the contract and of which the suspended work forms a part, and;

CLAUSE C16

Action in case Work not done as per Specifications

All works under or in course of execution or executed in pursuance of the contract shall at all times be open and accessible to the inspection and supervision of the Engineer-in-Charge, his authorised subordinates in charge of the work and all the superior officers, officer of the Quality Control Organisation of the Department and of the Cabinet (Technical) Vigilance, and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.

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

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

contractor. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same will be final and binding on the contractor.

CLAUSE C17

Contractor Liable for Damages, defects during maintenance period

If the contractor or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road curb, fence, enclosure, water pipe, cables, drains, electric or telephone post or wired, trees, grass or grassland, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within defect liability period after a certificate final or otherwise of its completion shall have been given by the Engineer-in-Charge as aforesaid arising out of defect or improper materials or workmanship the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Engineer-in-Charge cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his security deposit except for the portion pertaining to asphaltic work which is governed by sub-para (iii) of clause 35 or the proceeds of sale thereof or of a sufficient option thereof. The security deposit of the contractor shall not be refunded before the expiry of defected liability period after the issue of the certificate final or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later.

In case of Maintenance and Operation works of Electrical & Mechanical services, the security deposit deducted from contractors shall be refunded within one month from the date of final payment or within one month from the date of completion of the maintenance contract which ever is earlier.

CLAUSE C18

Contractor to Supply Tools & Plants etc.

The contractor shall provide at his own cost all materials (except such special materials, if any, as may in accordance with the contract be supplied from the Engineer-in-Charge's stores), plant, tools, appliances, implements, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specification or other document forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-Charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting the measurement for examination at any time and from time to time of the work or materials. Failing his so doing the same may be provided by the Engineer-in-Charge at case to the contractor, under this contract or otherwise and/or from his security deposit or the proceeds of sale thereof, or of a sufficient portions thereof.

CLAUSE C18 A

Recovery of Compensation paid to Workman

In every case in which by virtue of the provisions sub-section (1) of Section 12, of the Workmen's Compensations Act, 1923, Government is obliged to pay compensation to a workman employed by the contractor, in execution of the works, Government will recover from the contractor the amount of the compensation so paid; and without prejudice to the right of the Government under sub-section (2) of section 12, of the said Act, Government shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by Government to the contractor whether under this contract or otherwise. Government shall not be bound to contest any claim made against it under sub-section (1) Section 12, of the said Act, except on the written request of the contractor and upon his giving to Government full security for all costs for which Government might become liable in consequence of contesting such claim.

CLUASE C 18 B

Ensuring Payment and Amenities to Workers if Contractor fails

In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract Labour (Regulation and Abolition) Central Rules, 1971, Government is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under

Clause 19H or under the P.W.D. Contractor's Labour Regulations, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by P.W.D. Contractors, Government will recover from the contractor the amount of wages so paid or the amount of expenditure so incurred; and without prejudice to the rights of the Government under sub-section (2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, Government shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by Government to the contractor whether under this contract or otherwise Government shall not be bound to contest any claim made against it under sub-section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request of the contractor and upon his giving to the Government full security for all costs for which Government might become liable in contesting such claim.

CLAUSE C19

Labour Laws to be complied by the Contractor

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

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

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

CLAUSE C19 A

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

CLAUSE C19 B

Payment of Wages

Payment of wages :

- i) The contractor shall pay to labour employed by him either directly or through sub-contractors, wages not less than fair wages as defined in P.W.D. Contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.
- ii) The contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work including any labour engaged by his sub-contractors in connection with the said work, as if the labour had been immediately employed by him.
- iii) In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with the Public Works Department contractor's Labour Regulations made by Government from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorisedly made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation And Abolition) Central Rules, 1971, wherever applicable.
- iv) a) The Engineer-in-Charge concerned shall have the right to deduct from the moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of nonfulfilment of the conditions of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the contract or non-observance of the Regulations.

- b) Under the provision of Minimum Wages (Central) Rules 1950, the contractor is bound to allow to the labours directly or indirectly employed in the works one day rest for 6 days continuous work and pay wages at same rate as for duty. In the event of default the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the persons entitled thereto from any money due to the contractor by the Engineer-in-Charge concerned.
- v) The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Act, 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.
- vi) The contractor shall indemnify and keep indemnified Government again payments to be made under and for the observance of the laws aforesaid and the P.W.D. Contractor's Labour Regulations without prejudice to his right to claim indemnity from his sub-contractors.
- vii) The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.
- viii) Whatever is the minimum wage for the time being, or if the wage payable higher than such wage, such wage shall be paid by the contractor to the workmen directly without the intervention of Jamadar and that Jamadar shall not be entitled to deduct or recover any amount from the minimum wage payable to the workmen as and by way of commission or otherwise.
- ix) The contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by the Jamadar from the wage of workmen.

CLAUSE C19 C

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

CLAUSE C20

Minimum wages Act to be complied with.

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

CLAUSE C21

Work not to be sublet. Action in case of insolvency

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

Compensation

CLAUSE C 22

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

CLUASE C23

Changes in firm's Constitution to be intimated

Where the contractor is a partnership firm, the previous approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concern such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby undertaken by the contractor. If previous approval as aforesaid is not

obtained, the contract shall be deemed to have been assigned in contravention of Clause 21 thereof and the same action may be taken, and the same consequences shall ensue as provided in the said Clause 21.

CLAUSE C24

Approval of Engineer Incharge

All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Engineer-in-Charge who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.

CLAUSE C 25

Settlement of Disputes & Arbitration

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

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

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

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

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each such dispute along with the notice

for appointment of arbitrator and giving reference to the rejection by the Chief Engineer of the appeal.

It is also a term of this contract that no person other than a person appointed by such Engineer-in-Chief or the administrative head of the department as aforesaid should act as arbitrator and if for any reason that is not possible, the matter shall not be referred to arbitrator at all.

It is also a term of this contract that if the contractor does not make any demand for appointment of arbitrator in respect of any claims in writing as aforesaid within 45 days of receiving the intimation from the Engineer-in-Charge that the final bill is ready for payment, the claim of the contractor shall be deemed to have been waived and absolutely barred and the Government shall be discharged and released of all liabilities under the contract in respect of these claims.

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

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

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

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

CLAUSE C26

Contractor to indemnify Govt. against Patent Rights

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

CLAUSE C27

Lumpsum Provisions in Tender

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

CLAUSE C28

Action where no Specifications

In the case of any class of work for which there is no such specifications as referred to in Clause 11, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications, Indian Road Congress for road works and Indian Building Congress for building works or any central government agency. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturers specifications. If not available then as per Department Specifications. In

case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-Charge.

CLAUSE C 29

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

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

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or Government will be kept withheld or retained as such by the Engineer-in-Charge or Government till the claim arising out of or under the contract is determined by the arbitrator (if the contract is governed by the arbitration clause) or by the competent court, as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the Engineer-in-Charge or the Government shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company as the case may be, whether in his individual capacity or otherwise.

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

CLAUSE C29 A

Lien in respect of claims in other Contracts

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

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

on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

CLAUSE C30

Unfiltered water supply

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

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

CLAUSE C31

Return of surplus material

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

CLAUSE C32

Hire of Plant & Machinery

- i) The contractor shall arrange at his own expense all tools, plant machinery and equipment (hereinafter referred to as T & P) required for execution of the work except for the Plant & Machinery listed in Schedule 'C' and stipulated for issue to the contractor. If the contractor requires any item of T & P on hire from the T & P available will, if such item is available, hire it to the contractor at rates to be agreed upon between him and the Engineer-in-Charge. In such a case all the conditions hereunder for issue of T & P shall also be applicable to such T & P as is agreed to be issued.
- ii) Plant and Machinery when supplied on hire charges shown in Schedule 'C' shall be made over and taken back at the departmental equipment yard/shed shown in Schedule 'C' and the contractor shall bear the cost of carriage from the place of issue to the site of work and back. The contractor shall be responsible to return the plant and machinery in the condition in which it was handed over to him, and he shall be responsible for all damage caused to the said plant and machinery at the site of work or elsewhere in operation and otherwise during transit including damage to or loss of plant and for all losses due to his failure to return the same soon after the completion of the work for which it was issued. The Divisional Engineer shall be the sole judge to determine the liability of the contractor and its extent in this regard and his decision shall be final and binding on the contractor.
- iii) The plant and machinery as stipulated above will be issued as and when available and if required by the contractor. The contractor shall arrange his programme of work according to the availability of the plant and machinery and no claim, whatsoever, will be entertained from him for any delay in supply by the Department.

- iv) The hire charges shall be recovered at the prescribed rates from and inclusive of the date the plant and machinery made over up to and inclusive of the date of the return in good order even though the same may not have been working for any cause except major breakdown due to no fault of the contractor or faulty use requiring more than three working days continuously (excluding intervening holidays and Sundays) for bringing the plant in order. The contractor shall immediately intimate in writing to the Engineer in Charge when any plant or machinery gets out of order requiring major repairs as aforesaid. The Engineer in Charge shall record the date and time of receipt of such intimation in the log sheet of the plant or machinery. Based on this if the breakdown occurs before lunch period or major breakdown will be computed considering half a day's breakdown on the day of complaint. If the breakdown occurs in the post lunch period of major breakdown will be computed starting from the next working day. In case of any dispute under this clause the decision of the Superintending Engineer shall be final and binding on the contractor.
- v) The hire charges shown above are for each day of 8 hours (inclusive of the one-hour lunch break) or part thereof.
- vi) Hire charges will include service of operating staff as required and also supply of lubricating oil and stores for cleaning purposes. Power fuel of approved type, firewood, kerosene oil etc. for running the plant and machinery and also the full time chowkidar for guarding the plant and machinery against any loss or damage shall be arranged by the contractor who shall be fully responsible for the safeguard and security of plant and machinery. The contractor shall on or before the supply of plant and machinery sign an agreement indemnifying the Department against any loss or damage caused to the plant and machinery either during transit or at site of work.
- vii) Ordinarily, no plant and machinery shall work for more than 8 hours a day inclusive of one hour lunch break. In case of an urgent work however, the Engineer in Charge may, at his discretion, allow the plant and machinery to be worked for more than normal period or 8 hours a day. In that case the hourly hire charges for overtime to charge (1/8)th of the daily charges) subject to a minimum of half day's normal charges on any particular day. For working out hire charges for over time a period of half an hour and above will be charged as one hour and a period of less than half an hour will be ignored.
- viii) The contractor shall release the plant and machinery every seventh day for periodical servicing and/or wash out which may take about three to four hours or more. Hire charges for full day shall be recovered from the contractor for the day of servicing/Wash out irrespective of the period employed in servicing.
- ix) The plant and machinery once issued to the contractor shall not be returned by him on account of lack of arrangements of labour and materials, etc. on his part, the same will be returned only when they are required for major repairs or when in the opinion of the Engineer in Charge the work or a portion of work for which the same was issued is completed.
- x) Log Book for recording the hours of daily work for each of the plant and machinery supplied to the contractor will be maintained by the Department and will be countersigned by the contractor or his authorised agent daily. In case the contractor contests the correctness of the entries and/or fails to sign the Log Book the decision of the Engineer in Charge shall be final and binding on him. Hire charges will be calculated according to the entries in the Log Book and will be binding on the contractor. Recovery on account of hire charges for road rollers shall be made for the minimum number of days worked out on the assumption that a roller can consolidate per day and maximum quantity of materials or area surfacing as noted against each in the annexed statement (see attached annexure).
- xi) In the case of concrete mixers, the contractors shall arrange to get the hopper cleaned and the drum washed at the close of the work each day or each occasion.
 - a) In case rollers for consolidation are employed by the contractor himself, log book for such rollers shall be maintained in the same manner as is done in case of departmental rollers, maximum quantity of any item to be consolidated for each roller day shall also be same as in Annexure to Clause 34(x). For less use of

rollers recovery for the less roller days shall be made at the stipulated issue rate.

- xii) The contractor shall be responsible to return the plant and machinery in the condition in which it was handed over to him and he shall be responsible for all damage caused to the said plant and machinery at the site of work or elsewhere in operation or otherwise or during transit including damage to or loss of parts, and for all losses due to him failure to return the same soon after the completion of the work for which it was issued. The Divisional Engineer shall be the sole judge to determine the liability of the contractor and its extent in this regard and his decision shall be final and binding on the contractor.
- xiii) The contractor will be exempted for levy of any hire charges for the number of days he is called upon in writing by the Engineer in Charge to suspend execution of the work provided Government plant and machinery in question have, in fact remained idle with the contractor because of the suspension.
- xiv) In the event of the contractor not requiring any item of plant and machinery issued by Government though not stipulated for issue in Schedule 'C' any time after taking delivery at the place of issue, he may return it after two days written notice or at any time without notice if he agrees to pay hire charges for two additional days without in any way affecting the right of the Engineer in-Charge to use the said plant and machinery during the said period of two days as he likes including hiring out to a third party.

CLAUSE C33

Employment of Technical Staff and employees

Contractors Superintendence, Supervision, Technical Staff & Employees

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

The contractor along with bidding of the tender, intimate in writing to the Engineer-in-Charge the name, qualifications, experience, age, address and other particulars along with certificates, of the technical representative to be in charge of the work. If there is any change then the new incumbents qualifications and experience shall not be lower than specified in Schedule in I.T.B. (Annexure – 2). The Engineer-in-Charge shall within 15 days of issue of letter of acceptance intimate in writing his approval or otherwise it is deemed to be approved. Any such approval may at any time be withdrawn and in case of such withdrawal the contractor shall appoint another such representative according to the provisions of this clause. Decision of the tender accepting authority / Superintending Engineer shall be final and binding on the contractor in this respect. Technical staff shall be available at site within fifteen days of start of work.

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

If the Engineer-in-Charge, whose decision in this respect is final and binding on the contractor, is convinced that no such technical representative or agent is effectively appointed or is effectively attending or fulfilling the provision of this clause, a recovery

shall be effected from the contractor as specified in Schedule 'F' and the decision of the Engineer-in-Charge as recorded in the site order book and measurement recorded in Measurement Books shall be final and binding on the contractor. Further if the contractor fails to appoint a suitable technical representative or responsible agent and if such appointed persons are not effectively present or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the work until such date as a suitable agent is appointed and the contractor shall submit a certificate of employment of the technical representative/responsible agent along with every on account bill/fixed bill and shall produce evidence if at any time so required by the Engineer-in-Charge.

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

The contractor shall provide and employ skilled, semiskilled and unskilled labour as is necessary for proper and timely execution of the work.

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

CLAUSE C34

Levy/Taxes payable by Contractor

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

CLAUSE C35

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

- i) All tendered rates shall be inclusive of all taxes and levies payable under respective statutes. However, pursuant to the Constitution (46th Amendment) Act. 1982, if any further tax or levy is imposed by Statute, after the last stipulated date for the receipt of tender including extensions if any and the contractor thereupon necessarily and properly pays such taxes/levies the contractor shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of the Chief Engineer (whose decision shall be final and binding on the contractor) attributable to delay in execution of work within the control of the contractor.
- ii) The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorised representative of the Government and/or the Engineer-in-Charge and further shall furnish such other information/document as the Engineer-in-Charge may require from time to time.
- iii) The contractor shall, within a period of 30 days of the imposition of any such further tax or levy, pursuant to the Constitution (Forty Sixth Amendment) Act 1982, give a written notice thereof to the Engineer-in-Charge that the same is given pursuant to this condition, together with all necessary information relating thereto.
- iv)

CLAUSE C36

Imprisonment of Contractor

If the contractor is imprisoned, becomes insolvent compound with his creditors, has a receiving order made against him or carries on business under a receiver for the benefit of the creditors or any of them, or being a partnership firm becomes dissolved, or being a company or corporations goes into liquidation or commences to be wound up not being a voluntary winding up for the purpose only of amalgamation or reconstitution the department shall be at liberty.

- (a) To give such liquidator, receiver, or other person in whom the contract may become vested, the option of carrying out the contract or a portion thereof to be determined by the department, subject to his providing an appropriate guarantee for the performance of such contract or.
- (b) To terminate the contract, forthwith by notice in writing to the contractor, the liquidator, the receiver or person in whom the contract may become vested and take further action as provided in the relevant clauses of the contract.

CLAUSE C37

Termination of Contract on death of contractor

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

CLAUSE C38

If relation working in PWD then the contractor not allowed to tender

The contractor shall not be permitted to tender for works in the P.W.D. Division (responsible for award and execution of contracts) in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of the Superintending Engineer and Assistant Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any Gazetted Officer in the P.W.D. or in the concerned department. Any breach of this condition by the contractors of this Department shall lead to blacklisting. If the contractor is registered in any other department, he shall be debarred from tendering in P.W.D. for any breach of this condition.

NOTE : By the term "near relatives" is meant wife, husband, parents and grand parents, children and grand children, brothers and sisters, uncles, aunts and cousins and their corresponding in law.

CLAUSE 39

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

No engineer of gazetted rank or other gazetted officer employed in engineering or administrative duties in an engineering department of the Government of Bihar shall work as a contractor or employee of a contractor for a period of two years after his retirement from government service without the previous permission of State Government in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained said permission prior to engagement in the contractor's service, as the case may be.

CLAUSE C 40

Return of material and recovery for excess material issued

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

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

b) Theoretical quantity of steel reinforcement of structural steel sections shall be taken as the quantity required as per design or as authorised by Engineer in

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

c) For any other material as per actual requirements.

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

For not scheduled items, the decision of the Superintending Engineer regarding theoretical quantities of materials, which should have been actually used, shall be final and binding on the contractor.

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

CLAUSE C41

Release of Security deposit

- On completion of the whole of the work, half of the total amount of security shall be repaid to the contractor after six months of completion of construction activity. However, the balance half of the total amount of security will be returned after completion of defect liability period and after the Engineer has certified that all defects notified by him to the contractor before the end of this period have been corrected and also after recovery of any dues and contractor has submitted additional performance security 1.5% of Maintenance ECV.
- **SECURITY FOR MAINTENANCE SHALL BE RETAINED TILL MAINTENANCE PERIOD AND FINAL HANDOVER.**

CLUASE C42

Responsibility of Technical Staff and employees

Technical officers / staff deployed by the Contractor at any construction site will also be responsible for inferior quality / poor performance of any work and his name will be circulated to all works division of the P.W.D. to debar from any other site, if his name is being proposed by other contractor.

CLAUSE C43

Contractor's Risks

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

CLAUSE C44

Insurance

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

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

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

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

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

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

CLAUSE C45

Cash Flow Estimate to be Submitted

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

CLAUSE C46

Safety, Security and Protection of the Environment

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

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

CLAUSE C47

Cost of Samples

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

CLAUSE C48

Cost of Tests

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

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

CLAUSE C49

Cost of Tests not Provided for

If any test required by the Engineer which is :

- (a) not so intended by or provided for,
- (b) (in the cases above mentioned) not so particularised, or

(c) (though so intended or provided for) required by the Engineer to be carried out at any place other than the Site or the place of manufacture, fabrication or preparation of the materials or Plant tested,

shows the materials, Plant or workmanship not to be in accordance with the provisions of the Contract to the satisfaction of the Engineer, then the cost of such test shall be borne by the Contractor, but in any other case department will bear the cost.

CLAUSE C50

Commencement of Works

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

CLAUSE C51

Substantial Completion of Parts

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

CLAUSE C52

Force Majeure

Force Majeure

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

CLAUSE C53

Recovery

Force Majeure

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

NOTE :

In case of difference or ambiguity in Hindi and English version, the English version will prevail.

SECTION 4
CONTRACT DATA
(PROFORMA OF SCHEDULES)

PROFORMA OF SCHEDULES

(Operative Schedules to be supplied separately to each intending tenderer)

SCHEDULE 'A'

Schedule of quantities

Sl. No.	Description of Item(with brief specification and reference to book of specification)	BILL OF QUANTITY				Amount
		Quantity	Unit	Rate		
				In figure	In words	
1	2	3	4	5	6	7
1	FOR construction work	As per attached B.O.Q				
2	For Ordinary maintenance	As per attached work schedule				
3	For Periodic maintenance	As per Attached BOQ				
4	For Emergency work	Provisional sum	lump sum	----- -----	----- --	###.##

SCHEDULE 'B'

Schedule of materials to be issued to the contractor.

S. No.	Description of item	Quantity	Rates in figures & words at which the material will be charged to the contractor	Place of Issue
1	2	3	4	5

SCHEDULE 'C'

Tools and plants to be hired to the contractor

Sl. No.	Description	Hire charge per day	Place of Issue
1	2	6	7

SCHEDULE 'D'

Extra schedule for specific requirements/ document for the work, if any.

SCHEDULE 'E'

Reference to General Condition of Contract.

Name of work:.

Estimated cost of work : Rs. #####

Earnest money : Rs. 2% upto 10 Crores & 1 percent of the amount above 10 crores

ii) Performance Guarantee: 2% of tendered value for construction including earnest money+0.5% of tendered value for maintenance part

iii) Security Deposit : 8% of tendered value.

iv) Defect Liability period: Two years / Three years

v) Rate of Interest : Prevailing Lending rate (P.L.R.)

GENERAL RULES AND :
DIRECTIONS

Officer inviting tender
Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3

See below

Definitions:

2(v)	Engineer-in-Charge	
2(x)	Percentage on cost of materials and labour to cover all overheads and profits.	10 %
2(xi)	Standard Schedule of Rates	dd. mm .yy (RCD Govt. of Bihar)
2(xii)	Department & Employer	Road Construction Department, Govt. of Bihar
9(ii)	Standard PWD Contract Form	PWD 2/3 as modified & corrected upto _____

Clause 1

i)	Time allowed for submission of performance Guarantee from the date of issue of letter of acceptance, in days	28 Days
ii)	Maximum allowable extension beyond the period provided in i) above in days	NIL

Clause C2

Authority for fixing compensation -----S.E.
under clause 2.

ClauseC 2A

Whether Clause 2A shall be applicable Yes/No

Clause C5

Number of days from the date of issue of notice to start. 10 days

Mile stone(s) as per table given below:

[This shall apply to construction works only for maintenance work General conditions maintenance shall apply]

Table of Mile Stone(s)

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

AND

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

Time allowed for execution of work	## MONTHS
Time allowed for execution of maintenance	60 months
Authority to give fair and reasonable extension of time for completion of work.	Executive Engineer, in case of repair work. Superintending Engineer/ Chief Engineer in case of original work as per limit. Engineer-In-Chief in case of work where price escalation is allowed.

ClauseC 7

Gross work to be done together with net payment/ adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment	As per Rule

Clause C10CC

Cluase 10CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column	-

Clause C11

Specifications to be followed for execution of work	MORT&H

Clause C 12	
Deviation, variation Extent and pricing.	As per P.W.D. Code clause 182A, 292XII, 293XVII & 294XVI
Clause C16	
Competent Authority for deciding reduced rates.	Superintending Engineer

***The following document also form part of the contract.**

***The law, which applies to the contract, is**

***The court of jurisdiction**

***The Language of contract document**

***The limit of sub-contracting**

***The Currency of the Contract is**

Special Condition, BID document

The Law of Union of India.

Patna

English

.....

Indian Rupees

CMBD 01.01.2014

SECTION 5
SPECIAL CONDITION OF CONTRACT
(Condition of Particular Application)

Management Requirement

34. Contractor's Quality Assurance Plan (Applicable For both Construction & Maintenance)

The purpose of the Contractor's Quality Assurance Plan is to integrate the requirements of the contract and the Contractor's quality assurance systems to deliver the Services.

The Contractor's Quality Assurance Plan describes the methods and procedures which the Contractor will apply for the execution of the Contract, including how the contractor will:

- (a) identify the quality requirements specific to the contract,
- (b) plan and execute the work to satisfy those requirements
- (c) inspect and/or test the work to ensure compliance with the quality requirements
- (d) ensure strict document control and structured filing of contract administration documents
- (e) record and monitor the results as evidence of compliance
- (f) monitor the material supply and delivery processes;
- (g) ensure the ability to trace materials incorporated in the works;
- (h) undertake testing and measurement requirements;
- (i) provide evidence of testing apparatus being recently calibrated;
- (j) undertake internal audits;
- (k) provide staff training;
- (l) demonstrate manufacturer's specification confirming compliance of materials;
- (m) record of required testing, measurement and design sheets;
- (n) document all non-conformances; , and
- (o) ensure that prompt action is taken to correct non-compliance.

The Contractor's Quality Assurance Plan must clearly describe the systems, procedures and methods that will be used to deliver and monitor compliance of the Services.

The plan is to be sighted and agreed by the Engineer in charge within 8 weeks of the commencement of the contract. If a modified Contract Quality Plan is not presented by the Contractor within 8 weeks, the sample 'Draft Quality Plan', issued with the Bidding Documents, shall be the approved Contract Quality Plan until other modifications to work practices and responsibilities are presented by the Contractor and approved by the Employer. A non-refundable weekly penalty of **Rs 1,000** shall apply until the Plan is presented.

The Contractor shall carry out all works in accordance with the approved Contract Quality Plan. This Quality Control plan shall comply with the requirements of Section 900 of the MoRTH Specifications with respect to testing frequencies and specified tolerances where applicable. The practices and performances of the Contractor will be observed and audited against the agreed Plan.

The Contractor shall establish a qualified engineer within his own organizational structure whose task is to verify continuously the degree of compliance by the Contractor with the

required Response Codes. That contractor's engineer will also be responsible for the generation and presentation of the information needed by the Contractor for the *Maintenance Program Compliance Sheet (OM08 in Appendix C)*. It will require a system that is able to document a detailed and complete knowledge of the condition of the network and to program the management and maintenance requirements.

The Employer shall instruct the Contractor to revise and or resubmit this Quality Plan if amendments are required for the Quality Plan to be deemed suitable for the Contract. The Contractor shall give every assistance to the Employer in carrying out any document and/or field audits that the Employer may require.

The compliance (or non-compliance) of the Contractor in achieving the Response Time for Ordinary Maintenance will be reported monthly by the Contractor to the Employer in the form of the *Maintenance Program Compliance Sheet*. The sheets form part of the Contractor's monthly invoice, and shall be submitted with the *Monthly Works Program (OM06)*. Where there is a noted non-compliance, the *Non-Conformance Report (OM09)* should be similarly submitted stating reasons. As non-compliance may result in a payment penalty, so it would be in the Contractor's best interests to fully explain the reason for not achieving the 'Response Time'. These sheets form the basis of any dispute and will be periodically audited by the Employer against the Contractor's monthly program.

A sample quality plan is offered as part of the bidding documents. This plan will serve as a temporary quality plan until the Contractor submits his own details. An electronic copy will be forwarded to the successful bidder.

35. Health and Safety Management Plans(Applicable For both Construction & Maintenance)

If required in the Special Conditions of Contract (SC) the Program of Performance shall include a Health and Safety Management Plan.

The purpose of the Health and Safety Management Plan is to foster a responsible attitude towards occupational health and safety and to comply with the provisions of the relevant act/regulations detailed in Section V part H.

Because of the nature of the Services, the Contractor may occasionally be exposed to hazardous situations which could involve risk of various degrees of harm, to the contracting staff and/or the public.

Situations will arise when it is not practical to eliminate or isolate significant hazards. In these situations the hazards must be minimized by ensuring planned protection systems (e.g. equipment, clothing) are actually used.

The Health and Safety Management Plan must be complied with by the Contractor's personnel and all subcontractors at all times.

The Health and Safety Management Plan shall, when implemented in accordance with the plan requirements:

- (a) Ensure the systematic identification of existing and new hazards on the work site(s)

- (b) Ensure the minimization of significant hazards, where elimination and isolation are both impractical
- (c) Ensure the provision and use of appropriate protective measures
- (d) Include emergency procedures for dealing with accidental spillage, pollution or imminent danger.
- (e) Ensure regular review and assessment of each hazard identified and monitor employees exposure to these hazards.
- (f) Ensure reporting and recording of work site safety incidents so health and safety problems can be addressed quickly and regularly. It is a requirement of this Contract that any such incident be advised promptly to the Employer.

The Delivery Time for the initial Health and Safety Program shall be not later than **21 days** after the Star

36. Traffic Management **(Applicable For both Construction & Maintenance)**

In addition to the Traffic Management requirement of MoRTH Clause 112 the Contractor is to ensure the following.

The Contractor is responsible to ensure the safety of their workers and road users, including non-motorized road users and pedestrians, by installing and maintaining at his cost, adequate signalling and demarcation of work sites, which in addition must comply with the applicable legislation.

If the execution of services and works under the Contract is likely to interfere with traffic, the Contractor shall take at his cost the measures necessary to limit such interference to the strict minimum, or any danger to the workers or others. For that purpose, he is entitled to install, within the right-of-way of the road, temporary bypasses, structures or other modifications to be used by traffic during the execution of works and services. The Contractor shall notify the Employer prior to implementing any such temporary installations.

On both sides, suitable regulatory / warning signs as approved by the Employer shall be installed for the guidance of road users. On each approach, at least two signs shall be put, one close to the point of actual working zone and the other 100 to 150 m away as advance warning sign. The signs shall be of approved design and of reflective type.

If the execution of Works and Services by the Contractor makes it necessary to temporarily close a road section, and a traffic detour has to be implemented over other public roads or streets, the Contractor shall be responsible for the cost of constructing the detour and placing adequate signalling of the detour. Additionally, if the installation of a detour is necessary due to the failure of any drainage structures, the Contractor shall construct a detour with adequate signing for the safe passage of the travelling public.

The Contractor shall inform the Employer, Local Authorities and the local Police about such activities to be carried out by him which may cause any significant interruptions or changes to the normal traffic patterns. Such information shall be made in writing and at least seven (7) days before the beginning of such activities. Upon request from the Contractor, the Employer shall assist the Contractor in the coordination with the local authorities and the local police.

The cost of implementing all traffic management provisions shall be deemed to be included in the Lump Sum component for Ordinary Maintenance, Initial Rectification, and Periodic Maintenance and in the rates of Minor Improvement Works.

The Contractor is to take note of the following special circumstances:

(i) Obstruction to traffic

If broken down vehicles or any other cause obstructs the road, the Contractor shall take the following steps to safeguard traffic:

- a) Provide any signs, traffic controllers, etc., necessary to protect the public;
- b) If the person responsible can be located, ask them to remove the obstruction immediately;
- c) In cases of serious obstruction or obstructions which may remain overnight, inform the Employer who may direct action to be taken by the Contractor.

(ii) Private entrances

Any person wishing to construct a private entrance to a property must first obtain the consent of the Employer. Any new entrance observed by the Contractor, shall be reported to the Employer for his information and action.

The maintenance of the surfacing of a private entrance is the responsibility of the owner, however the Contractor shall maintain all private entrance culverts as part of the Lump Sum

36.1 Traffic Management Plan

The Program of Performance shall include a Traffic Management Plan. The Traffic Management Plan establishes the practices for traffic management at work sites. The Traffic Management Plan must be developed by the Contractor and agreed with the Employer. The Contractor shall effectively implement all traffic management requirements in accordance with MoRTH Clause 112 and Clause 36 of CMBD in respect of all works under the Contract.

The objectives of the Traffic Management Plan are to:

- (a) clearly define and document the responsibilities and chain of command for the development, implementation and management of traffic control measures and systems
- (b) establish the minimum requirements for temporary traffic control
- (c) establish the minimum geometric, cross section and surfacing standards for temporary works
- (d) provide appropriate transitions and enable safe and efficient traffic flow into, through and out of work sites
- (e) protect the Contractor's personnel at all times
- (f) protect the Assets and the Contractor's resources at all times.
- (g) meet the operational requirements for the road

The Traffic Management Plan must include at least the following:

- A documented process for preparation, review and approval of the Traffic Management Plan
- A document tracking and control system to ensure that only the latest operative copy of the Traffic Management Plan is in circulation
- Contact details for Contractor, Principal, emergency services and other stakeholders
- Layout diagrams, method statements etc for implementation of traffic control while undertaking each aspect of the Services (including site specific layout diagrams and method statements if the Services require traffic control measures not covered by standard codes of practice)

The Delivery Time for the initial Traffic Management Plan shall be not later than **21** days after the Start Date.

37 Environmental Management Plan **(For both Construction & Maintenance)**

The Program of Performance shall include an Environmental Management Plan. The plan shall address but not be limited to the Environmental issues defined in Section V Part H “Environmental and Social Requirements”.

37. Signage and Road Safety. (For both Construction & Maintenance)

The following notes requirements are to be read in conjunction with the Specifications .

(i) Signs

Signs consist of all ground (post-mounted) signs located along the roadway and include the following types of signs:

- Regulatory Signs
- Warning Signs
- Direction Signs
- Information and Traffic Instruction Signs
- Route Markers and Kilometre Markers
- Village Name Signs
- Hazard Markers
- Service and Tourist Signs, except privately funded signs identified by the Employer.

The Contractor shall ensure that the signs are maintained in good condition at all times and shall wash and clean sign faces, straighten posts, level sign boards, remove posters, tighten bolts and undertake minor repairs.

38. Environmental Requiremen (for both Maintenance and construction)

38.1 Environmental Specification

1.General

2. Construction camp and Workers Camp
3. Establishing Construction Plant
4. Quarry Operations
5. Borrowing of Earth
6. Soil Erosion and Sedimentation Control

7. Substance Hazards to Health
8. Fuel and Chemical Storage
9. Water Quality
10. Air Quality
11. Noise
12. Flora and Fauna
13. First Aid Facilities
14. Transmission of Disease
15. Conservation of Religious Structures and Shrines
16. Preservation of Archeological Assets and Antiquities
17. Environmental Enhancement
18. Management of Waste Materials
19. Road Encroachments
20. Labor
21. Workers Accident Risks
22. Reinstatement of the Land
23. Contractors Checklist
24. Legislative Permits/Approvals

The “**Environmental Management Framework**” (EMF) has been prepared for Contracts under OPRMC. Part H is to be read in conjunction with the **EMF**, which is available at the Employer’s office by request. The Contractor’s checklist is also prepared and given in **Appendix F.1**, which is to be submitted to the Employer and serves as basis for complying with safeguard measures to be implemented by the Contractor and monitored by the Employer. The Environmental Management Action Plan (EMAP) of EMF is also given in **Appendix F.2**, which shall be read in conjunction with the environmental specification. **Appendix F.3** gives Environmental Sensitive Areas through which works shall not proceed without clearance from the Employer.

38 .2 General

The Contractor shall be required to take all necessary measures and precautions and otherwise ensure that the execution of the works and all associated operations on-site or off-site are carried out in conformity with the statutory and regulatory environmental requirements including those prescribed in the EMF and elsewhere in this document.

The Contractor shall take all the measures and precautions to avoid any nuisance or disturbance arising from the execution of the works. This shall, wherever possible be achieved by suppression of the nuisance at source rather than abatement of the nuisance once generated. The provisions of this sub-clause shall however, be disregarded in respect of emergencies required for saving life or for the safety of the works.

In the event of any spoil or debris or silt from the sites being deposited on adjacent lands, the Contractor shall immediately remove such spoils, debris or silt and restore the affected area to its original state to the satisfaction of the Employer.

Surplus excavation materials and topsoil shall, wherever possible, be used to reinstate quarries or borrow pits or other areas as may be approved by the Employer. Such materials should be spread in such a manner as to limit subsequent erosion and shall be re-vegetated as existing ground cover dictates. Restoration of borrow pits and quarries shall be undertaken in an appropriate time frame to avoid formation of cess pools and other environmental hazards.

Contractor shall comply with the requirements of various environmental statutes, as may be applicable, some of which are mentioned below:

- Environment (Protection) Act, 1986, and as amended
- Water (Prevention and Control of Pollution) Act, 1974, and as amended
- Air (Prevention and Control of Pollution) Act, 1981, and as amended
- Noise Pollution (Control and Regulation) Rules, 2000, and as amended
- Manufacture, Storage and Import of Hazardous Chemical Rules of 1989 and amendments of 1994, 2000 and 2002
- Hazardous Waste (Management and Handling) Rules
- The Wildlife (Protection) Act, 1972, and as amended
- Forest Conservation Act, 1980, and as amended
- Motor Vehicle Rules, 1989, and as amended
- Public Liability Insurance Act, 1991, and as amended
- National Environmental Tribunal Act, 1995, and as amended
- National Environment Appellate Authority Act, 1997, and as amended
- Contract Labour (Regulation and Abolition) Act 1970, and as amended
- Workmen Compensation Act 1923, and as amended
- The Factories Act 1948, and as amended
- The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996, and as amended
- Child Labour (Prohibition and Regulation) Act 1986, and as amended
- Inter-State Migrant Workmen's (Regulation of Employment and Conditions of Service) Act 1979

38.3 Construction Camp and Workers Camp

Unless otherwise specified the Contractor is at liberty to make his own arrangements with landowners to establish construction camps and workers camp. Prior to the development of such camps the Contractor shall submit to the Employer the signed authority of the landowner for the Contractor to establish the construction camp on any land. Location of such camp shall be 1.5 km from boundaries of designated Reserved Forests, Sanctuary or National Park, 1.5 km from river, stream and lake and 500 m from ponds, 250 m from the boundary of State and National highways and 1.5 km from the nearest habitation.

The Contractor shall also submit to the Employer the following information signed by the landowner and the Contractor:

- Present land use category
- details of compensation to be paid,
- agreed period of tenure,
- any specific requirements of the landowner,
- photographs of the site in its original condition, and
- details of proposed and agreed site restoration plan after completion of the project works.

Contractor shall provide and maintain proper sanitation and adequate water supply facilities including potable drinking water at his own cost to the workers. All camp

facilities shall be maintained in a safe clean and or appropriate condition throughout the construction period.

The Contractor shall provide, equip, and maintain adequate first aid facilities and erect conspicuous notice boards directing where these are situated and provide all required transport. The Contractor shall comply with the government medical or labour requirements at all times and provide, equip and maintain first aid centre where directed and at all times have experienced first aid personnel available throughout the works for attending injuries.

At the completion of construction, all construction camp facilities shall be dismantled and removed from the site. The site shall be restored to a condition in no way inferior to the condition prior to commencement of the works. Various activities to be carried out for site rehabilitation include:

- Oil and fuel contaminated soil shall be disposed of in a deep trench as given in Sl. No. C4 of EMAP (Appendix F.2).
- Soak pits, septic tanks shall be covered and effectively sealed off.
- Debris (rejected material) should be disposed off suitably (refer Appendix 11 of EMF for detailed guideline).
- Ramps created should be levelled.
- Underground water tank in a barren/non-agricultural land can be covered. However, in an agriculture land, the tank shall be removed.
- If the construction camp site is on an agricultural land, top soil can be spread so as to aid faster rejuvenation. Proper documentation of rehabilitation site is necessary. This shall include the following:
 - Photograph of rehabilitated site;
 - Land owner consent letter for satisfaction in measures taken for rehabilitation of site;
 - Certification from Employer or delegated Representative.

In cases, where the construction camps site is located on a private land holding, the contractor would still have to restore the campsite as per this guideline. The rehabilitation is mandatory and should be included in the agreement with the landowner by the contractor. Also, he would have to obtain a certificate for satisfaction from the landowner. If such a statement is not submitted, the Employer may withhold payment as per the payment deduction summary for Contract given in C7(iii) of the Technical Specifications

38.4 Establishing construction plants (Hot mix plant, Crusher, DG sets etc.)

All material from bituminous work shall be sourced from Hot Mix Plants (HMP), road side pan boiling of bitumen shall not be carried out. If absolutely necessary, with the Employer's approval, mobile hot mixer with hood may be used at least 1.5 km from the nearest habitation in the cross wind direction.

During the establishment of the construction plant the Contractor shall submit the Consent for Establishment (CFE) from BSPCB to the Employer. Location of construction plant shall be from 1.5 km away from settlement, school, hospital on downwind directions, 1.5 km from any archaeological site, 1.5 km from ecologically sensitive areas i.e. forest, national park, sanctuary etc., 1.5 km from rivers, streams and lakes, 500 m from ponds, 500 m from National Highway, 250 m from State Highway, 100 m from District roads and other roads (The distance are to be measured from edge of Road to

boundary of site), away from agricultural land and preference to barren land. Complying all relevant provisions of the Factories Act, 1948 and the Building and other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996.

38.5 Quarry Operations

The Contractor shall obtain materials from licensed and Government approved quarries. In case of opening new quarry the Contractor shall obtain materials only after obtaining necessary license and lease deed from Mining Department, District Administration and Forest Department etc., as shall be applicable. Copy of such permission shall be submitted to the Employer. The quarry operation shall be undertaken within the purview of the rules and regulations in force.

Quarry Operations and Management (if new quarries are opened)

- New quarry shall be at least 1.5 km away from the settlement, forest and other ecologically sensitive areas;
- Quarry shall be away from water body;
- Contractor shall estimate water requirement for dust suppression at quarry sites during operation and for water spraying on *kutchha* (non-metal) haul road and ensure availability of water by identifying sources and obtaining necessary permission;
- Contractor shall prepare quarry sites operation and redevelopment plan considering surrounding land uses, local needs and agreement with the landowner;
- Only licensed blaster i.e. short-firer certificate holder will be responsible for quarry blasting;
- Permits for transportation, storage and use of explosive, as will be required, shall be obtained from the Controller of Explosive;
- Overburden shall be removed and disposed as per Appendix 10 of EMF;
- In case of blasting, the procedure and safety measures shall be taken as per The Explosive Rules, 1983;
- The Contractor shall ensure that all workers related safety measures shall be taken Quarry operation will be undertaken in stages with adequate benching; and
- Redeveloping the area within 2 weeks (or as will be agreed upon) of completion of quarry material collection.

38.6 Use of Explosive for Blasting

The Contractor shall adopt any method or methods of blasting consistent with the safety and job requirements. Prior to starting any phase of the operation the Contractor shall provide information describing pertinent blasting procedures, dimension and notes.

The magazine for the storage of explosives shall be built as per national / international standards and located at the approved site. No unauthorized person shall be admitted into the magazine which when not in use shall be kept securely locked. No matches or inflammable material shall be allowed in the magazine. The magazine shall have an effective lightning conductor. The following shall be displayed in the lobby of the magazine:

- A copy of the relevant rules regarding safe storage in English and in the language with which the workers concerned are familiar.
- A statement of up-to-date stock in the magazine.
- A certificate showing the last date of testing of the lightning conductor.

- A notice that smoking is strictly prohibited.

All explosives shall be stored in a secure manner in compliance with all laws and ordinances, and all such storage places shall be clearly marked. Where no local laws or ordinances apply, storage shall be provided to the satisfaction of the Engineer in charge and in general not closer than 300 m from the road or from any building or camping area or place of human occupancy. In addition to these, the Contractor shall also observe the following instructions and any further additional instructions which may be given by the Employer and shall be responsible for damage to property and any accident which may occur to workmen or the public on account of any operations connected with the storage, handling or use of explosives and blasting.

38.7 Blasting Operations

The blasting shall be carried out during fixed hours of the day preferably during the mid-day luncheon hour or at the close of the work as ordered in writing by the Employer. The hours shall be made known to the people in the vicinity. All the charges shall be prepared by the man in charge only.

The Contractor shall notify each public utility company having structures in proximity to the site of the work of his intention to use explosives. Such notice shall be given sufficiently in advance to enable the companies to take such steps as they may deem necessary to protect their property from injury. In advance of any blasting work within 50 m of any railway track or structures, the Contractor shall notify the concerned Railway Authority of the location, date, time and approximate duration of such blasting operations.

Red danger flags shall be displayed prominently in all directions during the blasting operations. The flags shall be planted 200 m and 500 m from the blasting site in all directions for blasting at work site and quarry, respectively. People, except those who actually light the fuse, shall be prohibited from entering this area, and all persons including workmen shall be excluded from the flagged area at least 10 minutes before the firing, a warning siren being sounded for the purpose.

38.8 Borrowing of Earth (in case of opening of new borrow areas)

38.8.1 Borrow Area Selection

Borrowing within the ROW is prohibited-under this contract. However, earth available from excavation for roadside drains as per design, may be used as embankment material (if necessary and applicable), subject to approval of the Employer, with respect to acceptability of material.

Borrowing to be avoided on the following areas:

- For land close to toe line, the minimum distance shall be 30m distance from ROW and 5 m from toe of embankment, whichever is higher.
- Irrigated agricultural lands (In case of necessity for borrowing from such lands, the topsoil shall be preserved in stockpiles.
- Land within 1km of settlements.
- Environmentally sensitive areas such as Reserve Forests, Protected Forests, Sanctuary, wetlands. Minimum distance of 1.5 km should be maintained from such areas.
- Unstable hill-sides.

- Water-bodies (only if permitted by the local authority, and with specific re-development plans approved by the Employer)
- Areas known to support rare plant/ animal species;
- Adequate drainage system shall be provided to prevent the flooding of the excavated area
- At the stockpiling locations, the Contractor shall construct sediment barriers to prevent the erosion of excavated material due to runoff.
- During excavation slopes shall be 1:1 or 2H:1V to prevent their sliding.

38.8.2 Documentation of Borrow Pit

The contractor must ensure that following data base must be documented for each identified borrow areas before commencing the borrowing activity that provide the basis of the redevelopment plan.

- Chainage along with offset distance;
- Area (Sq.m);
- Photograph and borrow pit from all sides;
- Type of access/width/kutcha/pucca etc from the carriageway;
- Soil type, Slope/drainage characteristics;
- Water table of the area or identify from the nearest well, etc;
- Existing land use, for example barren/agricultural/grazing land;
- Location/name/population of the nearest settlement from borrow area;
- Quantity excavated (likely and actual) and its use;
- Copy of agreement with owner/government; and

Borrow areas shall be redeveloped based on terrain, surrounding land use and local needs, such as agriculture land, water tank, plantation etc. Rehabilitation certificate from the land owner along with at least four photograph of the rehabilitated site from different angles.

38.9 Soil Erosion and Sedimentation Control

The Contractor shall carry out the works in such a manner that soil erosion is fully controlled, and sedimentation and pollution of natural watercourses, ponds, tanks and reservoirs is avoided. The stipulations in Clause 308 of the Technical Specification of MoRTH (for Roads and Bridges) shall govern.

38.10 Substances Hazardous to Health

The Contractor shall not use or generate any materials in the works, which are hazardous to the health of persons, animal or vegetation. Where it is necessary to use some substances, which can cause injury to the health of workers, the Contractor shall provide protective clothing or appliances to his workers.

All workers employed on mixing bituminous material, cement, lime mortars, concrete etc., will be provided with protective footwear and protective goggles. Workers, who are engaged in welding works, would be provided with welder's protective eye-shields. Stone-breakers will be provided with protective goggles and clothing and will be seated at sufficiently safe intervals.

38.11 Fuel and Chemical Storage

All fuel and chemical storage shall be sited on an impervious base within an embanked area and secured by fencing. Location of fuel storage and refilling areas at least 500m from all cross drainage structures and important water bodies and storing of fuel and lubricants on a sand flooring of at least 6" thick, done on brick edge flooring and polyethylene sheet. The base and walls of the embankment shall be impermeable and of capacity to contain 125 % of the volume of tanks (i.e. 25 % of spare capacity).

Filling and refuelling shall be strictly controlled and subjected to formal procedures. All valves and trigger guns shall be resistant to unauthorised interference and vandalism and be turned off and securely locked when not in use. The contents of any tank or drum shall be clearly marked. Measures shall be taken to ensure that no contamination happens or discharges enter any drain or watercourse.

38.12 Water Quality

Arrangement for construction water shall be the sole responsibility of the Contractor. Contractor can use pond, natural water source or identified to fill up for the project, but in that case, before using contractor shall obtain written consent from the owner / community and submit them to the Employer. To avoid disruption/disturbance to other water users, the contractor shall extract water from fixed locations and obtain approval from the Employer before finalizing the locations.

The Contractor shall prevent any interference to water supply or water abstraction sources (including underground percolating water) as a result of execution of the works. Areas where water is regularly or repetitively used for dust suppression purposes shall be laid to fall to specially constructed settlement tanks to permit sedimentation of particulate matter. After sedimentation, the water may be re-used for dust suppression.

All water and liquid waste products arising on the sites shall be collected and disposed of at location onsite or off site and in a manner that shall not cause nuisance or pollution. The Contractor shall not discharge or deposit any matter arising from the execution of the works into any place except with the permission of the Employer and the regulatory authorities concerned.

The Contractor shall protect all water-courses, water ways, ditches, canals, drains, lakes and the like from pollution, silting, flooding or erosion as a result of the execution of the works.

The Contractor shall submit the details of his temporary drainage work system (including all surface channels, sediment traps, washing basins and discharge-pits) to the Employer for approval prior to commencing works on its construction.

38.13. Air Quality

The Contractor shall devise and arrange methods of working to minimize dust, gaseous or other air borne emissions and carry out the works in such a manner as to minimize adverse impacts on air quality.

Bituminous hot mix plants and concrete batching plants shall be located sufficiently away from habitation, agricultural operations or commercial establishments as stipulated in H3. The Contractor shall submit a detailed lay-out plan for all such sites and approval of the Employer shall be necessary prior to their establishment. Specifications of crushers, hot mix plants and batching plants shall comply with the requirements of the relevant current emission control legislations and Consent/NOC for all such plants shall be submitted to the Employer. The Contractor shall not initiate plant/s operation till the required regulatory clearances are obtained and submitted.

The Contractor shall utilize effective water sprays during the crushing, delivery, handling and mixing of materials when dust is generated and dampen stored material during dry weather. All crushers used in construction shall conform to relevant dust emissions control as shall be stipulated as per BSPCB's CFO.

Stockpiles of materials should be sited in sheltered areas or within hoarding, away from sensitive areas. Stockpiles of finer materials shall be covered with clean tarpaulins with application of sprayed water during dry and windy weather. Stockpiles of debris shall be dampened prior to their movement, except where this is contrary to the specifications.

Any vehicle with an open load carrying area used for transport of potentially dust producing materials shall have properly fitting side and tailboards. Materials having potential to produce dust shall not be loaded to a level higher than the side and tail boards and shall be covered with clean tarpaulin in good condition. The tarpaulin should be properly secured and extended to at least 300 mm over the edges of the sideboard and tailboard.

During high wind, no dust generating operations shall be permitted within 200m of residential areas having regard to the prevailing direction of the wind.

Construction vehicles and machinery shall be kept in good working order and engines turned off when not in use. Appropriate measures shall be taken to limit exhaust emissions from construction vehicles, machinery and plant and the Contractor shall include details of such proposed measures in the mitigation and monitoring plan to be submitted to the Employer .

The waste disposal and sewerage system for the camp shall be properly designed, built and operated so that no odour is generated. Compliance with the Factory Act, the Building and other construction workers (regulation of employment and conditions of service) Act, 1996 and all other relevant legislation shall be strictly adhered to.

In residential areas or other sensitive areas, such as nurseries, schools, hospitals, etc., advance warning shall be given to potentially affected persons before commencement of the works.

All the construction equipment vehicles shall have valid Pollution under Control (PUC) certificates and working reverse horn as per Motor Vehicles Rules.

38.14 . Noise

The Contractor shall consider noise as an environmental concern in his planning and during execution of the works.

The Contractor shall use plant and equipment conforming to international/ national standards and directives on noise, vibrations and emissions shall include the details of measures for abating noise at source in the mitigation and the monitoring plan to be submitted to the Employer.

The Contractor shall take all necessary measures to ensure that operation of all mechanical equipment and construction processes on and off the site shall not cause any unnecessary or excessive noise, taking into account all applicable environmental requirements. The Contractor shall use all necessary measures and shall maintain all plant and silencing equipment in good condition so as to minimize the noise emissions during construction works.

Workers in vicinity of strong noise, and workers working with or in crushing, compaction, batching or concrete mixing operations shall wear earplugs.

Construction activities generating noise level more than 75 dB (A) shall be avoided between 10PM and 6AM within 200m of residential areas. When operating within 200m of sensitive areas such as nursery, school or medical facilities, working hours shall be limited to 8 A.M. to 6 P.M. The noise level should not exceed 75 dB (A) at 1m from source while working near sensitive and residential areas.

38.15. FLORA AND FAUNA

Loss or Damage of Vegetation

- (a) All works shall be carried out in such a fashion that the damage or disruption to the flora is kept at a minimum. Trees or shrubs will only be felled or removed that impinge directly on the permanent works or necessary temporary works with prior approval from the Employer.
- (b) The Employer shall approve such felling, only when the Employer secures receives a "clearance" for such felling from the Department of Forest, as applicable.
- (c) Any maintenance works in national parks/sanctuaries shall be carried out only after the Employer secures prior permission from competent authorities.

Loss, Damage or Disruption to Fauna

- (a) All works shall be carried out in such a fashion that the damage or disruption to the fauna is kept at a minimum.
- (b) Construction workers shall be instructed to protect natural resources and fauna, including wild animals and aquatic life,
- (c) hunting and unauthorized fishing shall be strictly prohibited.

38.16. First Aid Facilities

First Aid facilities shall be provided to the labour at each camp site. A separate room for first aid facilities should be built with one bed. Emergency Response System with Action Tree shall be displayed at the facilities. The site first aid room should display awareness posters on safety facilitation hygiene and HIV/AIDS awareness.

First Aid Box will be provided at every maintenance campsite and under the charge of a responsible person who shall always be readily available during working hours. He shall be adequately trained in administering first aid-treatment. The first aid box shall contain the following.

- 6 small sterilized dressings
- 3 medium size sterilized dressings
- 3 large size sterilized dressings
- 3 large sterilized burns dressings
- 1 (30 ml) bottle containing 2 % alcoholic solution of iodine
- 1 (30 ml) bottle containing salvolatile
- 1 snakebite lancet
- 1 (30 gms) bottle of potassium permanganate crystals
- 1 pair scissors
- Ointment for burns

- A bottle of suitable surgical antiseptic solution

In case, the number of labour exceeds 50, the items in the first aid box shall be doubled.

Malarial Risk - The Contractor shall, at his own expense, conform to all anti-malarial instructions given to him by the Employer and District Health Director.

38.17. Transmission of Diseases

The Contractor shall create awareness among his workforce to prevent transmission of diseases between the local inhabitants and the labourers engaged for the works, especially with regard to sexually transmitted diseases.

38.18. Conservation of Religious Structures and Shrines

All necessary and adequate care shall be taken to minimize impact on cultural properties which includes cultural sites and remains, places of worship including temples, mosques, churches and shrines, etc., graveyards, monuments and any other important structures as identified during design and all properties / sites / remains notified under the Ancient Sites and Remains Act). No work shall spill over to these properties, premises and precincts. Access to such properties from the road shall be maintained clear and clean.

38.19. Preservation of Archaeological Assets and Antiquities

The Contractor shall take all necessary measures to protect any archaeological finds or antiquities as required.

During earth excavation, if any property is unearthed and seems to be culturally significant or likely to have archaeological significance, the same shall be intimated to the Employer. Work shall be suspended until further orders from the Employer. The State Archaeological Department shall be intimated of the chance find and the Employers shall carry out a joint inspection with the department. Actions as appropriate shall be intimated to the Contractor along with the probable date for resuming the work.

All fossils, coins, articles of value of antiquity, structures and other remains or things of geological or archaeological interest discovered on the site shall be the property of the Government and shall be dealt with as per provisions of the relevant legislation.

The contractor shall take reasonable precautions to prevent his workmen or any other persons from removing and damaging any such article or thing. He shall, immediately upon discovery thereof and before removal acquaint the Employer of such discovery and carry out the instructions for dealing with the same by the Employer waiting while all work shall be stopped.

The Employer shall seek direction from the Archaeological Survey of India (ASI) before instructing the Contractor to recommence the work in the site.

38.20. Environment Enhancement

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 materials dropped by the said vehicles or their tyres. Similarly, all dust/mud or other extraneous materials 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 Employer, by mechanical sweeping and clearing equipment, and all dust, mud and other debris shall be removed entirely from the road surface. Additionally, if so directed by the Employer, the road surface shall be sprinkled or watered using suitable equipment.

Any structural damage caused to the existing roads by the Contractor's construction equipment shall be made good without any extra cost. On completion of the works, the Contractor shall reinstate all areas with natural vegetation to the satisfaction of the Employer.

The Contractor shall remove all old tyres and internal tubes from within the limits of site and subject to the agreement of adjacent landowners, area of 20 m on either side of the road centre line. The Contractor shall dispose of all materials in a manner approved by the Employer.

Where directed by the Employer, the Contractor shall improve and reinstate the land on which informal roadside service area have been established by removing all debris and contaminated soils, re-grading to natural ground levels and re-establishing the natural vegetation where appropriate. All debris and contaminated materials shall be disposed off from site as approved by the Employer .

39 . Management of Waste Materials

Drainage spoil, unwanted shoulder material, dig out material and other non-recyclable road making material is not to be deposited on the roadside except where previously agreed with the Employer. **The Contractor shall dispose of any unauthorised construction debris and /or Municipal solid waste deposited by either the Contractor or Public within the Road Reserve Corridor (particularly just on the outskirts of the urban areas).**

Disposal Areas

The Contractor shall explore the opportunity of disposing construction debris at nearby municipal disposal sites for construction debris with prior permission of the local authorities. The new disposal areas shall be identified based on following criteria:

- No residential areas are located downwind side of these locations;
- Dumping sites are located at least 1000 m away from sensitive locations such as all notified forest lands, all water bodies, and productive lands
- Available waste lands are given preference.
- In case of bituminous wastes, dumping shall be carried out over a 30 cm thick layer of rammed clay so as to eliminate any chances of leaching. Care should be taken not to dispose these wastes near farmland.
- In case of filling of low-lying areas with wastes, it needs to be ensured that the level matches with the surrounding areas. In this case care should be taken that these low lying areas are not used for rainwater storage

- In case oil and grease are trapped for reuse in a lined pit, care shall be taken to ensure that the pit should be located at the lowest end of the site and away from the residential areas.
- All arrangements for transportation during construction including provision, maintenance, dismantling and clearing debris, where necessary will be planned and implemented as approved and directed by the Employer.

All material removed away from the maintenance corridor shall be disposed of in a manner and location as approved by the Employer. No-objection Certificate (NOC) from land owner / Revenue authorities, as may be applicable, shall be obtained and submitted to Employer.

39.1 . Road Encroachments

Where the Contractor observes that any new illegal structure has been built or placed on the road reserve, or any other unauthorised damage to the road surface i.e. vehicle repair damage, he is to immediately report the infringement to the Employer. If any existing encroachment prevents the Contractor completing work at a particular location, the Contractor shall notify the Employer and await further instruction to proceed.

39.2 . Labour

- The contractor shall, 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 Employer, deliver a written in detail, such form and at such intervals as maybe prescribed, showing the staff and the numbers of the several classes of labour from time to time employed by the contractor on the site.
- 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 law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or Central Government or the local authority.
- The payment of wages should be as per the Minimum Wages Act, Department of Labour, Government of India for both male and female workers.
- Display of the minimum wages board at camps and major construction sites should be done in local languages at the construction and labour camp sites.
- Contractor is required to maintain register for payment of labour wages with entry of every labour working for him. Also, he has to produce it for verification if and when asked by Employer
- **In case there are sub-contractors, the main contractor shall be responsible for ensuring that the payment of wages to labourers is as per the Minimum Wages Act. Sub-contractor has to follow the same procedure as the main contractor.**

39.3 . Workers' Accident Risks

Risk from Operations

The Contractor is required to comply with all the precautions as required for the safety of the workmen as per the International Labour Organization (ILO) convention No. 62 as far

as those are applicable to this contract. The contractor shall supply all necessary safety appliances such as safety goggles, helmets, masks, boots, etc., to the workers and staff. The contractor has to comply with all regulation regarding safe scaffolding, ladders, working platforms, gangway, stairwells, excavations, trenches and safe means of entry and egress.

Risk from Electrical Equipment

Adequate precautions will be taken to prevent danger from electrical equipment. No materials on any of the sites will be so stacked or placed as to cause danger or inconvenience to any person or the public. All necessary fencing and lights will be provided to protect the public. All machines to be used in the construction will conform to the relevant Indian Standards (IS) codes, will be free from patent defect, will be kept in good working order, will be regularly inspected and properly maintained as per IS provisions and to the satisfaction of the Employer .

39.4 . Reinstate the land

The Contractor shall improve and reinstate the land on which informal roadside service area have been established by removing all debris and contaminated soils, re-grading to natural ground levels and re-establishing the natural vegetation as per relevant Specification and as directed by the Employer. All debris and contaminated materials shall be disposed off from site as approved by the Employer

39.5 . Contractor's Checklist

A Contractor Checklist is provided in **Appendix F.1**. The Contractor is required to fill up this checklist giving the specific details of environmental safeguard measures proposed by him, in accordance with EMF requirement. This checklist shall serve as the basis for implementing safeguard measures by the Contractor and monitoring the same by the Employer.

39.6 . Legislative Permits/Approvals

Compliance to environmental approvals as detailed below is required when the Contractor establishes a new HMP/WMM Plant, Batching Plant, Crusher, Camp Site, Labor Camp, exploring new borrow pit areas quarry sites, bore wells and other water sources. Failure to meet the relevant requirement will be reported to the relevant Government Department.

Table H.1 Environmental and Social Legislative Approvals/Authorities

S.N o.	Environmental Parameter	Specification
1	Explosives	Authorization from Explosive's Directorate for storage and handling
2	Extraction of Ground and/or Surface water from new unexplored locations	Approval/authorization under Bihar Water, Land and Trees Act, and/or competent authority

S.N o.	Environmental Parameter	Specification
3	Quarry Operations including stone, aggregates, and sand	Quarry lease from Mines & Geology Department for as per Bihar (Mineral Rights) Tax Act, , if new quarries are expected to be opened
4	Hot Mix Plant (New)	Consent to Establish and Operate (CFE and CFO) for HMP
5	Wet Mix Macadam (New)	Consent to Establish and Operate (CFE and CFO) for WMM plant
6	Batching Plant (New)	Consent to Establish and Operate (CFE and CFO) for Batching plants
7	Crushers (New)	Consent to Establish and Operate (CFE and CFO) for crushers
8	Vehicular Emissions	PUC from PCB and FC (for vehicles > 15 yrs.) from RTO
9	Camp sites/Labour Camp (New)	• Permit from land owner and/or local authorities/revenue department • Authorization from labor commissioner
10	Borrow Areas (New)	Authorization from Mines & Geology Department for as per Bihar (Mineral Rights) Tax Act, and/or local authorities/revenue dept. if new borrow areas are expected to be opened

Note: For new sources, the Contractor shall provide a copy of evidence of compliance of this requirement to the Employer. For existing sources, the Contractor shall procure material from approved sources which are authorised by the concerned department as per the legislative requirements.

CMBD 01.01.2014

SECTION 6
TECHNICAL SPECIFICATION
(Along with Basic drawings)

CMBD 01.01.2014

SECTION 7
BILL OF QUANTITY (CONTRACTORS BID)
(Attached)

BILL OF QUANTITIES

Preamble

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

9. Errors will be corrected by the Employer for any arithmetic errors pursuant to Clause 29 of the Instructions to Bidders.

BILL OF QUANTITIES

Sl. No.	Description of Item (with brief specification and reference to book of specification)	Quantity	Unit	Rate		Amount
				In Figure	In Words	
	As Annexed					

Note :

1. Item for which no rate or price has been entered in 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
2. Unit rates and prices shall be quoted by the bidder in Indian rupee
3. Where there is a discrepancy between the rate in figures and words, the rates in words will govern.
4. Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by quantity, the unit rate quoted shall govern

SECTION 8
SECURITIES AND OTHER FORMS
(to be filled by Bidder/Employer)

BID SECURITY (BANK GUARANTEE UNCONDITIONAL)

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

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

SEALED with the Common Seal of the said Bank this _____ day of _____, 20____.

THE CONDITIONS of 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 to the acceptance of his bid by the Employer during the period of Bid validity :

- (a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or

- (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders; or
- (c) does not accept the correction of the Bid Price pursuant to Clause 27.

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

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

DATE _____

SIGNATURE

WITNESS _____

SEAL

[Signature, name and address]

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

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

PERFORMANCE BANK GUARANTEE

To

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

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

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

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

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, up to a total of _____ [amount of guarantee]* _____ (in words), such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

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

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

This guarantee shall be valid until 28 days from the date of expiry of the Defect Liability Period (Construction Period/Maintenance period).

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

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

UNCONDITIONAL BANK GUARANTEE FOR ADVANCE PAYMENT

To

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

Gentlemen:

In accordance with the provisions of the Conditions of Contract, sub-clause ("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 proper and faithful performance under the said Clause of the Contract in an amount of _____ [amount of Guarantee]* _____ [in words].

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

We further agree that no change or addition to or other modification of the terms of the Contractor or Works to be performed there under or 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 : _____

Name of Bank /Financial Institution _____

Address : _____

Date : _____

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

INDENTURE FOR SECURED ADVANCES

FORM 31

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

This indenture made the _____ day of _____, 20____ BETWEEN _____ (hereinafter called the contractor which expression shall where the context so admits or implies be deemed to include his executors, administrators and assigns) or the one part and the Employer of the other part.

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

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

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

Now THIS INDENTURE WITNESSES that in pursuance of the said agreement and in consideration of the sum of Rupees _____ on or before the execution of these presents paid to the Contractor by the Employer (the receipt where of the Contractor doth hereby acknowledge) and of such further advances (if any) as may be made to him as a for said the Contractor both hereby covenant and agree with the President and declare as follows:

- (1) That the said sum of Rupees _____ so advanced by the Employer to the Contractor as aforesaid and all or any further sum of sums advanced as aforesaid shall be employed by the Contractor in or towards expending the execution of the said works and for no other purpose whatsoever.
- (2) That the materials details in the said Account of Secured Advances which have been offered to and accepted by the Employer as security are absolutely the Contractor's own propriety and free from encumbrances of any kind and the contractor will not make any application for or receive a further advance on the security of materials which are not absolutely his own property and free from encumbrances of any kind and the Contractor indemnified the Employer against all claims to any materials in respect of which an advance has been made to him as aforesaid.
- (3) That the materials detailed in the said account of Secured Advances and all other materials on the security of which any further advance or advances may hereafter

be made as aforesaid (hereafter called the said materials) shall be used by the Contractor solely in the Execution of the said works in accordance with the directions of the Engineer.

- (4) That the Contractor shall make at his own cost all necessary and adequate arrangements for the proper watch, safe custody and protection against all risks of the said materials and that until used in construction as aforesaid the said materials shall remain at the site of the said works in the Contractor's custody and on his own responsibility and shall at all times be open to inspection by the Engineer or any officer authorized by him. In the event of the said materials or any part thereof being stolen, destroyed or damaged or becoming deteriorated in a greater degree than is due to reasonable use and wear thereof the Contractor will forthwith replace the same with other materials of like quality or repair and make good the same required by the Engineer.
- (5) That the said materials shall not be any account be removed from the site of the said works except with the written permission of the Engineer or an officer authorized by him on that behalf.
- (6) That the advances shall be repayable in full when or before the Contractor receives payment from the Employer of the price payable to him for the said works under the terms and provisions of the said agreement. Provided that if any intermediate payments are made to the Contractor on account of work done than on the occasion of each such payment the Employer will be at liberty to made recovery from the Contractor's bill for such payment by deducting there from the value of the said materials that actually used in the construction and in respect of which recovery has not been made previously, the value for this purpose being determined in respect of each description of materials at the rates at which the amounts of the advances made under these presents were calculated.
- (7) That if the Contractor shall at any time make any default in the performance or observance in any respect of any of the terms and provisions of the said agreement or of these presents the total amount of the advance or advances that may still be owing of the Employer shall immediately on the happening of such default be repayable by the Contractor to be the Employer together with interest thereon at twelve per cent per annum from the date or respective dates of such advance or advances to the date of repayment and with all costs, charges, damages and expenses incurred by the Employer in or for the recovery thereof or the enforcement of this security or otherwise by reason of the default of the Contractor and the Contractor hereby covenants and agrees with the Employer to reply and pay the same respectively to him accordingly.
- (8) That the Contractor hereby charges all the said materials with the repayment to the Employer of the said sum of Rupees _____ and any further sum of sums advanced as aforesaid and all costs, charges, damages and expenses payable under these presents PROVIDED ALWAYS and it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the power contained therein if and whenever the covenant for payment and repayment here in before contained shall become enforceable and the money owing shall not be paid in accordance there with the Employer may at by time thereafter adopt all or any of the following courses as he may deem best :
 - (a) Seize and utilize the said materials or any part thereof in the completion of the said works on behalf of the contractor in accordance with the provisions in that behalf contained in the said agreement debiting the contractor with the actual cost of effecting such completion and the amount due to the

contractor with the value of work done as if he has carried it out in accordance with the said agreement and at the rests thereby provided. If the balance is against the contractor, he is to pay same to the Employer on demand.

- (b) Remove and sell by public auction the seized materials or any part thereof and out of the moneys arising from the sale retain all the sums aforesaid repayable or payable to the Employer under these presents and pay over the surplus (if any) to the Contractor.
 - (c) Deduct all or any part of the moneys owing out of the security deposit or any sum due to the Contractor under the said agreement.
- (9) That except in the event of such default on the part of the contractor as aforesaid interest on the said advance shall not be payable.
- (10) That in the event of any conflict between the provisions of these present and the said agreement the provisions of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents the settlement of which has not been here-in-before expressly provided for the same shall be referred to the Employer whose decision shall be final and the provision of the Indian Arbitration Act for the time being in force shall apply to any such reference.

Letter of Acceptance
(Letterhead paper of the Employer)
(For Construction & Maintenance)

_____ (Date)

To

_____ (Name and address of the Contractor)

Dear Sirs,

This is to notify you that your Bid dated _____ for execution of the _____ (name of the contract and identification number, as given in the Instructions to Bidders) for the Contract Price of Rupees _____ (_____) (amount in words and figures), as corrected and modified in accordance with the Instructions to Bidders¹ is hereby accepted by our agency.

You are hereby requested to furnish Performance Security, in the form detailed in Para 31.1 of ITB for an amount equivalent to Rs. _____ within 21 days of the receipt of this letter of acceptance valid up to 28 days from the date of expiry of defects Liability Period i.e. up to _____ and sign the contract, failing which action as stated in Para 31.3 of ITB will be taken.

Yours faithfully,

Authorized Signature
Name and title of Signatory
Name of Agency

¹ Delete "corrected and" or "and modified" if only one of these actions applies. Delete as corrected and modified in accordance with the Instructions to Bidders, if corrections or modifications have not been affected.

Issue of Notice to proceed with the work

(Letterhead of the Employer)

(For Construction & Maintenance)

_____ (Date)

To

_____ (Name and address of the Contractor)

Dear Sirs,

Pursuant to your furnishing the requisite security as stipulated in ITB Clause 31.1 and signing of the Contract for the construction of _____

_____ at a Bid
Price of Rs. _____.

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

Yours faithfully,

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

Agreement Form
(For Construction & Maintenance)

Agreement

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

Whereas the Employer is desirous that the Contractor execute

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

NOW THIS AGREEMENT WITNESSETH as follows :

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to and they shall be deemed to 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 aspects with the provisions of the contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the Execution and completion of the Works & Maintenance and the remedying the defects wherein Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.
4. The following documents shall be deemed to form and be ready and construed as part of this Agreement viz.
 - (i) Letter of Acceptance
 - (ii) Notice to proceed with the works;
 - (iii) Contractor's Bid
 - (iv) Addenda (if any)
 - (v) Condition of Contract : General and Special (for Construction)
 - (vi) Condition of Contract : General and Special (for Maintenance)

- (vii) Contract Data/
- (viii) Additional condition (Technical specification and quality plan for output and performance based road contract etc.)
- (ix) Drawings
- (x) Bill of Quantities and
- (xi) Any other documents listed in the Contract Data as forming part of the Contract.

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

The Common Seal of _____ was hereunto affixed in the presence of :

Signed, Sealed and Delivered by the said _____

in the presence of :

Binding Signature of Employer _____

Binding Signature of Contractor _____

UNDERTAKING

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

(Signed by an Authorised Officer of the Firm)

Title of Officer

Name of Firm

DATE

CMBD 01.01.2014

SECTION IX
Drawing
(For Construction Work)

CMBD 01.01.2014

SECTION X
Documents to be furnished by Bidder

CMBD 01.01.2014

SECTION XI

**TECHNICAL SPECIFICATIONS
FOR MAINTENANCE**

CMBD 01.01.2014

SECTION -XI
Technical Specifications FOR OPRMC

- **Part A – Management Requirements**
- **Part B – General Specifications**
- **Part C – Ordinary Maintenance**
- **Part D –Periodic maintenance**
- **Part E – Emergency Works**
- **Part F – Environmental Requirements**

Section XI, Part A

Management Requirements

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A1. LONGTERM Output & Performance-Based Roads Assets Maintenance Contract Concept

1. Maintaining a road network includes both **ordinary and periodic (maintenance)** tasks. Ordinary maintenance consists of many different tasks frequently necessary to maintain the function of the road (such as pothole repairs, cleaning of drainage, sealing of cracks, cutting of vegetation, etc.). Periodic maintenance consists of predictable and more costly measures of a less frequent nature designed to avoid road degradation (such as resurfacing, bituminous concrete overlays, etc.). Intelligent management, the timeliness of interventions and the adequacy of technical solutions are critical. It is expected that the use of private specialized firms under output- and performance-based contracts will unleash significant efficiency gains, and stimulate innovation in comparison with traditional road administration practices.

2. Minimum road conditions and Service Levels are defined through output and performance measures, and these are used under the CMBD to define and measure the desired performance of the Contractor. In the CMBD the defined performance measures are thus the accepted minimum intervention levels for the quality levels of the roads for which the Contractor is responsible.

3.. The performance criteria should ideally cover all aspects of the contract and take account of the fact that different sub-areas within the contract area might require different Service Levels. Criteria can be defined at three levels (although simpler contracts will not use all of the criteria identified below):

(a) Road User Service and Comfort measures are expressed in terms of:

- Rutting
- Depressions
- Skid resistance
- Visibility of road signs and markings
- Response times to rectify defects that compromise the safety of road users
- Attendance at road accidents
- Drainage off the pavement (standing water is dangerous for road users)
- Vegetation control
- Slope Stabilisation
- The extent of repairs permissible before a more extensive periodic maintenance treatment is required
- Degree of sedimentation in drainage facilities

(b) Road Usability measures, are expressed in terms of:

- Travel delays
- Availability of each lane-km for use by traffic

- Road Roughness

(c) **Management Performance Measures**, which define the information the Employer requires both to govern the asset during the term of the contract, and to facilitate the next tender round. Requirements should include:

- Delivery of regular progress reports to the Road Controlling Authority
- Inventory updates and other data sharing requirements
- Maintenance history (so subsequent tenderers can price the work).
- Environmental and Requirements

To avoid ambiguity, all performance measures are clearly defined and objectively measurable.

4. Together the performance measures define the minimum acceptable Service Level for the particular road. In setting the measures various criteria (both technical and practical) were carefully considered, such as (i) traffic volume and composition, (ii) urban vs. rural roads (iii) sub-grade quality and type, (iv) quality of available construction materials, (v) capacity of available contractors, **However, probably the most important criterion is the question of what Service Level can be afforded and economically justified for the road in question.**

5. Under the terms of the contract, the Contractor will also be responsible for the continuous monitoring and control of road conditions and Service Levels for all roads or road sections included in the contract. This will not only be necessary to fulfill the contract requirements, but it is an activity which will provide him with the information needed to be able (i) to know the degree of his own compliance with Service Level requirements, and (ii) to define and plan, in a timely fashion, all physical interventions required to ensure that service quality indicators never fall below the indicated thresholds. Under the CMBD modality, the Contractor will not receive instructions from the Employer concerning the type and volume of road maintenance works to be carried out. Instead, all initiative rests with the Contractor who must do whatever is necessary and efficient to achieve the quality levels required. This concept is expected to lead not only to significant efficiency gains, as mentioned earlier, but also to technological innovation.

6. Some emergency works should always be foreseen. Those are meant to remedy unexpected damage which occurs as a result of extraordinary natural phenomena, due to the reasons beyond control of contractor in maintenance of roads and which affect the normal use of the road network, or the safety and security of the users. For meeting the Emergency / day works a provisional sum is included in the contract. For emergency works, the contract limits the responsibility of the Contractor. Emergency works are remunerated by the Engineer in charge from the provisional sum for each work order established on the basis of executed quantities at the unit prices covered under work schedule 4 for similar items of work item and rate as per current SOR and new rates for other items shall be arrived as per clause 61 and 63 of General Conditions.

7. Bidders will present their financial offer for following maintenance aspect of the contract:

- the **Ordinary Maintenance Services** in the form of the amount of the monthly lump-sum payment demanded by the bidder according to the conditions of contract (this will be the monthly amount applicable throughout the duration of the contract);
- the **Periodic Maintenance Works** (if so required in the Bid Data Sheet), in the form of a lump-sum amount, while indicating the quantities of measurable outputs to be executed in order that the road achieves the performance standards specified in the bidding documents. Payments will be made in accordance with the progress in the execution of those measured outputs;

A price adjustment clause applicable to all prices and activities in order to compensate for increases or decreases in cost indices are included.

8. The agreed monthly payment for Ordinary Maintenance works and services will be made to the Contractor if he has complied, during the month for which the payment is to be made, with the agreed Service Levels on the road network under contract. Together with his monthly invoice, the Contractor will report the result of his own evaluation of compliance with the required Service Levels, based on his own monitoring system which is mandatory. His statement will then be verified by the Employer or his representative through inspections. If the Service Levels are not met, payments are reduced, based on a schedule given in the contract. Payments may even be suspended, and the contract cancelled, if the contractor fails during an extended period to achieve certain minimum thresholds values of Service Levels. The contract describes the formulas used to calculate payment reduction and potential contract suspensions.

A2 General

The Contractor shall implement an appropriate maintenance strategy, incorporating regular inspections, programming and work activities to:

- i) Maintain public safety
- ii) Maintain the roadway assets to the required performance Criteria
- iii) Keep the road open to traffic

A3 Definitions

The following definitions shall apply:

- (a) **Bridge**
Any structure, being a bridge or culvert with a span or headwall length greater than 6 metres
- (b) **Culvert**
Any pipe, box (RCC) or slab having a diameter, span or headwall length less than 6 metres.
- (c) **Critical Location**
A location where the road alignment and/or pavement width and/or geometry are identified by additional markings or furniture to guide the travelling public (cars, trucks, motorcycles, bicycles, and pedestrians).

- (d) **Defect**
The visible or measurable evidence of failure or other undesirable condition
- (a) **Emergency Works**
Emergency Works is a set of necessary and sufficient activities to reinstate the Road and reconstruct its structure or right of way strip damaged as a result of natural phenomena with imponderable consequences, such as strong storms, flooding and earthquakes and due to the reasons beyond the control of contractor. The need for execution of Emergency Works is jointly identified by the Employer and the Contractor and for starting of execution of Emergency Works the Employer shall issue a Work Order
- (b) **Hazard**
An event, condition or substance which has the potential to cause harm to the health and safety of persons, including the travelling public.
- (h) **Intervention Criteria**
The condition level at which a defect is recorded and rectified within a given Response Time.
- (i) **Memorandum**
A written instruction from the Employer or his representative confirming approval to do any work outside those activities included in the Lump Sum payment (i.e. Emergency /Day works, etc.) or for issuing notice of defects not maintained to the Response Time in the Lump Sum
- (j) **Road Obstructions**
Any cardboard, paper, garbage, rubbish, wood, glass, metal, rubber, dirt, waste matter, or anything of a like nature, within the traffic lanes or shoulders, that is likely to cause damage to vehicles or otherwise be a hazard or visual detriment to the public
- (k) **Ordinary Maintenance**
The regular program of activities including inspections, repairs, works and associated reports designed to address public safety, limit the deterioration of infrastructure and sustain functional and environmental values.
- (l) **Periodic Maintenance**
Periodic Maintenance Works are specific and clearly defined civil works the Contractor is required to carry out under the conditions of the Contract, as defined in the Specifications. Periodic Maintenance Works quantities were estimated by the Contractor to achieve the performance standards defined by the Service Levels and offered at a Lump-Sum price.
- (m) **Response Time**
The maximum time to repair a defect, based on consideration of the defect type, risk and severity.
- (n) **Road Number**
The identification number of the road as provided by the Employer (e.g. State Highway No 1,).
- (o) **Roadside**
Any non-pavement area within the road reserve, including any median area.

- (p) **Rural Area**
All areas outside of urban areas
- (q) **Safety Sign**
A road sign that provides the driver with advice about the safe use of a road.
- (r) **Standard Job**
Description of work to restore and/or repair a damaged item to a defect-free condition.
The list of Standard Jobs is detailed in Tables C4.1.1 – C4.7.1
- (s) **Structure**
A bridge, culvert or sign gantry or other designated structure. The structure may have been assigned an asset structure number.
- (t) **Unit of Work**
Base unit of measurement of a standard job (e.g. meter, square meter).
- (u) **Urban Area**
Those sections of road that are contained within the defined limits of Towns or Villages, or as otherwise specified.
- (v) **Pavement**
An artificial surface laid over ground to facilitate travel.

A4 Scope of Services

A4.1 Scope of Services to be provided

Notwithstanding the provisions of Clause 7 of the General Conditions, the services to be provided by the Contractor include all activities, physical or others, which the Contractor needs to carry out, in order to comply with the Service Levels and other output and performance criteria indicated under the contract, or with any other requirements of the contract. In particular, they include management tasks and physical works associated with the following road-related assets and items:

- Pavements (paved roads)
- Roadside longitudinal drainage systems
- Road shoulders
- Signage and road safety furniture
- Slopes (cuts and embankments)
- Structures and major culverts
- Traffic management
- Data Collection

The Limits of the Contractor's maintenance work zone for each road within the Contract shall encompass the road reserve from property boundary to property boundary, including footways, parking and rest areas. It also includes the first 10m length of side road junctions, both directions of one way systems separated carriage ways and both intermediate and terminal roundabouts (if any), up to either the end of the splitter island or 50m from the circle centre for each contract road up to either the end of the splitter island or 50m from the circle centre.

The Contractor's maintenance work zone shall exclude the maintenance of side drains located within Panchayat limits and Municipal Corporation limits.

A4.2 Scope of Works to be provided

The objective of the project is to undertake Ordinary Maintenance, Periodic Maintenance Work and Emergency Works on select roads totalling approximately Lane Kilometres in Road division The maintenance work will also include cross drainage works, minor work on bridges and roadside maintenance within the select road limits. The Ordinary Maintenance works will be carried out under performance based road maintenance on a lump sum basis paid monthly. and Periodic Maintenance will be paid on measured quantity to the value of the Lump Sum and Works will be paid on the basis of actual quantities of work completed. There is a requirement for specialized maintenance equipment and the contract obligation is for continuous input over a period of 5 years

The project involves maintenance of the following roads under Road division

- (i)
- (ii)
- (iii)
- (iv)

The lane wise details are given below:

- (i) Single lane : Kms.
- (ii) Intermediate lane : Kms
- (iii) Double Lane : Kms
- (iv) Multi Lane : Kms.

The Contractor agency has to take up the following Components for the project for the periods specified.

- 1. Ordinary Maintenance - 60 Months
- 2. Periodic Maintenance - Months
- 3. Emergency Works - 60 Months

Ordinary Maintenance:

The Contractor has to take up OM for a period 5 years (60 Months) after completion of construction for a length of km as per OM specification specified in section xi of Part C.

Periodic maintenance:

This is the Component where in the pavement resurfacing activities (Laying of Semi Dense Bitumenous Concrete, Construction of Earthen Shoulders, Providing Centre line marking & Edge line marking and Road Studs) are to be taken that are beyond Ordinary Maintenance Activities to meet the service level as per specification specified in section V of Part E. The executing agency has to apply the surface treatment over the entire road at the End of 4th Years (48 Months).

Emergency Works

Provisional sum is included to meet the emergency situation. The works will be taken under this component whenever there is any unforeseen Natural Phenomena occurs and has to be attended during the entire project period as per the specification specified in Section xi of Part E.

A5. Reference Information

As a general reference, the information shown below is provided to the Bidder. The Employer provides this information to the best of his knowledge, but does not guarantee its correctness, and the Contractor may not make any claim based on potential errors or omissions in the information provided.

Details for each road covers the data listed below and as included in detail in Appendix -- of this Contract.

- Technical information of each road, such as inventory, as available
- Bridges and culverts
- Other information as available.

A6. Description of the project area

The project roads are under road division in the District of under the control of the Executive Engineer, ... Road Division and are as shown on the map in Appendix -----

A7. Description of the Roads included in Contract

Contract packages are based on fixed areas within the specified Road division. Consequently, some roads may be under other works programs, from time to time throughout the contract period. The Contractor must be aware of his commitments and all roads under his control and those specifically requiring his attention. It will therefore be necessary for the Employer to provide a list of total roads within the fixed area divided into two groups of road sections; (1) immediate maintenance, and (2) other comprising roads programmed for other works programs.

To enable the Contractor to program his resources, and be able to program and budget for the taking over new roads from other programs and the transferring of road to other works, the expected dates for the start and completion of all works under other programs shall be provided by the Employer .

(i) The road sections included in the initial contract are the following:

The work is located in the Road Division ----- district in the State of Bihar as shown in Appendix A and detailed in the Table below:

ROAD	ROAD SECTION	DISTRICT	Km Stones		Length	Classification of Road
			From	To	[km]	
.....						
			TOTAL			

(ii) The Sections of the roads to be excluded due to works completed by others

S.No.	Name of the road	Reach taken up within the contract	Road Sections for which works are to be taken up by other agencies	Road Sections currently under Defect Liability Period (DLP) by other agencies	DLP
1			-		
2			-		

Note:

1. Data given are indicative only, actual details to be confirmed by the Employer.
2. Sections identified under Defect Liability the Contractor is partial responsible for the Ordinary maintenance as defined in Clause C6.3 of the Technical Specifications.
3. Refer to Clause C6.3 of the Technical Specifications for Contractor's responsibility for the maintenance of the road section prior to and after works Periodical maintenance, are completed.
4. For the Road Sections defined above which are temporarily under full or partial responsibility of other agencies at various times in the Contract period, the Monthly Lump Sum shall be adjusted in accordance with Clause C6.4 of the Technical Specification.

A8 Self-Control Unit of Contractor

In conformity with sub-clause 25.2 of the GC, the Contractor is obliged to establish, within his own organizational structure, a specific Unit staffed with qualified personnel, whose task is to verify continuously the degree of compliance by the Contractor with the required Service Levels. The Self-Control Unit is also responsible for undertaking the quality control testing required for Initial Rectification Works, Periodic Maintenance Works, Minor Improvement Works and Emergency Works.

The Unit is responsible for the generation and presentation of the information needed by the Contractor for the documentation required for the Monthly Statement. In general terms, the Unit will be responsible to maintain at all times a detailed and complete knowledge of the condition of the roads or road sections included in the contract and to provide to the management of the Contractor all the information needed in order to efficiently manage and maintain the roads included in the contract. The Self-Control Unit is also obliged to carry out, in close collaboration with the Engineer in charge, the formal and scheduled inspections of Service Levels which will take place regularly.

The compliance (non-compliance) of the Contractor with service level requirements will be reported by the Self-Control Unit to the Employer in the form of tables as **specified in A13.1**.

A9 Specification of Service Level Criteria

The service level applicable is indicated relevant to activities in the tables C4.1.1 to C4.7.1, C5.2, E4, and F7

A10 Functions of Key Personnel

This Contract has a requirement that a high level of engineering management is employed to oversee the programming, inspection and execution of works. The Contractor shall engage qualified personnel with required experience as specified in the Instructions to Bidders to undertake such tasks. The minimum key positions to be provided within contractor's staff and their functions.

Key Positions	Function
1. Road Manager	One Diploma/Degree Engineer required to manage and control each specific component of the works, like Ordinary Maintenance Services, Periodic Maintenance operations, culvert installation, specialised repairs. etc.

“The Contractor shall designate either the Road Manager as the Environmental Officer (EO) who is familiar with Environmental aspects of Road Projects and will be responsible for the Environmental Management”

A11 Methods of Inspection of Service Levels

A11.1 Formal Inspections of Service Levels

The Employer must inform the Contractor of his intention to carry out a formal inspection at least 48 hours in advance, indicating the exact date, hour and location where the formal inspection is to begin. The Contractor is obliged to be present at the date, hour and location specified by the Employer, providing the physical means needed for the inspection as indicated further below. The following minimum formal inspections should be undertaken by the Contractor in the presence of the Engineer in charge of all of the roads covered by the Contract as part of his responsibility to public safety and to enable him to schedule a monthly works Program.

Code	Inspection Type	Minimum Frequency
R	Routine	Monthly
H	Hazard	Weekly
B	Bridge Culverts	6 monthly or immediately after flood event
N	Night	6 monthly
E	Emergency	Immediately on receiving information on notification.

A11.1.1 Ordinary Inspection

The main purpose of the Ordinary or Routine Inspection is a Conformance Inspection to enable the Employer to verify the information presented in the Contractor's monthly statement and to issue the interim payment certificate. Routine Inspections will normally, but not necessarily, be scheduled to begin within less than five (5) days after the presentation by the Contractor of the Monthly Statement to the Employer and they should normally be completed within a maximum of three (3) days. The Routine Inspections allow the comparison of the information on compliance provided by the Contractor in the standard tables which are part of his Monthly Statement, with actual measurements taken in locations to be determined by the Employer. During the formal inspections, the Employer will prepare a brief Memorandum describing (i) the general circumstances of the site visit, including date, road sections visited, persons present, etc., (ii) any non-compliance which may have been detected, and (iii) the time granted by the Employer to the Contractor to remedy the detected defects. Based on the outcome of the formal inspection, the Employer will immediately correct any possible errors or misrepresentations in the Contractor's Monthly Statement, countersign it and present it for payment, and to the Contractor for information.

Formal inspections will also be scheduled for the follow-up site visits, whose purpose is to verify if the Contractor has remedied the causes of earlier non-compliance, within the time frame granted by the Employer and specified in the Memorandum.

Ordinary (Routine) Inspection (R)

defects to be identified		Inspection Requirements
OM100	Sealed pavement	Routine Inspections are undertaken by the Contractor on a monthly basis, jointly with the Employer or its representative . It involves detailed survey to note: a) all defects that have reached Intervention Criteria b) Programmed work not completed in Response Time Where necessary, inspections shall be carried out on foot. Where there is dispute on any defect, every attempt should be made to find resolution on-site. The information collected shall be submitted in Form OM-01
OM200	Shoulder	
OM300	Drainage	
OM400	Vegetation	
OM500	Roadside furniture	
OM600	Structures	
OM700	Operational servicing	

A11.1.2 Hazard Inspection

The main reason for the Safety Inspection is to ensure that the pavement carriageway remains safe at all times and between Conformance Inspections and does not present a hazard to the travelling public. This inspection should be undertaken weekly by driving through the road and cover all defects that are visibly:

- hazards that may impose a danger or safety to the road user and others; and
- defects that are of an offensive nature.

When determining if a defect is or likely to become a hazard the Contractor must consider, as a minimum:

- severity and nature of the defect;
- extent of the defect;
- general road condition and prevailing or expected weather conditions;
- location of the defect;
- effect on the road user; and
- volume of traffic

Hazard Inspection (H)

Defects to be identified	Inspection Requirements
OM101 Pothole patching OM102 Regulation of wheel ruts and depressions OM105 Pavement cleaning OM201 Unsealed shoulder OM203 Embankment and Batter Repairs OM301 Surface drainage OM302 Underground drainage, culverts and underpasses OM303 Culvert and pit repair OM402 Tree and shrub management OM502 Guard stones	The hazard inspection will be undertaken on a weekly basis by an experienced officer of the Contractor and includes a rapid survey of the whole network to note all defects that are: a) hazards that impose an immediate danger or compromise safety to the road user and others; b) defects that are of an offensive nature; and c) defects as indicated by Inspection Type “H” When determining if a defect is an immediate safety hazard the Contractor must consider: a) severity and nature of the defect; b) extent of the defect; c) general road condition and prevailing or expected weather conditions d) location of the defect e) effect on the road user f) volume of traffic Inspections at pedestrian underpasses shall be visually undertaken on-foot. The information collected shall be submitted in Form OM-02

A11.1.3 Bridge and Culvert Inspections if any

The reason for bridge and major culvert inspections is to ensure that the Contractors are undertaking the required care of bridges and culverts, other than those easily seen during the monthly Conformance Inspection. Generally detailed bridge inspections are not considered necessary as part of the Conformance Inspection as they are slow and time consuming but should be undertaken at least six monthly or after a any major flood. Items requiring inspection are all defect that may affect the structural integrity of the structure including joints, superficial damage, batter protection and stream scour.

Bridge and Major Culvert Inspection (B)

Defects to be identified	Inspection Requirements
OM303 Culvert and pit repair OM600 Structures	Bridge and Culvert Inspections are to be carried out by an experienced officer of the Contractor initially within 3 months of Start Date and then on a regular 6-monthly basis or immediately after flooding. To include detailed visual inspections of all bridges and culvert structures for all structural defects, superficial damage, batter defects and stream scour. The information collected shall be submitted in Form OM-03

A11.1.4 Night Inspection

The reason for Night Inspections is to ensure that while driving at night the road is safe and signs easily visible. It will also provide the Contractor and the Employer with a different view of the road under night time driving conditions that may highlight deficiencies that are not clearly visible during daylight hours. Conducted 6 monthly, then Night Inspection to identify defective/non reflective or missing, signs, delineators, guideposts, hazard markers, pavement markings and any potential hazards to the travelling public at night.

The speed should be kept to a level that allows the condition of the listed assets to be observed clearly and serviceability easily assessed and recorded.

Night Inspection (N)

Defects to be identified	Inspection Requirements
OM501 Sign maintenance OM503 Guideposts, delineators and painted trees	Night Inspections are to be carried out by an experienced officer of the Contractor on a 6-monthly basis by driving all roads in each direction and to cover Standard Jobs as indicated by Inspection Type "N" The speed should be kept to a level that allows the condition of the listed assets to be observed clearly The information collected shall be submitted in Form OM-04

A11.1.5 Emergency Inspection,

Following notice by the Employer.

Emergency Inspection (E)

Defects to be identified	Inspection Requirements
OM105 Pavement cleaning OM302 Culvert and pit cleaning	Emergency Inspections are to be undertaken by the Contractor immediately when notice is given, by the Employer including:

and stormwater drains OM303 Culvert and pit repair OM304 Stream maintenance OM600 Structures OM700 Operational Servicing	a) callouts to road safety/traffic emergencies b) observation of a drainage structure, bridges and surface drains during and after heavy rainfall or floods; c) observation of safety barriers and road surface is safe after a road accident; and d) landslip sites if any. The site is to be immediately made safe, an estimate of equipment and materials required for re-establishing (temporarily) the facility, and the Employer notified. The information collected shall be submitted in Form OM-05

A11.2 Informal Inspections of Service Levels

The Employer may carry out informal inspections of Service Levels as part of his duty. He may do so on his own initiative, at anytime and anywhere on the roads included in the contract. He must use his own means for those inspections. If he detects any road sections where the Service Level criteria are not met, he is obliged to inform the Contractor within 24 hours in writing, in order to enable the Contractor to take remedial action as soon as possible. The results of informal inspections may not be used by the Employer for purposes of correcting the Contractor's monthly statements or applying penalties or liquidated damages, except for cases in which the road has been completely interrupted and the criteria of Road Usability has not been met.

A12 Contractor Supplied Equipment

A12.1 Communications Equipment

In accordance with sub-clause 5.3 of the GC, the Contractor is obliged to provide and maintain permanently operated communications equipment as listed below:

- cellular phones (including 3 for Employer and his representatives)

A13 Specification for the Provision of Road Management Information

The following criteria will be applied to all the deliverables required for the ongoing management of the contract and the road network.

A13.1 Monthly Site Meeting and Monthly Report

Employer and Contractor shall formally meet on a monthly basis to discuss work progress, claims, and general business. Minutes will be taken at these meetings, and any noted actions held accountable at subsequent meetings.

The Regional Monsoon occurs during the period 1st June to 30th September of each year. The formal meetings shall be held on a fortnightly basis during this period. In the event of excessive rain the formal meeting shall be held at shorter interval on the notice of employer.

Prior to the meeting the Contractor will submit a report consisting of the following elements

A13.1.1 Monthly Statement

The Monthly Statement to be submitted in accordance with sub-clause 49.1 of the General Conditions shall have the formats as shown in the following pages.

The compliance (or non-compliance) of the Contractor will be reported by the Self-control Unit to the Employer in the form of tables for which a mandatory standard format is adopted. There is one table for each road or road section. The tables are part of the Contractor's monthly statement, and they may be complemented by comments for which a specific format is not required. The format of the mandatory standard table is as shown on the pages after the Monthly Statement formats.

A13.1.2 Monthly Works Program

The Contractor shall prepare a Monthly Works Program in Form OM 06 for the following month incorporating:

- a) Items identified during Ordinary/Other Inspections
- b) Items identified during Inspections carried out under the Contract Quality Plan
- c) Periodic Maintenance Work Items (Schedules, 2) as approved by the Employer.
Any items not completed from the previous month's program .

Where asset items are not repaired within the Response Time period, the Employer may deduct payment for those items as per Clauses C6 and C7.

A13.1.3 Monthly Progress

The Contractor shall collect and record information regarding the quantity and the approximate cost of completed work under the headings of the Tables in Part C of the Technical Specification. Sample 'Monthly Progress Report (Form OM07)' details the information required. The report is to be submitted by the 15th day of the next month after the Monthly Works Program.

A13.1.4 Previous Monthly Minutes

The Contractor is to include the previous monthly minutes detailing actions that have been carried out since the conduct of the meeting.

STANDARD FORMAT FOR PAVED ROADS MONTHLY STATEMENT

Monthly Statement for Contract No.

Contract Name:

Contract Month No.: ____

Total length of Road in Contract (Km)

Period: _____ (month)

Length of road excluded (km)

Monthly Payment, 1/12 of Ordinary Maintenance Services L/S as agreed rate year wise

Length of road to meet required service level (km) (1)

_____ (Rs) (4)

Service Level Criteria	Compliance criteria	Non-compliance		Payment Reduction
		Length non-compliant (2)	% Payment reduction (3)	(5) = (2)/(1)x(3)x(4)
1. Road User Service and Comfort	Potholes Patching		18 %	
	Surface Depressions & Ruts		6%	
	Crack Sealing		2 %	
	Surface Treatment		1 %	
	Pavement Sweeping		2 %	
	Edge Repairs		10 %	
	Digout Repairs		15 %	
	Repairs of Concrete Pavement		1%	
	Unsealed Shoulder Repairs		8%	
	Unsealed Shoulder Power Grading		3%	
	Embankment and Batter repairs		1 %	
	Surface drains Cleaning		2 %	
	Pipe, Culverts and Pits Cleaning		4%	
	Pipe, Culvert and Pits Repairs		3 %	

	River/Stream Maintenance		2 %	
	Grass Control, Clearing and Grubbing		2 %	
	Tree and Shrub Management/ horticulture management		2 %	
	Sign Maintenance		2 %	
	Guardstone/Guardrail Maintenance		2 %	
	Distance Stones, guidepost delineators etc		2 %	
	Footways		1 %	
	Roadmarking and Cats Eyes		1 %	
	Bridge and Major Culvert Maintenance		3 %	
	Minor Landslip clearing		1 %	
	Emergency Works and Services		4 %	
	Vandalism Repair		1 %	
	Litter control & Road obstructions / removal of dead animal		1 %	
			SUB TOTAL	
			(5)	

PAYMENT DEDUCTION SUMMARY FOR CONTRACT

Payment Summary – Contract No. _____ / _____ for Month of _____ 201_

Road Number (s) _____ Contract month: _____ of _____ (contract period)

Service Level Criteria	Compliance criteria	Payment Reduction		
		No. incidents/ Days (1)	Payment reduction (2)	Subtotal (3) = (1) x (2)
1. Road User Service and Comfort	Defined in previous table		from previous table (5)	
2. Road Usability				
3. Management	Failure to complete and Submit Inspections and reports (Initial/Milestone/Completion/Monthly) Failure to submit Program of performance (contract Plan) Failure to comply to various requirements (quality/ environment/Traffic Management /Emergency) (See Cl. C7(iii))		Rs 2,000/day Rs 1,000/wk Rs 3,000/event	

TOTAL DEDUCTION

Note: the above total deduction amount will be deducted from the Monthly Ordinary Maintenance Lump Sum. The total Monthly calculated deduction shall not exceed monthly ordinary maintenance lump sum for any individual monthly payment in accordance with Clause 51.1 of the Particular Conditions. For the initial rectification period milestone period there shall be no deduction under item 1 (Road User Comfort).

STANDARD REPORTING TABLE FOR COMPLIANCE WITH SERVICE LEVELS

Contract No.:

Date of inspection:

Contractor :

Persons present :

**INSPECTION OF SERVICE LEVELS FOR THE
MONTH OF 20...**

Road	SECTIONS		CRITERIA	
	From	To	ROAD USER COMFORT	
			Complied with	Not complied with
	<i>[specify]</i>	<i>[specify]</i>	<i>[insert cross "X" or leave empty]</i>	<i>[insert cross "X" or leave empty]</i>

Usability of the Road: *complied with or not complied with.*
.....km/h

Traffic Speed: *complied with or not complied with; average speed was*

Prepared by Contractor's Self-Control Unit

Certified by Employer or his agent

..... [Signature]
[Signature]

.....

A13.2 Milestone Reporting Requirements

A13.2.1 Initial Road Condition Report

Within 30 days of the completion of construction the Contractor's Engineer shall submit the 'Initial Road Condition Report' to the Engineer in charge. The Report shall consist of the following components:

- Initial Condition Survey
- a Video graphic Survey
- Roughness Results
- Environmental & Safety survey

The Initial Condition Survey is to establish a **visual baseline** of road condition at the time of commencement of the works. The purpose of this Initial Condition Survey is to confirm and record:

- (a) Those asset features that require Ordinary Maintenance (OM) activities to return the asset to below Intervention Criteria. The Contractor is deemed to have made full allowance for this work in his Lump Sum tender and no additional payment will be made to bring such works back to intervention standard.
- (b) Those sections of road where the defect is of a considerable size, inappropriate for an Ordinary Maintenance repair.

The Contractors Road Manager and the Employer or their Nominated Representative's shall carry out a joint 'Initial Condition Survey' of the roads and bridges, and shall submit it to the Employer. Details of the Initial Condition Survey shall be recorded on Form OM 10 as provided at Appendix C.

The Videographic Survey of all the roads within the Contract is to be completed in accordance with the Terms of Reference for the Videographic Survey as provided in Appendix E. The video survey will be taken during daylight hours from the passenger's seat of slow moving vehicle with the camera aligned towards the centre of the road. Video shall also be taken of all bridges and major culverts to show the aspects of each structure from all angles. The contractor will complete and formally transmit to the Employer 2 copies of the video within 15 days after the notice to commence.

The Roughness data is required to establish the **actual roughness** position of each paved road at the time of commencement of the works. Roughness will be measured using the methodologies as covered in Clause E5. The contractor will complete and formally transmit to the Employer the results of the surveys within 21 days, after start date.

The Environmental and Safety survey is to establish the pre-existing issues so the Contractor will not be penalised for breaches of these requirements committed by others prior to the commencement of work.

The Employer will confirm Initial Condition Survey within 21 days. The Employer's ruling on the condition of any item feature will be final.

A13.2.2 Milestone 1 Report

Within 30 days of completion of construction the Contractors Road Manager shall submit the 'Milestone 1 Road Condition Report' to the Employer. The Report shall consist of a Condition Survey. The Milestone Condition Survey is to confirm that road condition at the time of the Milestone meets the defined Performance Levels. The Employer will confirm Milestone Condition Survey within 30 days. The Employer's ruling on the condition of any item feature will be final.

A13.2.3 Milestone 2

Within 30 days of meeting the Completion of construction 4th year of the Contract, the Contractors Road Manager shall submit the 'Milestone Road Condition Report' to the Employer. The Report shall consist of the Condition Survey and Roughness Results

The Milestone Condition Survey is to confirm that road condition at the time of the Milestone meets the defined Performance Levels. The Employer will confirm Milestone Condition Survey within 30 days. The Employer's ruling on the condition of any item feature will be final.

A13.2.5 Milestone 3 (Handover) Report

Prior to 6 months of the Completion of the Contract, the Road Manager and Employer shall conduct a Contract Completion Condition Survey of the whole site and the Contractor shall prepare a *Handover Report*. The purpose of the Handover Report is to provide a smooth transition to the next contract and ensure that the next contractor is aware of any outstanding issues. The Report will:

- (a) Summarize any unresolved issues;
- (b) Include the most recent complete set of data on the roads covered by the contract, and
- (c) Provide the following details;
 - (i) A schedule of outstanding defects and liabilities,
 - (ii) Any unresolved issues, especially those that may impact on the next Contractor,
 - (iii) Details of any sensitive issues,
 - (iv) Any ongoing special monitoring/maintenance needs.

Where Standard Job activities are identified outside the specified Intervention Criteria, the Employer may:

- (i) Direct the Contractor to bring the deficient items to within the specified intervention standard within a designated, or
- (ii) Arrange for the rectification of those features by others and in this event a deduction will be made to the Contract Sum payments due for the full cost of such works.

Contractor is encouraged to update on pre-existing issues identified in the Initial Environmental Survey through the use of the Contractor's Environmental Checklist as per Appendix-F.1

The Employer will provide a written record of the Contract Completion Condition Survey to the Contractor within 14 days of the completion of the survey. The Employer's ruling on the condition of any item will be final.

A13.3 Updating of Road Administration Databases

The Employer requires data about the assets being maintained under this contract for future reference. The Contractor shall supply all information necessary and maintain this data in a condition of accuracy, currency and completeness appropriate for future use which the data is intended. The following data is to be collected and updated:

- Road and bridge inventory and treatment history
- Road condition and section rating
- Road roughness
- Traffic and classification details
- Schedule of unit rate analysis for standard maintenance works

The contractor shall be responsible to undertake detailed road condition survey to enable the Employer to review the annual Periodic Maintenance requirements and develop to prepare suitable new procurement documents for award of the next contract. Therefore, it will be necessary to program this survey as a requirement under this contract and have information remitted to the Employer as detailed in Clause A13.2.

The Contractor shall provide hard and/or electronic copies of the information to the Employer as reasonably requested.

The Contractor shall make available all the records maintained by the Contractor in relation to The Works for inspection by the Employer at any time.

The delivery times and updating frequencies shall be within 15 days after the completion of each Ordinary Maintenance, & Periodic Maintenance or at least quarterly intervals from start date.

Information provided to Employer on this Contract by the Contractor will be used for the purposes of monitoring and reporting road asset condition. The information remains the property of Employer and may be used to provide information to tenders on subsequent contracts.

A14 Program of Performance (Contract Plan)

In accordance with clause 17.2 of the General Conditions (GC), the Contractor shall submit a Program of Performance within twenty-eight (28) days after the signing the contract agreement. The program shall include, but not be limited, to the following items:

A14.3 Emergency Procedures and Contingency Plan

The Program of Performance shall include an Emergency Procedures and Contingency Plan which shall establish the roles, practices and procedures during specific types of emergency events identified in the plans and contingency plans associated with the closure of roads. The

Emergency Procedures and Contingency Plan must be developed by the Contractor and agreed with the Employer and any other stakeholders the Employer may identify.

The purpose of the Emergency Procedures and Contingency Plan is to ensure the safety of the contractor's personnel and road users in the case of emergency and/or road closure. It should include:

- an effective communication and event recording system
- the name, contact number and specific duties of the contractor's personnel nominated to respond to an emergency event
- the contact number of other parties who need to be notified in cases of emergency events, e.g. police
- detailed response procedures for all emergency events
- possible detour routes in the event of road closure

The Delivery Time for the initial Emergency Procedures and Contingency Plan shall be not later than **21** days after the Start Date.

The contact for Emergency Calls will be the RCD Executive Engineer and Contractor's Maintenance Engineer.

Section XI, Part B General Specifications

Part B General Specifications

-
1. General
 2. Reference to MoRTH Specification
 3. Special Clauses to Specifications
 4. Amendments to Specifications
 5. Amendment to Material Specifications
 6. Testing of Material & Works

B.1 GENERAL

Notwithstanding the provisions of Clause 24 and 30 of the General Conditions, the works and the materials used by the Contractor shall comply with or exceed the requirements relevant sections of the Ministry of Road Transport and Highways (MoRTH) Specifications for Road and Bridge Works (4th Revision 2001, published by IRC) and these General Technical Specifications shall form part of the Contract. Amendments to these MoRTH specifications applicable to this Contract are detailed in this Section.

B.2 REFERENCE TO MORTH SPECIFICATION

All relevant clauses of MORTH, except to the extent modified in this document shall apply to this contract.

B3 Special Clauses to Specifications

Additional clauses to the MORTH Specifications for Road and Bridge Works (4th Revision 2001, published by IRC), Section 3000 for Ordinary Maintenance Activities..

(i) Potholes – General

All potholes are to be prepared as specified in Clause 3004 amended as follows:

The area to be patched/repared shall be located by the Contractor. They shall be cut/trimmed with a jack hammer. The edges shall be cut vertically up to the level where the lower layer is suitable without any loose material. The areas shall be thoroughly cleaned with compressed air to remove all dust and lose particles. The excavations shall then be filled with material as mentioned hereunder in layers not exceeding 75mm, painting the sides and bottom of any existing bituminous layer with a thin layer of hot straight run bitumen or emulsion. Each layer shall be compacted with approved mechanical tampers/ vibratory roller and the top layer shall be flush with existing bituminous surface (no “skin patches” are allowable). All loose and/or surplus materials on the surface shall be removed.

(ii) Deep Potholes (Depth extends beyond bituminous layer into the granular base course).

The area to be repaired shall be excavated and prepared as described in item (i) above.

The excavation shall be filled up with base course material Grading No 3 (Table MoRTH 400-7) with screening (as per Clause 404.2) each layer not exceeding 75mm in thickness duly compacted up to the existing crust thickness less 25mm. A thin layer of hot straight run bitumen or bitumen emulsion shall be applied as per MoRTH Clause 502 and 503 over the top of the horizontal surface of repaired pothole and the vertical sides. The top 25mm portion above the repaired pothole shall be filled up by an emulsified bitumen mix compatible with the existing layer or as approved by the Engineer-in-charge and duly compacted.

(iii) Shallow Potholes (Depth limited to the extent of thickness of existing bituminous pavement).

The area to be repaired shall be excavated and prepared as described in item (i) above.

A thin layer of hot straight run bitumen or bitumen emulsion shall be applied as per MoRTH Clause 502 and 503 over the top of the horizontal surface of repaired pothole and the vertical sides. The excavation shall be filled up with an emulsified bitumen mix compatible with the existing layer or as approved by the Employer in layers not exceeding 75mm in thickness duly compacted. The finished surface of repaired pothole shall be up to top of existing bituminous pavement, and left slightly proud (up to 5mm) following compaction.

B4 Amendments to Specifications

Details of Periodic Maintenance Works are below:

PERIODICAL MAINTENANCE

Item No: 3.1& 3.2

Tack Coat

MoRTH Specification No. 503

Applying of tack coat for SDBC and BM as directed by Engineer-in-charge.

SDBC

MoRTH Specification No. 508,

Construction of SDBC, with Bitumen 60/70 grade (or VG 30) of 4.5-5.0% total weight, as directed by Engineer

Thermoplastic road marking

MoRTH Specification No.803

Providing and applying thermoplastic road marking paint on the pavement surface as directed by Engineer-in-charge.

Fixing Road Studs

MoRTH Specification (Suggestive) 801, 804 and 806

Providing and fixing of road studs, sign boards, KM stone, HM stone and Guard, Guide, Boundary pillar on the road as directed by Engineer-in-charge.

Gravel material for roadside repairs

Specification - MoRTH Clause 407

Construct Gravel shoulders as per MoRTH Specification 401 & 407 for road side repairs as directed by the Engineer-in-charge.

Earth Work Excavation of Soils (Item4.9)

MoRTH Specification No. 304

Excavation shall be done as directed by the Engineer-in-charge.

Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Engineer-in-charge or delegated representative.

Sand Filling (Item 4.10)

MoRT&H Specification No. 304

Sand Filling shall be done as directed by the Engineer-in-charge.

Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Engineer-in-charge or delegated representative.

Grouted Revetment (Item 4.16)

MoRT&H Specification No. 2504

Grouted Pitching shall be done as directed by the Employer

Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Employer or delegated representative.

B5 Amendment to Material Specifications

The following changes are noted to the MoRTH Specifications

Use of Bitumen Emulsion

An emulsified bitumen mix compatible with the existing layer shall be used as the top surfacing of deep pothole or for complete shallow potholes.

The bituminous mixture used for such patch repairs shall be in accordance with MoRTH Section 3004.

The Contractor shall use only bitumen emulsion in carrying out any crack sealing or light surface sealing. A hand or electric emulsion pump shall be used to evenly distribute or spray the emulsion.

Drummed bitumen or drummed cutback bitumen will not be an acceptable substitute unless for the production of storable premix or bituminous or approved by the Engineer-in-charge.

B6. Testing of Materials and Work

The Contractor is informed that no known borrowing pits are located in the contract area and that it will be the responsibility of the Contractor to locate his own resources required for this contract. Prior to the extraction of materials for use on the roads included in the contract, the contractor is obliged; (i) to carry out the laboratory tests necessary to determine the quality of the materials, (ii) he has satisfied himself as to the sufficiency of the technical characteristics and the quality of the materials he intends to use for the intended purposes, (iii) the extraction is in conformity with the legislation and (iv) he has informed the Employer of his intention to utilize the material. Under no circumstances may the Contractor make any claims based on the insufficient quality of any of the materials he has used

Further to Clause 20 of the General Conditions, the Contractor is to ensure the following.

a) Responsibility

The Contractor shall be responsible for the carrying out of all tests of materials and work required under the Contract. The Contractor shall establish or have full access to a fully equipped laboratory to carry out all required tests and quality control work. The Contractor shall permit full access to the laboratory for Employer staff to undertake any testing required by them.

b) Testing Costs

The Contractor shall bear the full expense of all establishments, management, and incidental costs in carrying out the required tests for all works. All such costs shall be deemed to be included as part of the Lump Sum component for OM as applicable payment in Schedule 1 under the Contract.

c) Sampling

All sampling whether carried out by the Employer or the Contractor shall be carried out in the presence of an authorized representative of the Contractor and the Employer. At least 24 hours notice is required for both parties to attend any sampling for testing purposes. Where the Contractor's representative fails to attend the results of such sampling will be notified to the Contractor and will be deemed authentic.

d) Testing Frequency

In the event that the frequency of testing is not detailed in the Specifications for any specific item of material or works, it shall be as instructed by the Employer.

e) Test Results

The Contractor shall furnish all test results to the Employer as a monthly summary or at a frequency directed by the Employer. The Employer may withhold payment for those works where test results have not been verified.

Section XI, Part C

Ordinary Maintenance Specifications

Part C Specifications for Ordinary Maintenance Works

1. General
2. Patrol Maintenance Unit
3. Specification of Service Level Criteria
4. Specification for Road User Services and Comfort Measures
 - 4.1 Paved Roads
 - 4.1.1 Service Level
 - 4.1.2 Variation & Gradual Appliance

	4.1.3	Procedure for Inspection
4.2		Signage & Safety
	4.2.1	Service Level
	4.2.2	Variation & Gradual Appliance
	4.2.3	Procedure for Inspection
4.3		Drainage
	4.3.1	Service Level
	4.3.2	Variation & Gradual Appliance
	4.3.3	Procedure for Inspection
4.4		Vegetation
	4.4.1	Service Level
	4.4.2	Variation & Gradual Appliance
	4.4.3	Procedure for Inspection
4.5		Structures
	4.5.1	Service Level
	4.5.2	Variation & Gradual Appliance
	4.5.3	Procedure for Inspection
4.6		Shoulders & Batter Slope Stability
	4.6.1	Service Level
	4.6.2	Variation & Gradual Appliance
	4.6.3	Procedure for Inspection
4.7		Operational Servicing
	4.7.1	Service Level
	4.7.2	Variation & Gradual Appliance
	4.7.3	Procedure for Inspection
5.		Specification for Usability of Road
	5.1	Service Level
	5.2	Variation & Gradual Appliance
	5.3	Procedure for Inspection
6		Adjustment for Periodic Maintenance, Minor Improvement and deleted Sections
7.		Payment Reduction and Liquidated Damages

C1 General

The Contractor shall maintain each asset item to the specified Intervention Criteria and service levels as part of the Contract Lump Sum for the criteria.

- Sealed Pavement
- Signage and Road Safety
- Drainage
- Vegetation
- Structures
- Shoulders Batters & Slope Stabilisation

The Contractor is deemed to have carried out preliminary surveys of the relevant Roads prior to bidding in order to evaluate all Ordinary Maintenance (OM) related obligations and to assess the rate to be quoted in BOQ of OM.

The Ordinary Maintenance (OM) shall be carried out on all Roads covered by the Contract to the specified service quality levels for a period of 5 years, including:

- The provision of management services as required for the duration of the Contract,
- Provision of optional PMU vehicle/s to carry out OM responsibilities,
- Undertaking regular condition surveys, including regular monitoring and reporting of the condition of all Roads under the Contract,
- Undertaking inspections at the frequencies required (as a minimum) and identifying defects and carrying out maintenance works,
- Establishing programs for Ordinary Maintenance based on meeting required intervention standards,
- Scheduling maintenance work to meet the required maintenance standards.
- Providing effective traffic management for all works undertaken to ensure public safety and the safety of the Contractor's workforce,
- Maintaining records of all work undertaken,
- Provide a Quality Plan for the Employer's approval within 8 weeks of the Start Date and implement all quality management requirements.

In respect to area of responsibility for works by others the following shall apply:

(i) Rail crossing repairs

The Contractor shall be responsible for repairs to pavement in the immediate vicinity of rail crossing. Where defective rail lines are the cause of damage to the pavement, the Contractor shall notify the Employer.

(ii) Restoration of road openings

In general, Employer is responsible to reinstate all service utility road openings undertaken by a Service Authority or its contractors. The Employer may direct that temporary reinstatement or final restoration is be carried out by the Contractor as a variation to the Contract or at a fixed cost outside the Contract. The Contractor is to notify the Employer immediately when any new road opening is noted.

Where the road surface fails above a completed restored road opening, the Contractor shall repair the defect as part of his quoted rate.

The cost of implementing the above provisions shall be deemed to be included in the Lump Sum component for OM

C2 Patrol Maintenance Unit (PMU)

The Contractor may provide and run daily, except on Sundays and holidays permitted by the Employer, a minimum of one optional Patrol Maintenance Unit (PMU) comprising personnel and equipment to undertake the carrying out of the Ordinary Maintenance Lump Sum works as specified.

The PMU shall be a new truck (minimum 6 tonne) well fabricated and GPS enabled to meet the requirement, painted and labelled appropriately for safety and public awareness to the Employer's satisfaction. Each PMU shall have as a minimum requirement:

- a) 1 No. Patrol Foreman
- b) 1 No Heavy Vehicle Driver
- c) 5 No. Maintenance Workers
- d) PMU to be equipped with 2 no Mobile Phone
- e) 1 No. Jack Hammer
- f) 1 No. Compressor
- g) 1 No. Vibrating Plate Compactor
- h) 1 No. Chainsaw
- i) 1.0. m³ Cold Storable Bituminous Premix and 0.5 m³ of sand
- j) 2 No. "Half Road Closed" Signs
- k) 2 No. "Road works Ahead Signs"
- l) 12 No. 300 mm plastic 'high visibility' coloured traffic cones
- m) 200 kg drum of Bitumen Emulsion
- n) A hand (or electric) Emulsion Spray Pump
- o) 200 litre drum of Water
- p) 2 No. Rakes
- q) 2 No. Long Handle Shovels
- r) 2 No. Long Handle Heavy Duty Brooms
- s) 2 No. Picks
- t) High Visibility Jackets (Uniform) for all the PMU crew
- u) Foldable aluminium ladder.
- v) Operational Flashing amber lights fitted to the Patrol Truck
- w) Patrol Maintenance Unit (PMU) Vehicle Identification visibly painted on Vehicle (Contractor's Name, Client's Name, Road Names, Unit No., and Emergency Contact Phone No.)

The above resources shall be engaged full time per PMU on the Ordinary Maintenance Lump Sum activities (Standard Jobs) for works under this Contract, for a minimum of 8 daylight hours per day from 8.00 AM to 5.00PM with 1.00 hour lunch break from Monday to Saturday inclusive. Failure by the Contractor to provide the above resources will result in payment deductions to the Contractor for the Ordinary Maintenance component of the works as provided in Clause C7 of this Technical Specification.

The PMU shall also be the "Initial Emergency Response Unit" and shall have the capability of the following:

- Capable to hold a half cubic metre of sand (or other suitable absorptive or granular material depending on the nature of the requirement);
- After hour response a minimum two person crew;

-
- Emergency kit of temporary warning signs, flashing lights, barriers, safety clothing, shovels and brooms.

Also the PMU must carry at all times the Emergency No. of Police, Fire, Ambulance, Medical/Hospital centre along entire route to facilitate help in event of accidents and emergency encountered. A listing of all emergency contact phone numbers shall be circulated by the Contractor to all relevant officers, including the Contractor's staff and the Employer prior to the Start Date.

The operational costs is treated to be included in OM monthly lumpsum

C3 Specification of Service Level Criteria

This section specifies the Service Levels to be complied with in the case of paved roads. There are three overall criteria:

- Road User Service and Comfort Measures
- Road Usability
- Project Measurement Requirements

C4 Specification of Road User Service and Comfort Measures

C4.1 Paved Roads (Table C4.1.1 – OM100)

The following notes requirements are to be read in conjunction with the Specifications as stated in Section XI part C and Table C4.1.1

Further to Table 4.1.1, the following requirements are to be addressed by the Contractor:

- (i). Potholes (OM 101):

No pothole is to be left untreated on any section of the road. Potholes causing a threat to public safety area >0.02 sqm will be repaired within 1 day, others shall be repaired within the Response Time. Potholes will be detected by visual inspection.
- (ii). Surface Depressions (OM 102):

No depression greater than 70mm depth when measured under a 1.2 metre straight edge are permitted. Repairs are to be responded within 2 days of detection. Rutting and other surface roughness greater than 30mm under a 1.2 metre straight edge in isolated areas $>10m^2$ is to be completed in the Response Time.
- (iii). Crack Sealing (OM 103)

Cracking greater than 5mm wide is to be sealed within the Response Time. Cracking is detected by visual inspection. It is of particular importance that crack sealing is completed prior to the end of the work season each year or the date predicted for the onset of the wet season and before the commencement of the Periodic Maintenance program. Where the cracking is of "crocodile" nature, treatment may be by Surface Treatment as outlined in item (iv) below.
- (iv). Surface Treatment (OM 104)

A light surface seal ($> 5m^2$ at any one location) will be placed over solid pavement areas which are moderately distressed with fine surface cracking. The Contractor shall thoroughly sweep and clean the area to be treated, and seal any cracks $> 5mm$

or 'crocodile' cracks with bitumen emulsion. Any pavement weaknesses should be brought to the attention of the Project Manager before work commences.

Seal the surface as per SOR Type 'A' clause 5.12. The surface shall be protected from traffic until the seal has properly set. All loose material shall be swept and removed from the site prior to full trafficking.

The bitumen emulsion shall be Cationic Rapid Setting, conforming to the requirements of IS: 8887.

(v) Pavement Sweeping (OM 105)

Where a spillage of hazardous materials has occurred after an accident i.e. oil, glass, debris etc or in other emergency event, the pavement shall be cleaned of the offending materials immediately. The Contractor shall bring this type of incident to the notice of the District Administrator and the regional office of the state pollution control board about the incident. This shall also apply to unauthorised deposition of household or industrial waste onto road pavement or shoulders.

Build-up of silt, dirt or gravel, particularly at intersections and against central medians that may cause braking cars to skid shall be removed.

(vi) Edge Repair (OM 106)

The edge of the road surface should be free of excessive fretting or beaks of the surfaced width and erosion that will encourage water ingress into the pavement and result in unsafe ride quality for vehicles forced to use the shoulder of the carriageway. All breaks >100mm shall be repaired in the Response Time.

(vii) Dig out Repair (OM 107)

Identify the cause of failure and appropriate treatment. Ensure the cause is removed either prior to or as part of the repair. If necessary, stabilize the sub-grade with lime, cement or geo-textile and if seeping water is present, install subsoil drains. Repair shall be undertaken in accordance with Section V of this specification. Dig outs < 5m² will be considered for repair.

(viii) Repair of Concrete Pavement (OM 108)

The repairs to broken concrete or bituminous joint material, to preserve underlying pavement material and restore the riding surface to a smooth condition. Identify the extent of damage and appropriate treatment. Work shall include preparing and cleaning the existing concrete and removing any loose, spalling material. Exposed reinforcing shall be repaired/replaced and new M35 concrete placed, vibrated, finished and cured. Repair >0.25 sqm will be considered for repair.

C4.1.1 Service Level

The service level criteria for road user service and comfort on paved roads are defined as follows

Table C4.1.1 Standard Jobs, Intervention Criteria and Response Times for Paved Roads

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection**	Repair	
OM101 POTHOLE PATCHING Treatment of isolated failed pavement areas in traffic lanes using appropriate materials to repair the defect and restore the riding surface to a smooth condition.	Potholes in traffic lane of a sealed pavement > 0.02 sqm	H	1day	1 cum.
	Repair all potholes	R	1weeks	
OM102 SURFACE DEPRESSION and RUT PATCHING Application of a levelling course of bituminous materials to depressed or rutted areas of pavement	Deformations greater than 70mm under a 1.2 m straight edge	H	2 days	1 cum
	Deformations greater than 30mm under a 1.2 m straight edge	R	4 weeks	
OM103 CRACK SEALING Filling of cracks and joints, excluding “crocodile” cracking, using liquid bituminous sealants in accordance with monthly works program.	All cracks > 5 mm. width	R	4 weeks	1 m ²
OM104 SURFACE TREATMENT Application of bituminous materials and cover aggregate areas of pavement with: (a) loss of aggregate (surface ravelled); (b) bleeding and flushing; or (c) laminated asphalt surface.	Treat when: (a) stripping/ravelled > 30% loss of aggregate for an area >5 m ² (b) bleeding/flushing for an area >5 m ² (c) all “crocodile” cracking (d) delaminated surface >0.25m ²	R	4 weeks	1 m ²
OM105 PAVEMENT SWEEPING Cleaning/sweeping of pavement including at intersections, kerbs and channels to remove debris which is a danger to traffic or pedestrians or which prevents the free drainage of the pavement.	When fallen debris, slippery substances, accumulation of granular material, ponding of water or any other obstacle becomes a danger to traffic or pedestrians	H	1 day	1 m ²
	When accumulation of aggregate, dirt or debris prevents the free drainage of the pavement	R	4 weeks	

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection**	Repair	
OM106 EDGE REPAIR Repair of broken edges of seal, to line and level to maintain nominal sealed width.	When break becomes a hazard	H	1 day	1 cum
	When edge break exceeds 100 mm. laterally over at least a 1 m length from the nominal seal line.	R	4 weeks	
OM107 DIGOUT REPAIR Treatment of isolated failed pavement areas >0.25m ² by replacement with new material or improvement of existing material, including reinstatement of road surface.	When break becomes a hazard	H	1 day	1 m ²
	All failed areas	R	1 weeks	
OM108 REPAIR OF CONCRETE PAVEMENT Repair isolated areas of damaged concrete pavement < 0.25m ²	All damaged areas	R	4 weeks	1 m ³

C4.1.2 Variations and gradual compliance with Service Levels for Paved Roads

After the completion of construction work, the contractor is to ensure all service level criteria.

C4.1.3 Procedures for Inspection of Paved Roads

For the formal inspections of compliance with Service Levels, the Contractor's Self-control Unit will work in close collaboration with, and under supervision of the Employer. The physical means needed for the inspections will be provided by the Contractor; they are the same which are normally used by the Self-control Unit for the continuous self-evaluation of the Contractor's compliance.

C4.2 Signage and Road Safety (Table C4.2.1 – OM500)

The following notes requirements are to be read in conjunction with the Specifications as stated in Section V part C and Table C4.2.1

Further to Table C4.2.1, the following requirements are to be addressed by the Contractor:

(i) Signs

Signs consist of all ground (post-mounted) signs located along the roadway and include the following types of signs:

- Regulatory Signs
- Warning Signs
- Direction Signs
- Information and Traffic Instruction Signs
- Route Markers and Kilometre Markers
- Village Name Signs
- Hazard Markers
- Service and Tourist Signs, except privately funded signs identified by the Employer.

The Contractor shall ensure that the signs are maintained in good condition at all times and shall wash and clean sign faces, straighten posts, level sign boards, remove posters, tighten bolts and undertake minor repairs.

Quality levels and tolerance criteria:

(a) Meet reflectivity standards:

All signs must meet the requirements stated in MoRTH Specifications Sub-clause 801.3.2. All signs must be clearly visible and reflective to passing motorist under both daytime and night time conditions. The daytime inspection should be performed initially, followed by the night time survey.

(b) 100 percent clear of obstruction:

All signs, when viewed from the closest traffic lane, must be completely free of brush, trees, vegetation, and other obstructions that prevent passing motorist from adequately viewing the sign. Sign obstructions can be detected by visual inspection.

(c) Present and surface free of damage:

Signs have to be present, upright in a vertical position, and at least 95 percent of the total surface area of signs must be free of damage, i.e., holes, large dents, and missing reflective material or covered in advertising. The presence and condition of the signs can be checked by visual inspection.

(d) No encroachments/trespasses, illegal signs or structures:

No tolerance. Structures or signs that were not erected or authorized by the Employer should not exist within the right-of-way. Any transgressions can be detected by visual inspection and have to be reported in writing to the Employer within 24 hours after being detected, and all assistance provided to the Contractor in the eviction process.

(ii) Pavement marking

Pavement markings include lines and markings used to delineate traffic lanes and pavement edges. Pavement markings may consist of solid lines or broken lines that are yellow or white and arrows.

The Contractor will be responsible to reinstate by either hand or machinery, all pavement markings damaged or destroyed by his work with hot applied thermoplastic compound as approved by the Employer. The Contractor shall keep clean pavement markings. The re-application of thermoplastic markings will be done as a Dayworks approximately every 2 years. However, any damage to new re-applications shall be repaired by the Contractor under OM responsibilities.

(iii) Guard Stones/Boundary Stones/Guardrail

The Contractor shall ensure that established guard stones, boundary stones and guardrail are kept in good repair and shall regularly check posts to ensure that all are in place and functional. Painting and replacement of defective posts shall be paid as part of the OM Lump Sum.

Where more than 10 posts are missing at any single location, the Contractor should immediately notify the Employer. Supply only of replacement posts above 10 No. at a single location will be done in Dayworks.

All guard stones and guardrails shall be painted/repainted on a cycle of every 12 months as a part of OM responsibilities, including the painting/repainting of any new guard stones, boundary stones and guardrails which are installed. The works shall be scheduled evenly over 12 months and shall be shown in the Program including timeframes for completing various road sections. At least two painting cycles shall be carried out during the period of the Contract. Works shall be carried out in accordance with MORTH 806. 12 months where white washing and colour banding is involved and 30 months where synthetic enamel painting is involved.

(iv) Distance Markers (Kilometer posts)

Kilometre marker stones are generally located at 1 km intervals and show the highway number and distance to the next significant town or the start of that section of highway on non-radial routes. Five kilometre marker stones are located at 5 km intervals and show the highway number, the distance to the next town and also the distance the next significant town on the route.

All distance stones shall be repainted and kept in good repair by regular maintenance. Any damaged or missing stones shall be notified to the Employer promptly and supply only approved as a Provisional Item. Distance markers shall

only be re-positioned or re-installed to an exact location as directed by the Employer. 12 months where white washing and colour banding is involved and 30 months where synthetic enamel painting is involved.

All distance markers shall be painted/repainted as a part of OM responsibilities, including the painting/repainting of any new distance markers which are installed. The works shall be scheduled evenly and shall be shown in the Program including timeframes for completing various road sections. At least two painting cycles shall be carried out during the period of the Contract. Works shall be carried out in accordance with MoRTH 804.

(v) Guideposts, delineators and hazard markers (painted trees)

The Contractor shall ensure that all guideposts and delineators are clean and replaced if damaged or non-reflective.

Guideposts and hazard markers that have been painted for delineation shall be repainted as a part of OM responsibilities, including the repainting of any new guideposts, delineators and hazard markers which are installed. The works shall be scheduled evenly and shall be shown in the Program including timeframes for completing various road sections. At least two painting cycles shall be carried out during the period of the Contract. Works shall be carried out in accordance with MoRTH 805. 12 months where white washing and colour banding is involved and 30 months where synthetic enamel painting is involved.

(vi) Cats Eyes

On sections of road where cats eyes have been installed, the Contractor shall maintain and replace any missing cats eyes. All new cats eyes installed shall be of road stud 100x100mm dia cast moulded from ASA.

Only the installation of cats eyes on a section of road which previously did not have cats eyes shall be under Provisional Items. Any such new installations shall be subsequently maintained by the Contractor under OM responsibilities.

C4.2.1 Service Levels Measures for Signage and Road Safety

The Contractor is responsible for ensuring that all signage, as well as guardrails and other road safety devices fully comply with Acceptable Standard within initial rectification period.

The Service Level requirements for signage and road safety devices are as shown in the following Table:

Table C4.2.1 Standard Jobs, Intervention Criteria and Response Times for Signage and Road Safety

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection **	Repair	
OM501 SIGN MAINTENANCE Sign repair, re-erection, support replacement and/or maintenance cleaning	Straighten sign posts when more than 5 degrees off vertical Clean sign and delineator faces when reflectivity is reduced due to accumulation of dirt. Repair damage	R, N	2 weeks	1 No.
OM502 GUARDSTONES/BOUNDARY STONES/GUARDRAILS Repair, and reinstall damaged/missing guardstones and guardrails barriers	Fallen or damaged at a critical location making them substantially ineffective	R	2 weeks	1 No.
	Other locations	R	4 weeks	
Painting Guardstones, Boundary stones and guardrail	As per agreed Program, with all guardstones boundary stones and guardrails painted at least once every 12 months. Where whitewashing and colour banding is done and 30 months where synthetic enamel painting is done.	R	12/30 months	1 No.
OM503 DISTANCE MARKERS, GUIDEPOSTS, DELINEATORS, and HAZARD MARKERS Cleaning and/or replacement of damaged and missing guideposts, distance marker posts, hazard markers and delineators. Straightening of crooked or bent guideposts Painting, of distance markers, guideposts and hazard markers, including lettering	Guideposts/Delineators missing or damaged at a critical location	R, N	4 weeks	1 No.
	(a) functional requirements not met; (b) not visible from 100m at night on low beam	R,N	4 weeks	
	As per agreed Program and with all distance markers, guideposts and hazard markers painted at least once every 12 months Where whitewashing and colour banding is done and 30 months where synthetic enamel painting is done.	R	12/30 months	1 No.
OM504 FOOTWAYS repair or regulation of defective paved areas <0.25 m ² .	Defective pedestrian areas on islands and footpaths where step-up > 50mm.	R	2 weeks	1 m ²

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection **	Repair	
OM505 ROADMARKING & CATS EYES Repair of defective or faded thermoplastic markings and cleaning of all markings (Re-applications will be under Provisional Item). Maintenance of all/ damaged cats eyes	Thermoplastic marking faded or damaged and functional requirements not met.	R	8 weeks	1 m ²
	Cats eyes missing, damaged or functional requirements not met.	R	4 weeks	1 No.

C4.2.2 Variations and gradual compliance with Service Levels for Signage and Road Safety

After the completion of construction work, the contractor is to ensure all service level criteria.

C4.2.3 Procedures for Inspection

The visual inspection will be undertaken as part of the Formal and Informal inspections. The criteria for Signage and Road Safety will be checked at sections selected by the Employer based on visual appearance. The Employer shall be the sole judge of compliance. If a specified criterion is not met, the one-kilometer section in which the deficit occurs will be judged non-compliant.

C4.3 Drainage (Table C4.3.1 - OM300)

The following notes requirements are to be read in conjunction with the Specifications as stated in Section V part C and Table C4.3.1

Further to Table C4.3.1, the following requirements are to be addressed by the Contractor:

The highest priority should be given to adequate drainage of the pavement and shoulders. Where ponding of water is observed in the vicinity of the pavement or shoulders, the PMU shall immediately shape a waterway to remove the water to the adjacent side drain. Temporary drains across existing shoulders shall be shallow and tapered as to not affect the safety of traffic or pedestrians, and shall be reinstated by shaping and/or grading when conditions are favourable to allow normal 'sheet' flow. The following visual inspections should be made:

(i) Cross drainage pipes, culverts and pits

Quality levels and tolerance criteria:

(a) Inside surface area of each cross pipe, culvert or pit must not be deteriorated:

No more than 10 percent of the inside surface area of each cross pipe can be deteriorated. Deterioration includes spalled or crushed concrete, crushed metal, or any other structural deterioration along the length of the pipe/culvert.

Where the defect is a collapsed or an un-maintainable unit or structure, the defect shall be referred to the Employer for repair.

The condition of the inside surface of the pipes can be detected by visual inspection.

(b) Waterway free of obstruction:

Each pipe/culvert must have at least 80% of its waterway open.

(c) No erosion at either end of the pipe/culvert that affect the structural integrity:

Erosion at either end should be less than 200mm and should not affect the structural integrity of the pipe/culvert or head wall. Erosion can be detected by visual inspection.

(d) No dip in road over pipe indicating structural problems:

No dips in the roadway over pipe deeper than 30 mm (measured longitudinally) are allowed. Dips are indicative of the settlement or erosion of the backfill material located around the cross pipe and may present a safety and pavement Performance problem. Dips in the roadway are to be visually identified from the shoulder or side drain and measured with a scale in mm.

(e) The headwalls and end protection at each end of the pipe/culvert

No tolerance. The headwalls and end protection located at each end of the pipe/culvert should be intact and secured. The condition of the headwalls and end protection can be evaluated by visual inspection.

Concrete/Masonry repairs $< 1\text{m}^3$ at any one location shall be carried out by the Contractor to repair any defects and concrete damage.

White washing of exposed concrete/masonry areas of cross drainage structures shall be carried out in two coats to give an even and smooth surface for protection, including the scraping and cleaning of old surface

(ii) Side drains, culvert inlet/outlet drains, kerb and channelling

Side drains collect the runoff of water from the pavement and shoulders parallel to the road and distribute to more major waterways. Culvert inlet/outlet drains channel water into and away from the road.

Quality levels and tolerance criteria:

- (a) All side drains and culvert inlet/outlet drains must be graded such that positive drainage of surface flow exists:

Unpaved side drains or culvert inlet/outlet drains must not have depressions or high spots that either hold or trap water a distance of > 3 metres within the drain for several days. Depressions and high spots can be detected by visual inspection.

- (b) No severe erosion along the side drains and culvert inlet/outlet drains:

No areas where the grass, sod, or gravels have been washed away or where soil erosion deeper than 200mm exists are allowed. Erosion can be detected by visual inspection.

- (c) Outlets of side drains and culvert inlet and outlet drains must provide positive drainage:

Drains shall empty freely into larger channels as designed and should not exhibit erosion deeper than 200mm. The condition of the outlet can be detected by visual inspection.

- (d) No obstruction to flow of water:

The side drains, culvert inlet/outlet drains and kerb and channels shall be free from obstructions such as severe sedimentation, vegetation growth or debris build up, that prevent the drains from adequately carrying water.

At the commencement of the Contract, where reinstatement/construction of side drains and culvert inlet/outlet drains are required to repair complete blockages, work will be identified during the initial survey and will be carried out under Initial Rectification Works during Milestone 1. All subsequent drain maintenance works shall be carried out under OM

C4.3.1 Service Levels

In general terms, the Contractor must ensure that all drainage elements and structures are sound and without any obstructions which may reduce their normal cross-section and impede the free flow of water.

The Service Level requirements for drainage structures or devices are as shown in the following Table C4.3.1

Table C4.3.1 Standard Jobs, Intervention Criteria and Response Times for Drainage

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection **	Repair	
OM301 SURFACE DRAIN CLEANING Cleaning of channels, including kerb and channel, and reshaping earthen drains, including culvert inlet and outlet drains, to maintain flow of water and protect road and roadside from scour.	When there is, or is likely to be restriction or ponding of water or scouring	R	1 week	1 lineal m
OM302 CULVERT and PIT CLEANING Cleaning of Barrel/Vent, culverts, pits and stormwater drains to maintain flow of water.	When debris blocks > 20% of culvert area and inhibits free flow.	R	1 week	1 No. (pit/culvert)
OM303 CULVERT and PIT REPAIR Repair or replacement of damaged pipes, culverts, pits, surrounds, grates, lids or lintels and headwalls. Whitewashing of exposed concrete/masonry to be carried out as required.	Damaged or missing drainage pit lids, surrounds, grates, in pedestrian areas or traffic lanes	H	2 days	1 No. (pit/culvert)
	When deterioration of pipe, culvert or pit >10% or structure is in precarious condition	R	2 weeks	
OM304 RIVER and STREAM MAINTENANCE Maintenance and cleaning of debris from streams within 10 m of structure and repair minor scours.	Any log debris >150 mm in diameter. Any accumulation of debris >400 mm in dimension.	R	1 week	1 No. of Sites

C4.3.2 Variations and Gradual Compliance with Service Levels

After the completion of construction work, the contractor is to ensure all service level criteria.

C4.3.3 Procedures for Inspection

The cleanliness and condition of drainage structures (including open drains, causeways and all other types of drainage devices) is part of the criteria for the “Durability of the Road”. It is verified on a regular basis, in particular before and during the rainy seasons. The drainage structures to be verified are determined by the Employer. Inspection is done visually.

The basic principle used to determine the cleanliness of drainage structures or devices is “the percentage of the theoretical cross-section of the structure or device which is unobstructed”. This percentage is specified in Table C4.3.1 above. For a one km road section, the cleanliness of drainage ditches must be verified at least on two subsections of 50 meters each.

For any one km section of the road, compliance with this criterion requires that (i) all drainage structures are clean in the sense defined above; (ii) all structures and devices are structurally sound, based on the judgment of the Employer.

C4.4 Vegetation (Table C4.4.1 - OM400)

The following notes requirements are to be read in conjunction with the Specifications as stated in Section V part C and Table C4.4.1

Further to Table C4.4.1, the following requirements are to be addressed by the Contractor:

(i) Natural grass

Vegetation grown for the purpose of protecting shoulders, slopes, and embankments from erosion, and for aesthetic purposes. Natural Grass is considered that generally located along the roadway edges.

Quality levels and tolerance criteria:

Sight distance is clear in intersections, passing zones, and curves: Grass height should not prevent adequate sight distance (stopping or passing) at intersections, passing zones, and curves and must not obstruct the drainage.

(ii) Trees and shrubs

Consists of trees, limbs, shrubs and creepers located within the right-of-way. Trees and shrubs located in landscaped areas should be evaluated as landscaping.

Quality levels and tolerance criteria:

(a) Fallen trees

No tolerance. Any fallen tree on the road formation shall be removed immediately.

(b) Sight distance or sign obstructions:

No tolerance. Brush, as defined above, should not affect sight distance (stopping or passing), at intersections, passing zones, and curves. In addition, brush should not encroach onto any signs to the extent that visibility or readability of the sign is affected. Sight distance or sign obstructions can be detected by visual inspection.

(c) Vertical clearance:

No tolerance. A vertical clearance of at least 5.0 m over roadway should be maintained at all times. All tree limbs, shrubs, and creepers should be trimmed back to maintain this clearance. The measurement of the vertical clearance should be from the highest point of elevation on the traffic lanes or shoulders.

- (d) No trees presenting a leaning hazard:

No tolerance. Trees or other vegetation that are leaning and present a safety hazard should not be located within the right-of-way. In addition, dead or dying vegetation that is either located within a clear zone or could fall on vehicles or pedestrians must not be present. Leaning vegetation can be detected by visual inspection.

- (iii) Maintenance of traffic islands and divider having plantation.
The Contractor shall mow existing grass in these areas, as well as prune existing plants and bushes.

Quality levels and tolerance criteria:

- (a) Grass can not be higher than 200mm in traffic islands:

No more than 20 percent of the total area can exhibit grass higher than 150mm.

- (b) Traffic islands area must be free from weeds or other noxious vegetation:

No more than 20 percent of the total area can exhibit weeds or other noxious vegetation before intervention is required. Presence of weeds or other noxious vegetation can be detected by visual inspection.

- (c) Plants/bushes/trees to be pruned, healthy, and must not obstruct the sight distance:

No more than 20 percent of the plants/bushes/trees can be in poor condition before intervention is required. No plants/bushes affecting sight distance are allowed. The condition of the plants/bushes can be checked by visual inspection.

- (d) Fences etc in traffic islands, etc must be in good condition and painted:

More than 80% of the fences, culvert headwalls, bridge parapets, distance stones and kerbs must be in good condition and painted all the time. The condition of the fences etc can be checked by visual inspection.

C4.4.1 Service Levels

This section specifies the Service Levels to be complied with in the case of vegetation growing within the road right-of-way: Vegetation is to be controlled to the heights and clearance, at the locations and with the restrictions as set out in the table and diagram below:

Table C4.4.1 Standard Jobs, Intervention Criteria and Response Times

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection **	Repair	
OM401 Clearing and Grubbing Mowing/slashing of roadside areas, maintain sight distance, reduce fire hazard and maintain a tidy appearance at: (a) Medians and traffic islands (b) Road intersections – maintain minimum sight distance to 30 m in advance of all road approaches and departures and any other nominated area. (c) Safety signs, kilometre posts, guardstones and other roadside furniture – slash to ensure full vision.	Maintain grass height to an average maximum 400 mm.	R	8 weeks	1 sqm
OM402 TREE and SHRUB MANAGEMENT Maintenance of roadside areas, including brush cutting, foliage trimming and removal of vegetation.	Tree limbs or trees that are in immediate danger of falling and causing a danger to the public	R	1 day	1 No. of Sites
	Trees and shrubs which restrict intersection sight distance or obscure safety signs	R	4 weeks	
	New tree and shrub growth within drains, clear zones, the shoulder and verge. Trim trees to maintain: - minimum 1 metre from back edge of shoulder and/or kerb; - minimum 5 metre height clearance over pavements.	R	8 weeks	

Diagram 4.2 – Extent of Vegetation Control Requirements

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C4.4.2 Variations and Gradual Compliance with Service Levels

After the completion of construction work, the contractor is to ensure all service level criteria. Other limitations to the compliance requirement are:

(a) Use of Herbicides

Use of herbicides is not allowed.

(b) Tree removal

Removal or cutting of trees growing within the road right-of-way shall only be undertaken after approval of the Employer and/or appropriate authority.

C4.4.3 Means used for Assessing Compliance with Service Levels

The height of vegetation, and its clearance above the road surface and visibility of signs, is part of the criteria for the “Road User Comfort”. They will be measured at road sections selected by the Employer based on their visual appearance. The height is measured by using a ruler; it is defined as the vertical distance between the ground and the highest point of the vegetation. Clearance is also measured with a ruler or visibility from a distance of 50m assessed as normal driving speed; it is defined as the distance between the lowest point of the tree (or other plant) above the road surface or obstruction of the sign.

The average height of vegetation in a one km section will be equal to the average of five values measured in at sections selected by the Employer. The visibility is measured for any obstruction of any sign.

For any one km section of road, compliance with this criterion requires that the average vegetation height measured within the section of one km is below the maximum value stated in the contract or obstruction to any sign.

C4.5 Structures (Table 4.5.1 – OM600)

The Contractor is responsible for the ordinary maintenance of all minor bridges/culverts and similar structures along the roads and road sections included in the contract. In particular, he will be responsible for the correct functioning of the structures (painting of structures, road surface on structures, condition and presence of guardrails, etc) and the safety and comfort of road users while using the structures at normal speeds. Nevertheless, the reconstruction, structural repair and improvement of bridges and similar structures are excluded from the Contractor’s obligations, unless specified elsewhere in the Technical Specifications.

The following notes requirements are to be read in conjunction with the Specifications as stated in Section XI part C and Table 4.5.1

Further to Table 4.5.1, the following requirements are to be addressed by the Contractor:

A structure is defined as culvert (upto 6 metres) and minor bridge (upto 60m). The Contractor shall inspect bridges in accordance with the guidelines of *Appendix C – Form OM02*, and maintain minor bridges, culverts and streams as specified:

(i) Ordinary maintenance requirements for structures

(a) Cleaning and clearing:

- Clean deck, footways, expansion joints of any earth/debris build-up
- Ensure scuppers and down-pipes are clean of debris and free draining

- Remove any debris build-up on superstructure or substructure
 - Clear vegetation in or around bridge
- (b) Structure deck/surface repair
- Repair any defects in the bituminous/granular wearing surface
 - Replace running planks on wooden decks if damaged
 - Concrete/Masonry repairs < 1m³ at any one location
- (c) Repairs or painting railing
- Where previously painted, the Contractor shall paint all posts /parapets/railings /headwalls on culverts and/or bridges within 12 months of the commencement of the contract and shall repaint thereafter every 12 months.
 - Repair spalled railing posts/parapets and crash damage where railing repair < 5 metres in length.
 - Tighten posts or rails where required
 - White washing of exposed concrete/masonry areas of bridges in two coats to give an even and smooth surface for protection, including the scraping and cleaning of old surface
 - Repair and/or strengthen existing mild steel railings.
 - Concrete repairs < 1m³ at any one location
- (d) Stream maintenance
- Ensure adequate drainage on structure approaches and embankments
 - Remove all debris in and around bridge and within 10 metres upstream and downstream
 - Where minor, scours shall be repaired. If the scour is > 5m³, in the initial survey the Employer should be notified, and repairs completed as an Initial Rectification Works.
- (e) Signs and bridge furniture
- Repair bridge signs and markings where required
 - Advise Employer if additional signs are required
 - Establish and/or repaint Structure Number on each structure
- (f) Vandalism
- Enact repairs needed due to vandalism including the removal of offensive graffiti

C4.5.1

Service Levels

The Service Level requirements for bridges, major culverts (>6m span) and retaining walls and similar structures are as shown in the following Table C4.5.1

Table C4.5.1 Standard Jobs, Intervention Criteria and Response Times for Structure

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection **	Repair	
OM600 STRUCTURES				
OM601 BRIDGE and MAJOR CULVERT MAINTENANCE Inspection and maintenance of bridge components including: (a) cleaning and clearing of deck, footway, expansion joints, scuppers and downpipes; (b) repair of spalled superstructure, posts and parapets, tightening railing. (c) whitewashing of exposed concrete/masonry (d) repair and/or strengthening of MS railing	Any accumulation of material which affects proper drainage of water, or restricts the operation of expansion joints.	R	8 weeks	1 No. of Sites
	Minor work on structural components and other repairs, protection of exposed surfaces	B	8 weeks	1 No. of Sites
Where previously painted, paint railings and parapets.	As per agreed Program and with all railing and parapets painted at least once every 12 months. Where whitewashing and colour banding is done and 30 months where synthetic enamel painting is involved.	B	12 months	1 No. of Sites

C4.5.2 Procedures for Inspection

The visual inspections will be undertaken as part of the Formal and Informal Inspections. The criteria for Structures will be checked at points selected by the Employer based on visual appearance. The Employer shall be the sole judge of compliance. If a specified criterion is not met, the one-kilometer section in which the deficit occurs will be judged as non-compliant.

C4.6 Shoulders and Batter Slopes Stability (Table 4.6.1 – OM200)

The Contractor is responsible for the maintenance of all embankment and cut slopes along the roads sections included in the contract. In particular he is responsible for ensuring they are stable, without deformations and erosions. Nevertheless, the reconstruction and major improvements to retaining structures and slope stabilization is excluded from the Contractor's obligations, unless specified elsewhere in the Technical Specifications.

The following notes requirements are to be read in conjunction with the Specifications as stated in Section XI part C and Table C4.6.1

Further to Table C4.6.1, the following requirements are to be addressed by the Contractor:

The shoulder is defined as the area from the edge of the paved lane to the point to the verge or side drain

(i) **Unsealed Shoulder Repair (OM 201)**

The activity aims to maintain the shoulder facility to support the pavement edge, the occasional use by traffic, its function as the drainage path for water runoff from the carriageway and to ensure the elimination of an edge drop off at the edge of sealed pavement. The Contractor shall fill depressions, scours and areas of drop off and ensure shoulder material supports the sealed edge. The material used for shoulder maintenance should be mechanically cohesive and able to display stability in wet weather. Shoulder material shall be suitably compacted. Where the edge drop-off is > 70mm over a continuous significant distance greater than 100m, the Contractor is to include resheet the shoulder in the Initial Rectification Works

(ii) **Unsealed Shoulder Power Grading (OM 202)**

All unsealed shoulders shall be graded, as a part of OM responsibilities, to restore shape and to eliminate roughness, shoulder wear and edge drop off, on a cyclic basis of every 12 months. The works shall be scheduled over 12 months, however the majority of the grading shall be carried out immediately following the monsoon. The schedule of power grading works shall be shown in the Program including timeframes for completing various road sections. Five power grading cycles shall be carried out during the period of the Contract. Works shall be carried out in accordance with MoRTH 3003.

Every care shall be taken to ensure that the grader blade does not ride hard on the edge of the seal and damage it. Any damage caused to the seal or edge of

pavement shall be made good by the Contractor at its cost. Potholes and scours shall be repaired before grading.

Shoulders shall be graded in the direction of traffic in such a manner that loose or windrowed material is removed from the adjacent sealed pavement as the work proceeds. Windrows shall be spread as soon as possible, shall not exceed 2 kilometres in length at any time and be completely spread before work ceases for the day. The Contractor shall take care to ensure that stones are not graded onto the pavement unnecessarily and final cross falls are sufficient to allow for a free draining pavement.

The graded material shall be adequately watered and compacted with a roller to facilitate support of the sealed edge and drainage away from the pavement.

(iii) Embankment and Batter Repairs (OM 203)

Repair of isolated embankment and batter damage, including at culvert sites and at other drainage structures, resulting from scouring, washouts, erosion, of volume $<10\text{m}^3$ at any one site, shall be carried out to reinstate the embankment or batter to its original profile by means of constructing backfill with embankment quality material as approved by the Employer.

C4.6.1 Service Levels

The Service Level requirements are shown in the following table.

Table C4.6.1 Standard Jobs, Intervention Criteria and Response Times for Shoulders and Embankments

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection **	Repair	
OM201 UNSEALED SHOULDER REPAIR Spot filling, grading and reshaping of unsealed shoulders, up to 25m length per location, to correct: (a) drop off from edge of seal to shoulder; (b) roughness, scouring or potholes; (c) holding of water.	Edge drop off onto unsealed shoulder greater than 100 mm. deep	H	1 day	1 shoulder km
	Edge drop off onto unsealed shoulder greater than 50 mm.	R	8 weeks	
	When potholes or scouring > 70 mm depth measured with a 1.2 m straightedge, or when there is significant holding of water	R	2 weeks	
OM202 UNSEALED Road repair Repair to the unsealed road, to correct spot shoulder, rutting, erosion etc.	When pothole or scouring >50 mm depth when measured with a 1.2 m straight edge	R	2 week	1 shoulder km
OM203 EMBANKMENT AND BATTER REPAIRS Repair of isolated embankment and batter damage, including from scouring, washouts, erosion.	When embankment or batter damage becomes a hazard	H	1 day	No. of Sites

C4.6.2 Variations and gradual compliance with Service Levels

After the completion of construction work, the contractor is to ensure all service level criteria.

C4.6.3 Procedures for Inspection

The visual inspection will be undertaken as part of the Formal and Informal inspections. The criteria for Slopes will be checked at sections selected by the Employer based on visual appearance. The Employer shall be the sole judge of compliance. If a specified criterion is not met, the one-kilometer section in which the deficit occurs will be judged non-compliant.

C4.7 Operational Servicing (Table C4.7.1 – OM700)

The following notes requirements are to be read in conjunction with the Specifications as stated in Section XI part C and Table C4.7.1

Further to Table C4.7.1, the following requirements are to be addressed by the Contractor:

(a) Landslips

The Contractor shall repair all minor landslips under the Lump Sum. Where the slip requires replacement material $> 5\text{m}^3$, or the effort to repair is of a specialised nature, the Employer should be advised and payment made under Emergency Works.

(b) Initial Emergency Call out response

Prior to commencement of work on-site, the Contractor shall provide the Employer with details of a contact person available 24 hours per day, and other contact numbers that will be used by the Contractor during any emergency response.

The Contractor shall provide 24 hours per day capability to respond to an emergency within the response time specified, from the time of notification.

The Contractor's initial response to any emergency shall, within the capability of the PMU, make the incident site safe for the public or otherwise assist the control agency i.e. police etc. Any response which exceeds the capability of the PMU is to be immediately notified to the Employer. The Employer may direct that additional Contractor resources be provided and paid for as Emergency Works.

In the event of site specific damage to the road surface by a storm, accident, or other incident, the Contractor shall be required to supply and lay up to 5m^3 of granular pavement material and/or 5m^2 of bituminous surfacing for permanent or temporary repair under the provisions of the Lump Sum. Where specific damage requires replacement material $> 5\text{m}^3$ of granular material and $> 5\text{m}^2$ of bituminous surfacing or the effort to repair is of a specialised nature, the Employer should be advised and payment made under Emergency Works.

Where a traffic diversion is required, prior permission must be obtained from the Employer and Police. A traffic management plan showing placement of signs, detour routes and location of traffic control men shall be approved by the Employer prior to the diversion.

The Contractor shall co-operate with the control agency and other emergency services. Any request to carry out work outside the road reserve shall be referred to the Employer for approval prior to the work being undertaken.

The Contractor is not responsible for salvaging vehicles which have been damaged in crashes and is not required to assist the owners of such vehicles except where necessary for the safety of the public or to reduce delays to traffic.

(c) Wet weather and flooding

During wet weather (monsoon) the Contractor shall pay particular attention to sections of road which are likely to be damaged or inundated by water. The Contractor shall provide signs on inundated sections of road, clear waterways, pit entrances and culverts of obstructions, and divert water from the roadway when necessary.

The Contractor shall remove all blockages from bridges and culverts immediately water levels permit such work to proceed. In case of flood, the highest level reached by the water on both sides of the road shall be recorded and the Employer advised within seven (7) days.

Where roads become pot-holed during wet periods i.e. monsoon, the Contractor may request to the Employer that temporary repairs be undertaken. Such temporary works shall be paid as part of the Lump Sum unless the Employer ascertains that the road section is beyond the provisions of Intervention Maintenance.

(d) Vandalism

The Contractor shall remove all graffiti and repair minor structural damage to road furniture assets caused by vandalism. The removal of graffiti may be by repainting or chemical solvent and the remaining surface visually similar to the original state.

(e) Dead animals

The Contractor shall remove all dead animals from the road pavement immediately and in accordance with local by-laws. All dead animals are to be removed from the road reservation within 24 hours. The Contractor shall arrange for the disposal of the carcass and all works are included in the Lump Sum.

(f) Road Obstructions

The Contractor is to remove any obstructions within the road traffic lanes which are a traffic, safety or health hazard within the road reserve. Obstructions may include cardboard, old tyres, paper, wood, garbage, rubbish, glass, metal, rubber, dirt, waste matter, or anything of a like nature that has a physical dimension >300mm. that is a visual detriment to the public. Obstructions of a hazardous nature to the public and dead animals shall be removed immediately.

Table C4.7.1 Standard Jobs, Intervention Criteria and Response Times for operational Servicing

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection **	Repair	
OM701 LAND SLIP CLEARING All work associated with the removal of all material from the road pavement and table drain up to and including the first 5m ³ of rock and/or earth slips from the road and table drain including the disposal of the material at a suitable dump site	When event is detected or made known	E	Same day	1 m ³
OM702 EMERGENCY WORKS AND SERVICES All work arising from emergency incidents including flooding, fires, storms, traffic crashes, etc. to ensure the safety of the public and protection of the infrastructure.	When event is detected or made known.	E	Same day	1 No. (incident)
OM703 VANDALISM REPAIR Repair or reinstatement of isolated minor damage of <5 m ² caused by vandalism, including all graffiti.	When vandal damage or graffiti is a hazard or objectionable to the public	H	Same day	1 No of Sites
	Other areas of damage and graffiti	R	2 weeks	
OM704 ROAD OBSTRUCTIONS and DEAD ANIMALS Collection and removal of obstructions on the road of dimension > 300mm and all carcasses from within the road reserve.	Any carcass or when an obstruction on the road becomes a traffic, safety or health hazard or is visually upsetting	H	Same day	1 No.

C4.7.2 Variations and gradual compliance with Service Levels

After the completion of construction work, the contractor is to ensure all service level criteria.

C4.7.3 Procedures for Inspection

The visual inspection will be undertaken as part of the Formal and Informal inspections. The criteria for Slopes will be checked at sections selected by the Employer based on visual appearance. The Employer shall be the sole judge of compliance. If a specified criterion is not met, the one-kilometer section in which the deficit occurs will be judged as non-compliant.

C5 Usability of the Road

C5.1 Service Levels

The Contractor will have to ensure that the road is open to traffic and free of interruptions at all times.

C5.2 Variations and gradual compliance with Service Levels

Permitted exceptions are

Event	Service Level
Road accidents	Time after each event
	4 hours after release from police

C5.3 Procedures for Usability Inspection

There is no particular testing method for the usability of a road, other than driving on the road in a normal manner, utilizing the type of vehicle indicated in clause C2 of Section V. The condition is not complied with if the road is interrupted at any point. The condition is however complied with if it is possible to continue to drive on the road, and without the vehicle suffering any damage caused by the bad condition of the road.

C6 Adjustment for maintenance of Periodic Maintenance, Minor Improvement and Deleted of Road Sections

The Contractor shall be responsible for carrying out all maintenance works on those sections of roads undergoing Minor Improvement Works or Periodic Maintenance by other agencies except for the period when the works site is in the possession of others.

C6.1 During the term of the Contract, sections of road within the Contract may need to be deleted from the Contractor's OM responsibilities for specific periods of time as directed by the Employer

The sections of Road to be deleted will include either the exclusion of full OM responsibilities or partial OM responsibilities.

C6.2 In the case of partial OM responsibilities, unless otherwise instructed by the Employer, the Contractor's responsibilities will be categorised either as Type A, B as described below:

Type	OM Code	OM Description
A	OM 101	Pothole Patching
	OM 102	Surface Depression & Rut Patching
	OM 103	Crack Sealing
	OM 104	Surface Treatment
	OM 106	Edge Repair
	OM 107	Digout Repair
	OM 108	Repair of Concrete Pavement
B	OM 105	Pavement Sweeping
	OM 201	Unsealed Shoulder Repair
	OM 202	Power Grading of Unsealed Shoulder
	OM 203	Embankment and Batter Repairs
	OM 301	Surface Drain Cleaning
	OM 302	Pipe, Culvert and Pit Cleaning
	OM 303	Pipe, Culvert and Pit Repair
	OM 304	River and Stream Maintenance
	OM 401	Grass Control
	OM 402	Tree and Shrub Management
	OM 501	Sign Maintenance
	OM 502	Guardstones/Boundary Stones/Guardrail
	OM 503	Distance Markers, Guideposts, Delineators and Hazard Markers
	OM 504	Footways
	OM 505	Road markings and Cats Eyes
	OM 601	Bridge and Major Culvert Maintenance
	OM 701	Land Slip Clearing
	OM 702	Emergency Works and Services
	OM 703	Vandalism Repair
	OM 704	Road Obstruction and Dead Animal Removal

C6.3 Situations where the need will arise for the addition or deletion of road sections, and the subsequent need for the inclusion or exclusion of the Contractor's OM responsibilities, will include, but will not be limited to, the following:

- (a) Major works contracts if any under PM works which have been let by the Employer within a road section to other contractors for a specific period of time in that case, the Contractor's full OM responsibilities will be excluded for the period of the major works contract up to its completion date (inclusive of any approved time extensions) on the applicable section of road.
- (b) Major works contracts if any under PM works let by the Employer within a road section which have been completed and are within the defects liability period in that case, from the time of completion and up to the end of the defects liability period of the major works contract, the Contractor will carryout OM responsibilities for Type B items only as listed above on the applicable section of road.

- (c) Major works contracts if any under PM works let by the Employer within a road section which have reached the end of the defects liability period for the major works contract in that case, at the end of the defects liability period and on issuance of the final certificate by the Employer for the major works contract, the Contractor shall resume full OM responsibilities on the applicable section of road.
 - (d) A deteriorated section of road if programmed for major upgrading works or any stretches proposed to be converted as NH or otherwise or deletion of stretch for want of improvement in the future by the Employer, the same shall be deleted from the scope of the contract, and the OM payments reduced accordingly . However until the commencement of these major works, the Contractor shall carry out OM responsibilities on the applicable section of road as directed by the Employer in charge
 - (e) If any Periodic Maintenance works and works undertaken by the Contractor within a road section which is either in progress or is within the defects liability period in that case the contractor is however required to carryout full OM responsibilities through the contract period except from the Start Date of the PM works and up to the end of defect liability period for that PM work, the Contractor shall be eligible for payment for Type B items only under Ordinary Maintenance as listed above on the applicable section of road.
 - (f) If there is any Delay or non-availability of necessary clearances/no objections from competent authorities to carry out works within a road sections that pass through national parks/sanctuaries/reserve forest areas or other sensitive areas in that case the road section will be suspended (till the clearances are obtained) or deleted from the scope of the contract as the case may be.
- C6.4 The adjustment to the proportion of the monthly Lump Sum payable for OM to allow for the additions and deletions of sections of road shall be determined by the Employer in accordance with the following formulae:

$$M_n = \frac{LS}{60} \times \left(\frac{LF + LB \times WB}{LT} \right)$$

Where:

- M_n = Monthly Lump Sum amount for OM applicable for month number “ n ” (with n being from 1 to 60).
- LS = The value of the Lump Sum applicable for OM for 5 years as stated in Schedule 1, Item 1.
- LT = Total length of Roads included in the Contract and as stated in Clause A7(i) of the Technical Specification.
- LF = Length of Road under the Contract for which Full OM responsibilities have been carried out by the Contractor for the month in question.
- LB = Length of Road under the Contract for which only Type B OM responsibilities have been carried out by the Contractor for the month in question.

WB = Proportionate cost of carrying out Type B OM relative to the full cost of OM for a typical section of road (applicable for both State Highway and Main District Roads). WB shall be taken as 0.45.

C6.5 Payment amounts determined based on the above calculations shall be subject to the other adjustment provisions as provided for in Clauses 43, 47, 48, 49 and 51 of the General condition and deductions in accordance with Clause C7 of the Technical Specification.

C7 Payment Reductions

In accordance with the relevant clauses of the GC, Payment Reductions are applied in case of non-compliance with Service Level requirements.

Payment shall include provision for all costs associated with the management, administration, plant, equipment, labour and materials in keeping all asset items within the specified Response Code levels.

Where payment is made on a Lump Sum basis, the Contractor shall execute the work and perform its obligations under the Contract and the sum payable by the Employer to the Contractor shall be the Lump Sum, adjusted by any additions or deductions made under the Contract.

Payment shall be made in equal monthly installments in OM. Price Adjustment will be as per Clause 48 of Particular Conditions. The monthly installments will be determined by dividing the OM Lump Sum for agreed rate yearwise divided by Twelve (12) months. These installments are subject to deductions for the deletion of sections from OM responsibilities and for work not undertaken or not undertaken to the quality required.

The Maintenance Program Compliance Sheet (Appendix C) and the Non-Conformance Report (Appendix C) shall accompany the Contractor's invoice for payment. Any works detailed in the subsequent Employer's Memorandum not met within the final Response Time may be subject to a deduction on the monthly instalment.

The results of each formal inspection of the Service Levels and other performance criteria will be recorded by the Employer in the form of a Memorandum. The Memorandum will state the type and location of any non-compliance detected, in particular those non-compliances already shown in the standard tables provided by the Contractor as part of their monthly statement. For each individual case of non-compliance, the Employer will determine a date by which the Contractor must have completed the necessary measures in order to remedy the cause of the non-compliance. A follow-up site visit is therefore necessary at the date fixed by the Employer, or soon thereafter, in order to verify that the Contractor has indeed remedied the cause of non-compliance.

If at the date indicated in the Memorandum, the Contractor has not remedied the cause for non-compliance, independent of the reason given for their failure to do so, the Contractor is subject to Payment Reductions in accordance with the relevant clauses of the GC.

Payment Reductions are variable over time. If the Contractor fails to remedy a cause of non-compliance for which a payment reduction has already been applied, the amount of the payment reduction shall be doubled for that particular non compliance every month until the non-compliance is corrected. On the successive fourth month if the non-compliance is not corrected,

it shall be deemed a breach of Contract under Clause 59.2.2(c) of the General Conditions and the Contract shall be terminated.

The calculation of the initial amounts of payment reductions, and the formula for their adjustment over time, is to be based on the following rules:

There are three types of Payment Reductions on Ordinary Maintenance:

(i) **Payment Reductions for non-compliance with Road User Service Comfort Measures and Durability** (other than roughness): For any road or road section as specified in Section II of this document (Bid Data Sheet), the Employer may reduce the monthly lump-sum payment by the percentage of non complying kilometers as determined by the Project Manager each month. The payment will therefore be the basic lump-sum multiplied by the ratio of length of complying road to the total length of the network as detailed in the following.

- (a) Failure to achieve Response Time or stated quality.

Where the Contractor fails to complete Ordinary Maintenance works to the Intervention Criteria within the Response Time or quality specified, the Employer may deduct monies from payments due under the Contract. The amount of deduction shall be based on the Lump Sum bid in Schedule 1 – Item 1, proportioned by the quantity and percentages given in Table C6.1. An example of such deduction is shown in C7(i)(c) below. Deductions will continue to be made on a monthly basis until the work is satisfactorily completed. The minimum deduction for any item will be based on a per kilometre/month basis.

- (b) Action by the Employer in the event of Non-Compliance in Standard Job activities.

The results of each formal inspection of the site and other performance criteria will be recorded by the Employer in the form of a Memorandum. The Memorandum will state the type and location of any non-compliance detected and in particular those non-compliances already provided by the Contractor as part of Maintenance Compliance Program Sheet (Form OM08). For each non-compliance the Employer will schedule a minimum of 7 days notice from the issue of the Memorandum for the Response Time to complete the non-compliance.

A follow-up site visit shall be arranged at the date fixed by the **Employer** in order to verify that the Contractor has remedied the cause of non-compliance.

If the Contractor has not remedied the cause for non-compliance at the date of the final Response Time indicated in the Memorandum, independent of the reason given by him for his failure to do so, a payment deduction may be made.

No deductions will be levied on the Contractor for failure to fully meet the maintenance intervention standards for period duration up to the defined in the individual activity group of the Technical Specifications, while the Contractor is establishing on site and setting maintenance routines. For subsequent monthly payments, deductions will be levied in accordance with the Contract provisions.

- (c) Method for Payment Deduction

For the purpose of establishing cause for a payment deduction for non-compliance, each road is evaluated between kilometre stones. If kilometre stones have not been erected, a datum is established by the Employer from which even kilometre distances are measured. The minimum measurement for non-compliance is one (1) kilometre.

A monthly deduction is made when non-compliance for any Standard Job issued in the Memorandum from the Employer remains incomplete by the stated completion date as scheduled in the approved monthly Program. It is of no consequence whether the non-compliance for each Standard Job is a single defect or multiple defects within a set one kilometre distance; the full kilometre is said to be non-compliant for that Standard Job activity.

For each Standard Job activity, the deduction is calculated by the example below. The total deduction is the sum of individual Standard Job activity deductions.

The amount of the deduction shall not be repaid to the Contractor, even after the Contractor re-establishes the quality levels to the standards required by the Contract.

Example:

Sub Item OM101 – The length of the network less excluded sections is 100Km. 20km of pothole patching is identified in the monthly Program for repair within the month, based on the Contractor's and Employer's inspections. However at the end of the month being assessed, 15km of the total 20km had been repaired by the Contractor. 5 km had not been completed within the required Response Time.

Accordingly, the assessed deduction for non-compliance is:

= OM Lump Sum Bid (Schedule 1 Item 1) x $\frac{1}{60}$ (per month) x 18% (percentage applicable for potholes) x $\frac{5\text{km}}{100\text{km}}$ (portion of road not compliant to the Service Level for this activity)

Deductions for all Standard Job activities are calculated similarly and totalled.

Payment reduction will be made in respect to road useability and non-provision of management requirements, for example, failure to provide the following; the Patrol Maintenance Unit, and program reports.

Deductions for all items shall be added to determine the total penalty to be applied to the Lump Sum.

If penalty exceeds the limits as stated in Clause 51.1 of the Particular Conditions, the Contractor will be in Fundamental Breach of the Contract can be terminated.

Table C6.1 Payment Deductions for incomplete Job Activities

Ref.	Standard Job Description	Quantity	Unit	Weighted Value %
OM101	Pothole Patching		Km	18
OM102	Regulation of Surface Depressions and Rut Patching		Km	6
OM103	Crack Sealing		Km	2
OM104	Surface Treatment		Km	1
OM105	Pavement Sweeping		Km	2
OM106	Edge Repair		Km	10
OM107	Dig out Repair < 5 m ²		Km	15
OM108	Repair of Concrete Pavement		Km	1
OM201	Unsealed Shoulder Repair		Km	8
OM202	Unsealed Shoulder Power Grading		Km	3
OM203	Embankment and Batter Repair		Km	1
OM301	Surface Drains Cleaning		Km	2
OM302	Pipe, Culverts and Pits Cleaning		Km	4
OM303	Pipe, Culverts and Pit Repair		Km	3
OM304	River/Stream Maintenance		Km	2
OM401	Grass Control Clearing and Grubbing		Km	2
OM402	Tree and Shrub Trimming Management		Km	2
OM501	Sign Maintenance		Km	2
OM502	Guardstone/Guardrail Maintenance		Km	2
OM503	Distance Stones, Guideposts, Delineators and painted Tree Maintenance and Hazard Markers		Km	2
OM504	Footways		Km	1
OM505	Road marking and Cats Eyes		Km	1
OM601	Bridge and Major Culvert Maintenance		Km	3
OM701	Land Slip Clearing		Km	1
OM702	Emergency Works and Services		Km	4
OM703	Vandalism Repair		Km	1

OM704	Litter Control Road Obstructions & Dead Animals		Km	1

- (ii) **Payment Reductions for non-compliance with road usability criteria:** Calculated based on the provisions shown in section of the Technical Specifications. The amount of the reduction is to be deducted by the Employer from the monthly lump-sum payments due to the Contractor.

**CONDITIONS FOR APPLICATION
OF PAYMENT REDUCTIONS**

**UNIT RATES FOR NON
COMPLIANCE**

Interruption of motorized traffic (light and/or heavy vehicles) anywhere along a new road or road section. Excluding exemptions.

2000 Rupees for each occurrence of non-compliance.

- (iii) **Payment Reductions for non-compliance with Management Performance Measure:** Calculated based on the provisions shown below. The amount of the reduction is to be deducted by the Employer from the monthly lump-sum payments due to the Contractor.

- (a) Failure to conduct and submit the relevant Surveys/Inspections and submit reports (Initial/Milestone/Completion/Monthly) survey/Inspections in accordance with Part A of the Technical Specifications
Full day delay – Rs 2000/-
- (b) Failure to submit the Program of Performance (Contract Plan) in accordance with Clause A15 of the Technical Specifications
weekly penalty of Rs 1,000 shall apply until the Plan is presented.
- (c) Failure to comply with Contract requirements (Quality, Environmental, Traffic Management, Emergency Response, etc.)
Penalty of Rs 3,000 shall apply for each occurrence.
- (d) Failure to engage / Provide Services of Road Manager up to 30 days
Penalty of Rs.30,000/- for that particular month

Compliance to environmental approvals as detailed in Section H Table H1 is required when the Contractor establishes a new HMP/WMM Plant, Batching Plant, Crusher, Camp Site, Labor camp, exploring new borrow pit areas quarry sites, bore wells and other water sources. Failure to meet the relevant requirement will be reported to the relevant Government Department.

NOTE: All deductions noted within this clause **will not be reimbursable** and will be treated as a deduction to the Contract.

Section XI, Part D

Specifications for Periodic Maintenance Works

Part D Specifications for Periodic Maintenance Works

1. Periodic Maintenance Works to be carried out by Contractor
2. Periodic Maintenance Works
3. Performance Criteria
4. Service Level
5. Procedure for Inspection and Payment
6. Payment Reduction and Liquidated Damages

D1 Periodic Maintenance Works to be Carried Out.

Periodic Maintenance works are the pavement resurfacing activities (SDBC overlay) that are beyond Ordinary Maintenance Activities. After completion of the construction Works to get the road to the desired Service Level, the Contractor shall apply surface treatment (SDBC/BC overlay) at the end of 4th year on whole road.

The contractor is to quote the rate of PM works as required in BDS/contract data. The wearing course activity shall be paid on a unit lane kilometres.

The Contractor shall conduct all necessary corrective works under Ordinary Maintenance in preparation of the resurfacing. Prior to commencement of an overlay, the Contractor is to notify the Employer of the impending commencement of the Works for inspection in accordance with Clause 20 of the General Conditions. In addition to the specified minimum depth, the Contractor is to ensure Camber correction is made for a cross fall of 2.5% on the finished surface.

The Contractor shall engage such additional resources necessary to complete the specified Periodic Maintenance works. The Contractor shall not utilize resources specified in this Contract as being committed to Ordinary Maintenance activities.

D2 Periodic Maintenance Works

All Periodic Maintenance works shall be carried at the end of years after completion of construction work.

D3 Performance Criteria

The performance Criteria for Periodic Maintenance is Roughness. Roughness Service Levels compliance is to be assessed using a Bump Integrator or similar equipment.

D4 Service Levels

After completion of construction work a joint survey will be made for Roughness by the contractor and the Employer. The contractor is responsible to ensure this roughness after periodic maintenance work.

D5 Procedures for Inspection and Payment

If the measurement reveals that the road roughness is above the Service Level, the Employer will establish a time frame for the Contractor to take the measures necessary to correct the non-conformance. That time frame should normally ensure that the corresponding works are completed within four months. The Employer may however grant a longer period if, in the opinion of the Employer the circumstances warrant such longer period. Upon completion of the non conforming section the relevant section roughness shall be measured again to confirm compliance. Liquidated Damages shall apply after the granted date until the non-conformance has been corrected.

A further measurement shall occur in the first 3 months of year 5 as part of the completion report. The contractor will be required to correct any non-conformances and re measure prior to the Completion of the Contract. If the any section of the road does not meet the Service Level prior to the end of the Contract, Liquidated damaged shall apply in accordance to Clause 40.3 for the General Conditions. .

D6 Payment Reduction and Liquidated Damages

For failure to complete the work in the specified time period in accordance Clause 39 the Liquidated Damages shall be imposed in accordance to Clause 39.3 of the Particular Conditions.

For non-compliance with the Performance Requirement on road roughness and 25 mm layer thickness at the measurement in accordance to Clause 40 of the General Conditions, the contractor can correct the non compliance at his own cost for retesting within the timeframe agreed with the Employer or pay Liquidated Damages as detailed in Clause 40.3 of the Particular Conditions.

Section XI, Part E Specifications for Emergency Works

List of Contents

Part E Specifications for Emergency Works

1. Definition of “Unforeseen Natural Phenomena”
2. Procedure for requesting Emergency Works
3. Remuneration of Emergency Works
4. Provision for Emergency Works
5. Obligations of Contractor during Emergencies and Emergency Works
6. Minor repairs made necessary by “Unforeseen Natural Phenomena”

E1. Definition of “Unforeseen Natural Phenomena”

Emergency Works are designed to repair those damages to the roads under contract which are caused directly by unforeseen natural phenomena with imponderable consequences, due to the reasons beyond the control of contractor occurring either in the area of the roads or elsewhere, but with a direct impact on the roads. “Unforeseen Natural Phenomena” are defined as follows:

- (i) Flooding where water levels rise above the crown level of the road resulting in complete or partial washout of the culvert or road embankment causing disruption of traffic. Any damage which results from insufficient maintenance of drainage structures will not be considered as “emergency” and will need to be repaired from within the Ordinary Maintenance Services.
- (ii) Major landslides (greater than 50 m³) which block the road carriageway and drains, encroach onto the road surface and interrupts the flow of traffic or is unsafe. Can be caused by heavy rains or earthquakes. Landslides within the right-of-way caused by overflow of poorly maintained cut-off drains or catch dams will not be considered as an “emergency” and will need to be removed as part of Ordinary Maintenance Services.
- (iii) Traffic accidents which interrupts traffic and causes insurmountable damage to the road. Nevertheless, the Contractor will be responsible to provide full support to the police and road users and arrange signing and cleanup of site or sanding as necessary is part of Ordinary Maintenance Services.
- (iv) Due to the reasons beyond the control of contractor in routine maintenance of road under contract conditions like continuous/ incessant rains, other events listed in the clause 38.1 of General Conditions, etc.,

E2. Procedure for Requesting Emergency Works

If damages clearly caused by “Unforeseen Natural Phenomena” result in a reduction of Service Levels below the normal threshold values specified in this contract, the Contractor may make a formal request to the Employer to carry out Emergency Works designed specifically to remedy those damages. If the Contractor decides to make a request for Emergency Works, he must (i) immediately inform the Employer of his intention to do so, by telephone, radio or other means, (ii) document the circumstances of the Force Majeure event and the damages caused, through

photographs, video and other suitable means, (iii) prepare a written request, stating the type of works he intends to carry out, their exact location and the estimated quantities and costs, including photographic documentation. In any case, a request for Emergency Works must be made immediately after the Contractor gains knowledge of the existence of damages caused by “Unforeseen Natural Phenomena”.

The Employer, upon receipt of the request and not later than 24 hours thereafter, will evaluate the request made by the Contractor based on a site visit, and issue an order to carry out the Emergency Works. The order will specify the type of works, their estimated quantities, the remuneration to be paid to the Contractor, and the time allowed for their execution. The order may indicate a requirement for an engineering/geotechnical assessment of the options for the permanent repairs to the site.

E3. Remuneration of Emergency Works

Emergency works are remunerated by the Employer from the provisional sum for each work order established on the basis of executed quantities at the unit prices covered under Schedule 4 for similar items and for other items the unit prices shall be based on the SOR available just before the execution of work arrived as per Clause 61 and 63 of General Conditions of Contract.

In the event of unforeseen events, works shall be conducted as Emergency Works (Day works). These Works shall be undertaken under Day works only where formally approved by the Employer. Works carried out under Day works shall be for minor items of works which are not within the scope of Schedule 1, 2, 3 or 4 activities. The Contractor shall maintain detailed records for the items of plant or materials utilised under Day works and shall obtain the Employer’s Representative endorsement of the site dockets to verify times and quantities used.

In emergency incidents, where the emergency work is beyond the scope of OM responsibilities and not listed in the schedule, the Contractor shall provide the Employer a full listing of costs in accordance with the rates tendered in work Schedule 4. Once the site has been made safe, the Contractor is not to proceed with remedial works until the approval of the Employer is received.

E4. Provision for Emergency Works

The total contract amount will include a provisional sum of Emergency Works during the contract period. The actual payments for Emergency Work will be based on the actual quantities executed.

E5. Obligations of Contractor during Emergencies and Emergency Works

Given the nature of this contract and the fact that Emergency Works are remunerated separately, the Contractor will, during the execution of Emergency Works, continue to be responsible for assuring the normal Service Levels on all roads included in the contract. In particular, the Contractor will do everything reasonably possible in order to ensure the normal use of all the roads under contract, including the sections affected by emergencies.

If road traffic has been interrupted because of an emergency, the Contractor will take the measures necessary (i) to reopen the road to traffic in the shortest time possible, and (ii)

maintain the road open during emergency works, without being entitled to a specific compensation for those measures. This is valid specifically for trees or other objects which may have fallen on the road, damage to access ramps to bridges, erosion of embankments, collapse of slopes, traffic accidents, flooding, Rectification of natural streams for damages caused due to flood etc.

E6. Minor repairs made necessary by “Unforeseen Natural Phenomena”

If the works necessary to remedy damages caused by an “Unforeseen Natural Phenomena” are below certain threshold values, the Contractor will carry out those works as part of his normal obligations and without having the right to invoke the provision of the contract concerning emergencies and the remuneration of emergency works. In these cases the consent of the Employer is not needed and the Contractor will simply carry out the works on his own initiative. He will nevertheless inform the Employer of the damages occurred and the remedial measures taken.

The threshold values for minor repairs are as shown in the table below *for project costing more than **Rs.35 crore***

Activity	Unit	Threshold Quantity per emergency event
Slides of material onto road	m ³	50
Culverts	Number	1
Bituminous concrete	m ³	20
Base course	m ³	50
Concrete	m ³	5
Embankment	m ³	50

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**CONDITIONS OF CONTRACT AND CONTRACT FORMS
FOR MAINTENANCE**

CMBD 01.01.2014

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SECTION XII

GENERAL CONDITIONS (GC) FOR MAINTENANCE

CMBD 01.01.2014

Section -XII
General Conditions for Maintenance(GC)

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A. CONTRACT AND INTERPRETATION

1. Definitions

- 1.0 Applicability of this contract condition:- These conditions of contract shall be applicable only for Maintenance part of the contract. In case of any ambiguity between GCC of Construction and GCC of Maintenance former will prevail over later. Lines crossed shall be deemed as deleted and shall not form the part of the contract.
- 1.1 Boldface type is used to identify defined terms.
- Schedule of Prices** means the priced and completed Schedule of Prices forming part of the Contractor's Bid.
- The **Certificate of Completion** is a document issued by the Employer upon completion of Initial Rectification Works, Periodic Maintenance Works, Minor Improvement Works and Emergency Works, or parts thereof, as applicable, in accordance with GC 54.1
- The **Completion Date** is the date of completion of the Services and Works as certified by the Employer, in accordance with Sub-Clause 10.2.
- The **Contract** is the Contract between the Employer and the Contractor to perform the services to be provided by the Contractor, and to execute, complete, and maintain the Works. It consists of the documents listed in Clause 3 below.
- The **Contractor** is a person or corporate body who's Bid to carry out the Works and Services has been accepted by the Employer.
- The **Contractor's Bid** is the completed bidding document submitted by the Contractor to the Employer.
- The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.
- Days** are calendar days; **months** are calendar months.
- A **Defect** is any part of the Works and Services not completed in accordance with the Contract.
- The **Defects Liability Certificate** is the certificate issued by Employer upon correction of defects by the Contractor.
- The **Defects Liability Period** is the period specified in the Contract and is applicable for Periodic Maintenance and Minor Improvement Works, with exclusions identified in the PC, if any.
- Dispute Review Expert (DRE)** is one expert selected and acting in accordance with rules and procedures defined in the Contract to seek to resolve any dispute of any kind that may arise between the Employer and the Contractor in connection with or arising out of the contract, as provided for in Clause 6 hereunder.
- Drawings** include calculations and other information provided by the Contractor for the execution of the Contract.
- Emergency Works** is a set of necessary and sufficient activities to reinstate the Road and reconstruct its structure or right of way strip damaged as a result of natural phenomena with imponderable consequences, such as strong storms, flooding and earthquakes. The need for execution of Emergency Works is jointly identified by the

Employer and the Contractor and for starting of execution of Emergency Works the Employer shall issue a Work Order.

The **Employer** is the party who employs the Contractor to carry out the Works and Services. Executive Engineer of the concerned Road Division is the Employer.

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

Periodic Maintenance Works are specific and clearly defined civil works the Contractor is required to carry out under the conditions of the Contract, as defined in the Specifications. Periodic Maintenance Works quantities are estimated by the Contractor to achieve the performance standards defined by the Service Levels and offered at a Lump-Sum price.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works and Services. The Intended Completion Date is specified in the Particular Conditions (PC). The Intended Completion Date may be revised only by the Engineer-in-charge by issuing an extension of time.

Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works and for provision of Services.

Engineer –in- charge is the Executive Engineer of the concerned Road Division.

Road means the road or network of roads for which the Works and Services are contracted under the Contract.

The **Road Management Office** is the location indicated by the Contractor from which the Road Manager operates, and where the Contractor shall receive notices/communications/correspondences.

The **Road Manager** is a person appointed by the Contractor who is in charge of managing all activities of the Contractor under the Contract. He is also the Contractor's Representative for the purposes of this contract.

Services means all interventions on the Road under the Contract and all activities related to the management and evaluation of the Road which shall be carried out by the Contractor in order to achieve and keep the Road Performance Standards as defined by the Service Levels, and to receive full payment of the monthly fee under the contract

Service Levels are the minimum performance standards for the level of quality of conditions of the Road defined in the Specifications which the Contractor shall comply with.

The **Site** is the area defined as such in the PC.

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.

The **Start Date** is the date when the Contractor has started the physical execution of the Works and Services on the site. It does not necessarily coincide with any of the Site Possession Dates.

A **Subcontractor** is a person or corporate body who has a contractual

agreement with the Contractor to carry out certain activities related to the services to be provided under the contract, which may include work on the Site.

Specifications means the Specifications of the Works and Services included in the Contract and any modification or addition made or approved by the Employer.

A **Variation** is an instruction given by the Employer which varies the Works or Services.

The **Works or Maintenance** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as covered under Initial Rectification Works, Periodic Maintenance Works, Minor Improvement Works and Emergency Works.

Work Order is an order issued by the Employer to the Contractor authorizing the execution of Improvement Works and Emergency Works, as provided for in Clause 27 hereunder.

2. Interpretation	2.1	In interpreting these General Conditions (GC), singular also means plural, male also means female or neuter, and vice versa. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Employer will provide instructions clarifying queries about these General Conditions (GC).
3. Documents Forming the Contract	3.1	Refer to relevant clauses of General Condition of Constructions.
4. Language and Law	4.1	The language of the Contract and the law governing the Contract are stated in the PC.
5. Notices	5.1	Unless otherwise stated in the Contract, all notices to be given under the Contract shall be in writing, and shall be sent by personal delivery, airmail post, special courier, fax or E-mail to the address of the relevant party set out in the PC, with the following provisions: 5.1.1 Any notice sent by fax or E-mail shall be confirmed within two (2) days after dispatch by notice sent by airmail post or special courier, except as otherwise specified in the Contract. 5.1.2 Any notice sent by airmail post or special courier shall be deemed (in the absence of evidence of earlier receipt) to have been delivered ten (10) days after dispatch. In proving the fact of dispatch, it shall be sufficient to show that the envelope containing such notice was properly addressed, stamped and conveyed to the postal authorities or courier service for transmission by airmail or special courier. 5.1.3 Any notice delivered personally or sent by fax or E-mail shall be deemed to have been delivered on date of its dispatch. 5.1.4 Either party may change its postal, fax or E-mail address or addressee for receipt of such notices by ten (10) days' notice to the other party in writing.

- 5.2 Notices shall be deemed to include any approvals, consents, instructions, orders and certificates to be given under the Contract.
- 5.3 The Contractor shall provide at its own cost, and maintain in operation permanently during the duration of the Contract, such communications equipment which ensures that both written (fax or E-mail) and oral (voice) communications can be established at all times
- (a) between the Road Manager and his senior field staff;
 - (b) between the Employer and the Road Manager;
 - (c) between the public telephone system and the Road Manager;
 - (d) The equipment to be provided and maintained includes the equipment located at the Employer's office.
- 5.4 At the Start Date of the Contract, the Contractor must communicate to the Employer the address of his office, including the postal, fax and E-mail address, which for the purposes of this contract is called the Road Management Office, where Notices will be addressed to. The Employer may require that the physical location of the Road Management Office is within the close geographical area of the Road. If the Contractor fails to communicate the address of his Road Management Office, and the Employer is otherwise unable to locate the Road Manager, all notifications to the Contractor shall be valid if a copy is sent to the Contractor's legal address.

6. Settlement of Disputes

- 6.1 Refer to relevant clauses of General Conditions of Construction

B. ASSIGNMENT OF RESPONSIBILITIES

7. Scope of Works and Services

- 7.1 Unless otherwise expressly limited in the Specifications, the Contractor's obligations cover the Design, the carrying out of all Works and the performance of all Services required for keeping the Road in accordance with the Service Levels defined in the Specifications, while at the same time respecting the plans, procedures, specifications, drawings, codes and any other documents as identified in the Specifications. Such specifications include, but are not limited to, the provision of supervision and engineering services; the supply of labor, materials, equipment; Contractor's Equipment; construction utilities and supplies; temporary materials, structures and facilities; transportation (including, without limitation, unloading and hauling to, from and at the Site); and storage, except for those supplies, works and services that will be provided or performed by the Employer, if any, as set forth in the corresponding Specifications.
- 7.2 The Contractor shall, unless specifically excluded in the Contract, perform all such work, services and/or supply all such items and materials not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining the Performance Standards (as specified in Clause 24 of GC) as if such work, services and/or items and materials were expressly mentioned in the Contract.

8. Design Responsibility

8.1 The Contractor shall be responsible for the design and programming of the Works and Services, and for the accuracy and completeness of the information used for that design and programming in accordance with the requirements established in the Specifications.

8.2 Specifications and Drawings

8.2.1 The Contractor shall execute the basic and detailed design and the engineering work in compliance with the provisions of the Contract and the Specifications, or where not so specified in accordance with good engineering practice.

The Contractor shall be responsible for any discrepancies, errors or omissions in the specifications, drawings and other technical documents that it has prepared, whether such specifications, drawings and other documents have been approved by the Employer or not, provided that such discrepancies, errors or omissions are not because of inaccurate information furnished in writing to the Contractor by or on behalf of the Employer.

8.2.2 The Contractor shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof, provided or designated by, or on behalf of, the Employer, by giving a notice of such disclaimer to the Employer.

8.3 Codes and Standards

Wherever references are made in the Contract to codes and standards in accordance with which the Contract shall be executed, the edition or the revised version of such codes and standards current at the date twenty-eight (28) days prior to date of bid submission shall apply unless otherwise specified. During Contract execution, any changes in such codes and standards shall be applied after approval by the Employer and shall be treated in accordance with GC Clause 63.

8.4 Approval/Review of Technical Documents by Employer

8.4.1 For those Works specified in the PC, the Contractor shall prepare (or cause its Subcontractors to prepare) and furnish to the Employer the documents listed in the Specifications (List of Documents for Approval or Review) for its approval or review. Unless otherwise specified in the PC, the Contractor shall not be required to submit for the Employer's approval the Design or other technical documents concerning the Ordinary Maintenance Services remunerated through monthly lump-sum payments.

Any part of the Works covered by or related to the documents to be approved by the Employer shall be executed only after the Employer's approval thereof.

GC Sub-Clauses 8.4.2 through 8.4.7 shall apply only to those documents requiring the Employer's approval, but not to those furnished to the Employer for his information or review only.

8.4.2 Within fourteen (14) days after receipt by the Employer of any

document requiring the Employer's approval in accordance with GC Sub-Clause 8.4.1, the Employer shall either return one copy thereof to the Contractor with its approval endorsed thereon or shall notify the Contractor in writing of its disapproval thereof and the reasons therefore and the modifications that the Employer proposes.

If the Employer fails to take such action within the said fourteen (14) days, then the said document shall be deemed to have been approved by the Employer.

8.4.3 The Engineer shall not disapprove any document, except on the grounds that the document does not comply with some specified provision of the Contract or that it is contrary to good engineering practice.

8.4.4 If the Employer disapproves the document, the Contractor shall modify the document and resubmit it for the Employer's approval in accordance with GC Sub-Clause 8.4.2. If the Employer approves the document subject to modification(s), the Contractor shall make the required modification(s), whereupon the document shall be deemed to have been approved.

8.4.5 If any dispute or difference occurs between the Employer and the Contractor in connection with or arising out of the disapproval by the Employer of any document and/or any modification(s) thereto that cannot be settled between the parties within a reasonable period, then such dispute or difference may be referred to the TRIBUNAL for determination in accordance with GC Sub-Clause 6.1 hereof. If such dispute or difference is referred to the TRIBUNAL, the Employer shall give instructions as to whether and if so, how, performance of the Contract is to proceed. The Contractor shall proceed with the Contract in accordance with the Employer's instructions, provided that if the TRIBUNAL upholds the Contractor's view on the dispute and if the Employer has not given notice under GC Sub-Clause 6.1.5 hereof, then the Contractor shall be reimbursed by the Employer for any additional costs incurred by reason of such instructions and shall be relieved of such responsibility or liability in connection with the dispute and the execution of the instructions as the TRIBUNAL shall decide, and the Time for Completion shall be extended accordingly.

8.4.6 The Employer's approval, with or without modification of the document furnished by the Contractor, shall not relieve the Contractor of any responsibility or liability imposed upon it by any provisions of the Contract except to the extent that any subsequent failure results from modifications required by the Employer.

8.4.7 The Contractor shall not depart from any approved document unless the Contractor has first submitted to the Employer an

amended document and obtained the Employer's approval thereof, pursuant to the provisions of this GC Sub-Clause 8.4.

If the Employer requests any change in any already approved document and/or in any document based thereon, the provisions of GC Clause 63.2 shall apply to such request.

9. Copyright

9.1 The copyright in all drawings, documents and other materials containing data and information furnished to the Employer by the Contractor herein shall remain vested in the Contractor or, if they are furnished to the Employer directly or through the Contractor by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

10. Start Date and Completion

10.1 The Contractor shall start the Works and Services within the period specified in the PC. Upon request from the Contractor, the Employer shall confirm in writing the Start Date, after verifying that works and services have started on the Site.

10.2 The Contractor shall attain the required Service Levels and the Completion of the Initial Rectification, Periodic Maintenance and Minor Improvement Works (or of a part where a separate time for Completion of such part is specified in the Contract) within the time schedules included in the PC and the Specifications, or within such extended time to which the Contractor shall be entitled under GC Clause 64 hereof.

11. Contractor's Responsibilities

11.1 The Contractor shall design and carry out the Works and Services (including associated purchases and/or subcontracting) necessary to comply with the requirements established in the Specifications with due care and diligence in accordance with the Contract.

11.2 The Contractor confirms that it has entered into this Contract on the basis of a proper examination of the data relating to the Works and Services required, including any data and tests provided by the Employer, and on the basis of information that the Contractor could have obtained from a visual inspection of the Site and of other data readily available to it relating to the Road as of the date twenty-eight (28) days prior to bid submission. The Contractor acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing the Works and Services.

11.3 The Contractor shall acquire in its name all permits, approvals and/or licenses from all local, state or central government authorities or public service undertakings in the country of the Employer that are necessary for the performance of the Contract, including, without limitation, visas for the Contractor's and Subcontractor's personnel and entry permits for all imported Contractor's Equipment (if any). The Contractor shall also acquire all other permits, approvals and/or licenses that are not the responsibility of the Employer under GC Sub-Clause 14.3 hereof and that are necessary for the performance of the Contract.

11.4 The Contractor shall comply with all laws in force. The laws will include all local, state, central or other laws that affect the performance of the Contract and bind upon the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any and all liabilities, damages, claims, fines, penalties and expenses of whatever nature arising or resulting from the violation of such laws by the Contractor or its personnel, including the Subcontractors and their personnel, but without prejudice to GC Sub-Clause 14.1 hereof.

12. Subcontracting

12.1 The Contractor may subcontract activities listed in the PC. Any other activity under the Contract may be subcontracted only when approved by the Employer. The Contractor may not assign the entire Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations nor relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any Subcontractor, his agents, servants or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents, servants or workmen.

12.2 Notwithstanding GC Sub-Clause 12.1, the Contractor may subcontract under his own responsibility and without prior approval of the Employer the small Works and Services also listed in the PC.

13. Assignment of Contract

13.1 Neither the Employer nor the Contractor shall, without the express prior written consent of the other party (which consent shall not be unreasonably withheld), assign to any third party the Contract or any part thereof, or any right, benefit, obligation or interest therein or there under, except that the Contractor shall be entitled to assign either absolutely or by way of charge any monies due and payable to it or that may become due and payable to it under the Contract.

14. Employer's Responsibilities

14.1 The Employer shall apply due diligence to ensure the accuracy of all information and/or data to be supplied to the Contractor as described in the Specifications, except when otherwise expressly stated in the Contract.

14.2 The Employer shall be responsible for acquiring and providing legal and physical possession of the Site and access thereto, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way, as specified in the corresponding Specifications. The Employer shall give full possession of and accord all rights of access thereto on or before the date(s) specified in the PC.

14.3 The Employer shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located, when such authorities or undertakings require the Employer to obtain them in the Employer's name, are necessary for the execution of the Contract, and are specified in the corresponding Specifications.

**15. Confidential
Information**

- 14.4 If requested by the Contractor, the Employer shall use its endeavours assist the Contractor in obtaining in a timely and expeditious manner permits, approvals and/or licenses necessary for the execution of the Contract from all local, state or central government authorities or public service undertakings that such authorities or undertakings require the Contractor or Subcontractors or the personnel of the Contractor Subcontractors, as the case may be, to obtain.
- 14.5 The Employer shall be responsible for the continued operation of the Road after Completion, in accordance with GC Sub-Clause 28, and shall be responsible for facilitating the Guarantee Test(s) for the Road, in accordance with GC Sub-Clause 20.
- 14.6 All costs involved in the performance of the obligations under this GC Clause 14 shall be the responsibility of the Employer, save those to be incurred by the Contractor with respect to the performance of Guarantee Tests, in accordance with GC Sub-Clause 20.
- 15.1 The Employer and the Contractor shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following termination of the Contract. Notwithstanding the above, the Contractor may furnish to its Subcontractor(s) such documents, data and other information it receives from the Employer to the extent required for the Subcontractor(s) to perform its work under the Contract, in which event the Contractor shall obtain from such Subcontractor(s) an undertaking of confidentiality similar to that imposed on the Contractor under this GC Clause 15.
- 15.2 The Employer shall not use such documents, data and other information received from the Contractor for any purpose other than the operation and maintenance of the Road. Similarly, the Contractor shall not use such documents, data and other information received from the Employer for any purpose other than the design, procurement of Plant and Equipment, construction or such Works and Services as are required for the performance of the Contract.
- 15.3 The obligation of a party under GC Sub-Clauses 15.1 and 15.2 above, however, shall not apply to that information which
- (a) now or hereafter enters the public domain through no fault of that party;
 - (b) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party hereto;
 - (c) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.
- 15.4 The above provisions of this GC Clause 15 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Works

and Services or any part thereof.

15.5 The provisions of this GC Clause 15 shall survive termination, for whatever reason, of the Contract.

C. EXECUTION OF WORKS AND SERVICES

16. Representa- tives

16.1 Engineer-in-charge

The Engineer-in-charge shall represent and act as the Employer at all times during the period of the Contract. All notices, instructions, orders, certificates, approvals and all other communications under the Contract shall be given by the Engineer in charge, except as herein otherwise provided.

16.2 Road Manager

16.2.1 If the Road Manager is not named in the Contract, then the Contractor shall appoint the Road Manager before the Start Date and shall request the Employer in writing to approve the person so appointed. If the Employer makes no objection to the appointment within fourteen (14) days, the Road Manager shall be deemed to have been approved. If the Employer objects to the appointment within fourteen (14) days giving the reason therefore, then the Contractor shall appoint a replacement within fourteen (14) days of such objection, and the foregoing provisions of this GC Sub-Clause 16.2.1 shall apply thereto.

16.2.2 The Road Manager shall represent and act for the Contractor at all times during the period of the Contract and shall give to the Employer all the Contractor's notices, instructions, information and all other communications under the Contract. The Road Manager shall be in charge of the day-to-day management of the works and services to be provided under the contract on behalf of the Contractor, and shall have legal and all other faculties to take all necessary decisions related to the execution of the contract.

All notices, advice information and all other communications given by the Employer to the Contractor under the Contract shall be given to the Road Manager or, in its absence, its deputy, except as herein otherwise provided.

The Contractor shall not revoke the appointment of the Road Manager without the Employer's prior written consent, which shall not be unreasonably withheld. If the Employer consents thereto, the Contractor shall appoint some other person as the Road Manager, pursuant to the procedure set out in GC Sub-Clause 16.2.1.

16.2.3 The Road Manager may, subject to the approval of the Employer (which shall not be unreasonably withheld), at any time delegate to any person any of the powers, functions and

authorities vested in him or her. Any such delegation may be revoked at any time. Any such delegation or revocation shall be subject to a prior notice to the Employer signed by the Road Manager, and shall specify the powers, functions and authorities thereby delegated or revoked.

Any act or exercise by any person of powers, functions and authorities so delegated to him or her in accordance with this GC Sub-Clause 16.2.3 shall be deemed to be an act or exercise by the Road Manager.

16.2.4 From the Start Date until Completion, the Road Manager shall supervise all work and services done at the Site by the Contractor and shall be present at the Site throughout normal working hours except when on leave, sick or absent for reasons connected with the proper performance of the Contract. Whenever the Road Manager is absent from the Site, a suitable person shall be appointed to act as his or her deputy.

16.2.5 The Employer may by notice to the Contractor object to any representative or person employed by the Contractor in the execution of the Contract who, in the reasonable opinion of the Employer, may behave inappropriately, may be incompetent or negligent, or may commit a serious breach of the Site regulations provided under the Specifications. The Employer shall provide evidence of the same, whereupon the Contractor shall remove such person from the Site.

16.2.6 If any representative or person employed by the Contractor is removed in accordance with GC Sub-Clause 16.2.5, the Contractor shall, where required, promptly appoint a replacement.

17. Work Program

17.1 Contractor's Organization

The Contractor shall supply to the Employer a chart showing the proposed organization to be established by the Contractor for carrying out the Works and Services. The chart shall include the identities of the key personnel together with the curricula vitae of such key personnel to be employed as included in the Contractor's Bid. The Contractor shall promptly inform the Employer in writing of any revision or alteration of such an organization chart.

17.2 Program of Performance

Not later than the Start Date, the Contractor shall prepare and supply to the Employer a program of performance of the Contract, made in the form specified in the Specifications and showing the sequence in which it proposes to design and carry out the Works and Services, as well as the date by which the Contractor reasonably requires that the Employer shall have fulfilled its obligations under the Contract so as to enable the Contractor to execute the Contract in accordance with the program and to achieve Completion in accordance with the Contract. The Contractor shall update and revise the program as and when appropriate, but without modification in the Time of Completion given in the PC and any extension granted in accordance with GC Clause 64,

and shall supply all such revisions to the Employer.

17.3 Progress Report

The Contractor shall monitor progress of all the activities specified in the program referred to in GC Sub-Clause 17.2 above, and supply a progress report to the Employer every month together with his Monthly Statement. The progress report shall be in a form acceptable to the Employer in accordance with the Specifications.

17.4 Progress of Execution

If at any time the Contractor's actual progress falls behind the program referred to in GC Sub-Clause 17.2, or it becomes apparent that it will so fall behind, the Contractor shall prepare and supply to the Employer a revised program, taking into account the prevailing circumstances, and shall notify the Employer of the steps being taken to expedite progress so as to attain Completion of the Works and Execution of Services activities within the Time for Completion under GC Sub-Clause 10.2, any extension thereof entitled under GC Sub-Clause 64, or any extended period as may otherwise be agreed upon between the Employer and the Contractor.

17.5 Work Procedures

The Contract shall be executed in accordance with the Contract Documents and the procedures given in the Specifications.

18. Execution of Works

18.1 Setting Out/Supervision/Labor

18.1.1 Bench Mark. The Contractor shall be responsible for the true and proper setting-out of the Works in relation to bench marks, reference marks and lines provided to it in writing by or on behalf of the Employer.

If, at any time during the progress of execution of the Works, any error shall appear in the position, level or alignment of the Works, the Contractor shall forthwith notify the Employer of such error and, at its own expense, immediately rectify such error to the reasonable satisfaction of the Employer. If such error is based on incorrect data provided in writing by or on behalf of the Employer, the expense of rectifying the same shall be borne by the Employer.

18.1.2 Contractor's Supervision. The Contractor shall give or provide all necessary supervision during the execution of the Works, and the Road Manager or its deputy shall be on the Site to provide full-time supervision of the execution. The Contractor shall provide and employ only technical personnel who are skilled and experienced in their respective callings and supervisory staff who are competent to adequately supervise the work at hand.

18.2 Contractor's Equipment

18.2.1 All Contractor's Equipment brought by the Contractor onto the Site shall be deemed to be intended to be used exclusively for the execution of the Contract. The Contractor shall not remove

the same from the Site without approval of the Employer.

18.2.2 Unless otherwise specified in the Contract, upon completion of the Works and Services, the Contractor shall remove from the Site all Equipment brought by the Contractor onto the Site and any surplus materials remaining thereon.

18.2.3 The Employer will, if requested, use its best endeavours to assist the Contractor in obtaining any local, state or central government permission required by the Contractor for the export of the Contractor's Equipment imported by the Contractor for use in the execution of the Contract that is no longer required for the execution of the Contract.

18.3 Site Regulations and Safety

The Employer and the Contractor shall establish Site regulations setting out the rules to be observed in the execution of the Contract at the Site and shall comply therewith. The Contractor shall prepare and submit to the Employer, proposed Site regulations for the Employer's approval, which approval shall not be unreasonably withheld.

Such Site regulations shall include, but shall not be limited to, rules in respect of security, safety, traffic control, accident response, gate control, sanitation, medical care, and fire prevention.

18.4 Access to site for Other Contractors

18.4.1 The Contractor shall, upon written request from the Employer, promptly give site access to other contractors employed by the Employer on or near the site.

18.5 Site Clearance

18.5.1 *Site Clearance in Course of Execution:* In the course of carrying out the Contract, the Contractor shall keep the Site reasonably free from all unnecessary obstruction, store or remove any surplus materials, clear away any wreckage, rubbish or temporary works from the Site, and remove any Contractor's Equipment no longer required for execution of the Contract.

18.5.2 *Clearance of Site after Completion:* After Completion of all parts of the Works and Services, the Contractor shall clear away and remove all wreckage, rubbish and debris of any kind from the Site, and shall leave the Site and the Road clean and safe.

18.6 Watching and Lighting

The Contractor shall provide and maintain at its own expense all lighting, fencing, and watching when and where necessary for the proper execution and the protection of the Works and Services, for the protection of his own installations and his equipment, for the safety of the owners and occupiers of adjacent property and for the safety of the public.

18.7 Access to the Site

The Contractor shall allow the Employer and any person authorized by the Employer 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.

18.8 Management Meetings

18.8.1 Either the Employer/ Engineer-in-charge 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 by either the Contractor or the Employer.

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

19. Staff and Labor

19.1 The Contractor shall employ the key personnel named in the Contractor's Bid, to carry out the functions stated in the Specifications or other personnel approved by the Employer. The Employer will 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 Contractor's Bid.

19.2 Labor

- (a) The Contractor shall provide and employ on the Site for the execution of the Works and Services such skilled, semi-skilled and unskilled labor as is necessary for the proper and timely execution of the Contract. The Contractor is encouraged to use local labor that has the necessary skills.
- (b) Unless otherwise provided in the Contract, the Contractor shall be responsible for the recruitment, transportation, accommodation and catering of all labor, local or expatriate, required for the execution of the Contract and for all payments in connection therewith.
- (c) The Contractor shall be responsible for obtaining all necessary permit(s) and/or visa(s) from the appropriate authorities for the entry of all labor and personnel to be employed on the Site into the country where the Site is located.
- (d) The Contractor shall at its own expense provide the means of repatriation to all of its and its Subcontractor's personnel employed on the Contract at the Site to their various home countries. It shall also provide suitable temporary maintenance of all such persons from the cessation of their employment on the Contract to the date programmed for their departure. In the event that the Contractor defaults in providing such means of transportation and temporary maintenance, the Employer may provide the same to such personnel and recover the cost of doing so from the Contractor.
- (e) The Contractor shall at all times during the progress of the Contract use its best endeavors to prevent any unlawful, riotous or disorderly

conduct or behavior by or amongst its employees and the labor of its Subcontractors.

- (f) The Contractor shall provide lodging, medical assistance, alimentation and sanitary installations for the employees living in the contractor's base camps to comply with the Social, Sanitary and Health Conditions of Labor requirements established in the Specifications.
- (g) The Contractor shall, in all dealings with its labor and the labor of its Subcontractors currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labor.
- (h) HIV-AIDS Prevention. If so indicated in the PC, the Contractor shall conduct an HIV-AIDS awareness programme via an approved service provider or specialized NGO, and shall undertake such other measures as are specified in this Contract to reduce the risk of the transfer of the HIV virus between and among the Contractor's Personnel and the local community, to promote early diagnosis and to assist affected individuals. The Contractor shall throughout the contract: (i) conduct Information, Education and Consultation Communication (IEC) campaigns, at least every other month, addressed to all the Site staff and labor (including all the Contractor's employees, all Sub-Contractors and Consultants' employees working on the Site, and truck drivers and crew making deliveries to the Site for Works and Services executed under the contract, and to the immediate local communities, concerning the risks, dangers and impact, and appropriate avoidance behavior with respect to of Sexually Transmitted Diseases (STD)—or Sexually Transmitted Infections (STI) in general and HIV/AIDS in particular; (ii) provide male or female condoms for all Site staff and labor as appropriate; and (iii) provide for STI and HIV/AIDS screening, diagnosis, counseling and referral to a dedicated national STI and HIV/AIDS program, (unless otherwise agreed) of all Site staff and labor.
- (i) If so indicated in the PC, the Contractor shall include in the program to be submitted for the execution of the Works and Services under Sub-Clause 17 a program for Site staff and labour and their families in respect of Sexually Transmitted Infections (STI) and Sexually Transmitted Diseases (STD) including HIV/AIDS. The STI, STD and HIV/AIDS alleviation program shall indicate when, how and at what cost the Contractor plans to satisfy the requirements of this Sub-Clause and the related specification. For each component, the program shall detail the resources to be provided or utilized and any related sub-contracting proposed. The program shall also include provision of a detailed cost estimate with supporting documentation. Payment to the Contractor for preparation and implementation this program shall not exceed the Provisional Sum dedicated for this purpose.

19.3 Removal of staff

If the Employer asks the Contractor to remove a person who is a

member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

19.4 Work at Night and on Holidays

19.4.1 Unless otherwise provided in the Contract, if and when the Contractor considers it necessary to carry out work at night or on public holidays so as to meet the Service Levels and the Time for Completion, and requests the Employer's consent thereto (if such consent is needed), the Employer shall not unreasonably withhold such consent.

20. Test and Inspection

20.1 The Contractor shall at its own expense carry out on the Site all such tests and/or inspections as are specified in the Specifications, and in accordance with the procedures described in the Specifications.

20.2 The Employer their designated representatives shall be entitled to attend the aforesaid test and/or inspection.

20.3 For tests to be carried out on the initiative of the Contractor, whenever the Contractor is ready to carry out any such test and/or inspection, he shall give a reasonable advance notice of such test and/or inspection and of the place and time thereof to the Employer. The Contractor shall provide the Employer with a signed report of the results of any such test and/or inspection.

20.4 If the Employer fails to attend a scheduled test and/or inspection, or if it is agreed between the parties that such persons shall not attend, then the Contractor may proceed with the test and/or inspection in the absence of such persons, and may provide the Employer with a signed report of the results thereof.

20.5 The Employer may require the Contractor to carry out any test and/or inspection not required by the Contract, provided that the Contractor's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impede the progress of the works and/or the Contractor's performance of its other obligations under the Contract, due allowance will be made in respect of the Time for Completion and the other obligations so affected.

20.6 If Initial Rectification Works, Periodic Maintenance Works, Minor Improvement Works or Emergency Works fail to pass any test and/or inspection, the Contractor shall either rectify or replace such works and shall repeat the test and/or inspection upon giving a notice under GC Sub-Clause 20.3.

20.7 If any dispute or difference of opinion shall arise between the parties in connection with or arising out of the test and/or inspection of the Works and Services, or part of them, that cannot be settled between the parties within a reasonable period of time, it may be referred to the DRE for determination in accordance with GC Sub-Clause 6.1.

20.8 The Contractor agrees that neither the execution of a test and/or inspection of the Works and Services or any part of them, nor the attendance by the Employer, nor the issue of any test certificate pursuant to GC Sub-Clause 20.4, shall release the Contractor from any

other responsibilities under the Contract.

20.9 No part or foundations shall be covered up on the Site without the Contractor carrying out any test and/or inspection required under the Contract. The Contractor shall give a reasonable notice to the Employer whenever any such part or foundations are ready or about to be ready for test and/or inspection; such test and/or inspection and notice thereof shall be subject to the requirements of the Contract.

20.10 The Contractor shall uncover any part of the Works or foundations, or shall make openings in or through the same as the Employer may from time to time require at the Site, and shall reinstate and make good such part or parts.

If any parts of the Works or foundations have been covered up at the Site after compliance with the requirement of GC Sub-Clause 20.9 and are found to be executed in accordance with the Contract, the expenses of uncovering, making openings in or through, reinstating, and making good the same shall be borne by the Employer, and the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been delayed or impeded in the performance of any of its obligations under the Contract.

21. Periodic Maintenance Works

21.1 If so indicated in the PC, Periodic Maintenance Works shall be carried out explicitly in accordance with the Specifications and as specified in the bidding documents and in the Contractor's Bid. Input quantities for Periodic Maintenance Works are estimated by the Contractor to achieve the performance criteria for Periodic Maintenance Works given in the Specifications. The Periodic Maintenance Works are offered by the Contractor at a Lump-Sum price.

22. Minor Improvement Works

22.1 If so indicated in the PC, Minor Improvement Works are required and will consist of a set of interventions that add new characteristics to the roads in response to new traffic and safety or other conditions. Minor Improvement Works quantities are offered at unit prices included in the Schedule of Prices.

22.2 The execution of Minor Improvement Works shall be requested by the Engineer-in-charge, who will issue a Work Order defining the requested works to be carried out by the Contractor, based on the activities priced in the Schedule of Prices. The Work order shall specify the activities to be carried out and the corresponding price. The Employer shall confirm his acceptance by signing the Work Order.

23. Ordinary Maintenance Services

23.1 Ordinary Maintenance Services are those activities necessary for keeping the Road in compliance with the Performance Standards pursuant to GC Clause 24. Ordinary Maintenance Services shall include all activities required to achieve and keep the Road Performance Standards and Service Levels. These Services will be remunerated by Lump-Sum amount for the period of the contract paid in fixed monthly payments (year to year basis) during the entire

Contract period.

24. Performance Standards

24.1 The Contractor shall carry out the Ordinary Maintenance Services to achieve and keep the Road complying with the Service Levels defined in the Specifications. He will carry out all Works in accordance with the performance standards indicated in the Specifications.

25. Contractor's Self-Control of Quality and Safety

25.1 The Contractor shall, throughout the execution and completion of the Works and Services, maintain a System which shall ensure that the work methods and procedures are adequate and safe at all times and do not pose any avoidable risks and dangers to the health, safety and property of the workers and agents employed by him or any of his subcontractors, of road users, of persons living in the vicinity of the roads under contract, and any other person who happens to be on or along the roads under contract.

25.2 Unless specified otherwise in the PC, the Contractor shall establish, within his own organizational structure, a specific Unit staffed with qualified personnel, whose task is to verify continuously the degree of compliance by the Contractor with the required Service Levels. That

Unit will also be responsible for the generation and presentation of the information needed by the contractor for the documentation required as defined in the Specifications. The Unit will be responsible for maintaining a detailed and complete knowledge of the condition of the Road and to provide to the Road Manager all the information needed in order to efficiently manage and maintain the Road. The Unit shall also carry out, in close collaboration with the Employer, the verifications on the Service Levels.

25.3 The Contractor's Self-Control Unit mentioned in GC Sub-Clause 25.2 shall report the level of compliance with the required Service Levels in the standard format presented in the Specifications.

26. Environmental and Safety Requirements

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

- (a) have full regard for the safety of all persons employed by him and his subcontractors and keep the Site (so far as the same is under his control) in an orderly state appropriate to the avoidance of danger to such persons;
- (b) provide and maintain at his own cost all guardrails, fencing, warning signs and watching, when and where necessary or required by Sub-Clause 18.3 of the Contract or by any duly constituted authority, for the protection of the Works and Services or for the safety and convenience of his workers and road users, the public or others; and

- (c) take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.

27. Work Orders for Minor Improvement Works and Emergency Works

- 27.1 Emergency Works shall be executed by the Contractor on the basis of Work Orders issued by the Employer.
- 27.2 Work Orders shall be issued in writing and shall include the date on which the Work Order was issued and the signature of the Employer. Two copies of the Work Order shall be transmitted by the Employer to the Contractor, who shall immediately countersign one copy, including the date of acceptance, and return it to the Employer.
- 27.3 If the Contractor has any objection to a Work Order, the Road Manager shall notify the Employer of his reasons for such objection within ten (10) days) of the date of issuing the Work Order. Within five (5) days of the Road Manager's objection, the Employer shall cancel, modify or confirm the Work Order in writing.

28. Taking Over Procedures

- 28.1 When the whole of the Works and Services have been substantially completed and have satisfactorily passed any Tests on Completion prescribed by the Contract, the Contractor may give a notice to that effect to the Employer, accompanied by a written undertaking to finish with due expedition any outstanding work during the Defects Liability Period. Such notice and undertaking shall be deemed to be a request by the Contractor for the Employer to issue a Taking-Over Certificate in respect of the Works and Services. The Employer shall, within twenty-one (21) days of the date of delivery of such notice, either issue to the Contractor a Taking-Over Certificate, stating the date on which the Works and Services were substantially completed in accordance with the Contract, or give instructions in writing to the Contractor specifying all the conditions to be complied with and all the work which is required to be done by the Contractor before the issue of such Certificate. The Employer shall also notify the Contractor of any defects in the Works and Services affecting substantial completion that may appear after such instructions and before completion of Taking-Over Certificate within twenty-one (21) days of completion, to the satisfaction of the Employer, of the Works and Services so specified and remedying any defects so notified.
- 28.2 Similarly, in accordance with the procedure set out in Sub-Clause 28.1, the Contractor may request and the Employer shall issue a Taking-Over Certificate in respect of:
 - (a) any Section in respect of which a separate Time for Completion is provided in the contract,
 - (b) any substantial part of the Works and Services which has been both completed to the satisfaction of the Employer and, otherwise than as provided for in the Contract, occupied or used by the Employer, or

- (c) any part of the Works and Services which the Employer has elected to occupy or use prior to completion (where such prior occupation or use is not provided for in the Contract or has not been agreed by the Contractor as a temporary measure).

29. Emergency Works

29.1 The need for execution of Emergency Works is jointly identified by the Employer and the Contractor and the starting of the execution of Emergency Works shall always require a Work Order issued by the Employer.

29.2 The execution of Emergency Works shall be requested by the Contractor based on losses or damages occurred as a result of natural phenomena (such as strong storms, flooding or earthquakes) with imponderable consequences, or on the possibility of damages or losses occurring, or the safety of individuals, works, services or equipment being at risk as result of the natural phenomena. In order to characterize the Emergency Works, the Contractor shall forward a Technical Report to the Employer requesting the execution of Emergency Works and characterizing the situation. On the basis of the said report, and of his own judgment of the situation, the Employer may issue a Work Order to the Contractor.

29.3 The Employer or even Government authorities may declare an Emergency Situation on the basis of local legislation. In those cases, the Employer may issue a Work Order for Emergency Works to the Contractor even without a request by the Contractor.

29.4

If the Contractor is unable or unwilling to do such work immediately, the Employer may do or cause such work to be done as the Employer may determine necessary in order to prevent damage to the Road. In such event the Employer shall, as soon as practicable after the occurrence of any such emergency, notify the Contractor in writing of such emergency, the work done and the reasons therefore.

30. Quality of materials used by Contractor

30.1 The quality of materials used by the Contractor for the execution of the Contract shall be in compliance with the requirements of the Specifications. If the Contractor is of the opinion that materials of higher quality than those stated in the Specifications need to be used in order to ensure compliance with the Contract, he shall use such better materials, without being entitled to higher prices or remunerations.

30.2 Under no circumstances may the Contractor make any claim based on the insufficient quality of materials used by him, even if the material used was authorized by the Employer.

30.3 The Contractor shall carry out at his own cost the laboratory and other

31. Signalling and demarcation of work zones and bypasses

tests that he needs to verify if materials to be used comply with the Specifications, and shall keep records of such tests. If requested by the Employer, the Contractor shall hand over the results of the tests.

31.1 To ensure the safety of road users, including non-motorized road users and pedestrians, the Contractor is responsible to install and maintain at his cost the adequate signalling and demarcation of work sites, which in addition must comply with the applicable legislation.

31.2 If the execution of services and works under the contract is likely to interfere with traffic, the Contractor shall take at his cost the measures necessary to limit such interference to the strict minimum, or any danger to the workers or others. For that purpose, he is entitled to install, within the right-of-way of the road, temporary bypasses, structures or other modifications to be used by traffic during the execution of works and services. The Contractor shall notify the Employer of any such temporary installations.

31.3 If the execution of Works and Services by the Contractor makes it necessary to temporarily close a road section, and a traffic detour has to be implemented over other public roads or streets, the Contractor shall be responsible for the adequate signalling of the detour, under the same conditions as stated in GC Sub-Clause 31.1.

31.4 The Contractor shall inform the local authorities and the local police about such activities to be carried out by him which may cause any significant interruptions or changes to the normal traffic patterns. Such information shall be made in writing and at least seven (7) days before the beginning of such activities. Upon request from the Contractor, the Employer shall assist the Contractor in the coordination with the local authorities and the local police.

D. ALLOCATION OF RISKS

32. Employer's Risks

32.1 From the Start Date until the Defects Correction Certificate has been issued, the following are Employer's risks insofar as they directly affect the execution of the Works and Services included in this Contract:

- (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies;
- (b) rebellion, revolution, insurrection, military or usurped power, or civil war;

- (c) riot, commotion or disorder, unless solely restricted to employees of the Contractor or of his Subcontractors and arising from the conduct of the Works and Services;
 - (d) loss or damage due to the use or occupation by the Employer of any unfinished Section or part of the Works, except as may be provided for in the Contract;
 - (e) any operation of the forces of nature against which an experienced contractor could not reasonably have been expected to take precautions.
- 33. Contractor's Risks** 33.1 The Employer carries the risks which this Contract states are Employer's risks, and the remaining risks are the Contractor's risks.
- 34. Loss of or Damage to Property; Accident or Injury to Workers; Indemnification** 34.1 Subject to GC Sub-Clause 34.3, the Contractor shall indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, in respect of the death or injury of any person or loss of or damage to any property arising in connection with the execution and by reason of the negligence of the Contractor or its Subcontractors, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Employer, its contractors, employees, officers or agents.
- 34.2 If any proceedings are brought or any claim is made against the Employer that might subject the Contractor to liability under GC Sub-Clause 34.1, the Employer shall promptly give the Contractor a notice thereof and the Contractor may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.
- If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defence of any such proceedings or claim.
- The Employer shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.
- 34.3 The Employer shall indemnify and hold harmless the Contractor and its employees, officers and Subcontractors from any liability for loss of or damage to property of the Employer, other than the Works not yet taken over, that is caused by fire, explosion or any other perils, in excess of the amount recoverable from insurances procured under GC Clause 35,

provided that such fire, explosion or other perils were not caused by any act or failure of the Contractor.

- 34.4 The party entitled to the benefit of an indemnity under this GC Clause 34 shall take all reasonable measures to mitigate any loss or damage which has occurred. If the party fails to take such measures, the other party's liabilities shall be correspondingly reduced.

35. Insurance

- 35.1 To the extent specified in the PC, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified in the said PC. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, who should not unreasonably withhold such approval.

(a) *Loss of or damage to the Plant and Materials*

Covering loss or damage occurring prior to Completion.

(b) *Third Party Liability Insurance*

Covering bodily injury or death suffered by third parties (including the Employer's personnel) and loss of or damage to property occurring in connection with Works and Services.

(c) *Automobile Liability Insurance*

Covering use of all vehicles used by the Contractor or its Subcontractors (whether or not owned by them) in connection with the execution of the Contract.

(d) *Workers' Compensation*

In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.

(e) *Employer's Liability*

In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.

(f) *Other Insurances*

Such other insurances as may be specifically agreed upon by the parties.

- 35.2 The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GC Sub-Clause 35.1, except for the Third Party Liability, Workers' Compensation and Employer's Liability Insurances, and the Contractor's Subcontractors shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GC Sub-Clause 35.1 except for the Cargo Insurance During Transport, Workers' Compensation and Employer's Liability Insurances. All insurer's rights of subrogation against such co-insured for losses or claims arising out of the performance of the Contract shall be waived under such policies.

- 35.3 The Contractor shall deliver to the Employer certificates of insurance (or copies of the insurance policies) as evidence that the required policies

are in full force and effect. The certificates shall provide that no less than twenty-one (21) days' notice shall be given to the Employer by insurers prior to cancellation or material modification of a policy.

- 35.4 The Contractor shall ensure that, where applicable, its Subcontractor(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for work executed by them under the Contract, unless such Subcontractors are covered by the policies taken out by the Contractor.
- 35.5 If the Contractor fails to take out and/or maintain in effect the insurances referred to in GC Sub-Clause 35.1, the Employer may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Contractor under the Contract any premium that the Employer shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Contractor.
- 35.6 Unless otherwise provided in the Contract, the Contractor shall prepare and conduct all and any claims made under the policies effected by it pursuant to this GC Clause 35, and all monies payable by any insurers shall be paid to the Contractor. The Employer shall give to the Contractor all such reasonable assistance as may be required by the Contractor. With respect to insurance claims in which the Employer's interest is involved, the Contractor shall not give any release or make any compromise with the insurer without the prior written consent of the Employer. With respect to insurance claims in which the Contractor's interest is involved, the Employer shall not give any release or make any compromise with the insurer without the prior written consent of the Contractor.

**36. Unforeseen
Conditions**

- 36.1 If, during the execution of the Contract, the Contractor shall encounter on the Site any physical conditions (other than climatic conditions) or artificial obstructions that could not have been reasonably foreseen prior to the date of the Contract Agreement by an experienced contractor on the basis of reasonable examination of the data relating to the Road (including any data and tests provided by the Employer), and on the basis of information that it could have obtained from a visual inspection of the Site or other data readily available to it relating to the Road, and if the Contractor determines that it will in consequence of such conditions or obstructions incur additional cost and expense or require additional time to perform its obligations under the Contract that would not have been required if such physical conditions or artificial obstructions had not been encountered, the Contractor shall promptly, and before performing additional work or using additional Plant and Equipment or Contractor's Equipment, notify the Employer in writing of
- (a) the physical conditions or artificial obstructions on the Site that could not have been reasonably foreseen;
 - (b) the additional work and/or Plant and Equipment and/or Contractor's Equipment required, including the steps which the Contractor will or proposes to take to overcome such conditions or

obstructions;

- (c) the extent of the anticipated delay;
- (d) the additional cost and expense that the Contractor is likely to incur.

On receiving any notice from the Contractor under this GC Sub-Clause 36.1, the Employer decide upon the actions to be taken to overcome the physical conditions or artificial obstructions encountered. Following such consultations, the Employer shall instruct the Contractor of the actions to be taken.

36.2 Any reasonable additional cost and expense incurred by the Contractor in following the instructions from the Employer to overcome such physical conditions or artificial obstructions referred to in GC Sub-Clause 36.1 shall be paid by the Employer to the Contractor as an addition to the Contract Price.

36.3 If the Contractor is delayed or impeded in the performance of the Contract because of any such physical conditions or artificial obstructions referred to in GC Sub-Clause 36.1, the Time for Completion shall be extended in accordance with GC Clause 64.

37. Change in Laws and Regulations

37.1 If, after the date twenty-eight (28) days prior to the date of Bid submission, in the country where the Site is located, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated or changed (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the costs and expenses of the Contractor and/or the Time for Completion, the Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced costs shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with the PC.

38. Force Majeure

38.1 "Force Majeure" shall mean any event beyond the reasonable control of the Employer or of the Contractor, as the case may be, insofar as they directly affect the execution of the Services and Works included in this Contract and which is unavoidable notwithstanding the reasonable care of the party affected, and shall include, without limitation, the following:

- (a) war, hostilities or warlike operations (whether a state of war be declared or not), invasion, act of foreign enemy and civil war;
- (b) rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts;
- (c) confiscation, nationalization, mobilization, commandeering, requisition by or under the order of any government or de jure or

de facto authority or ruler or any other act or failure to act of any local state or national government authority;

- (d) strike, sabotage, lockout, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage or restriction of power supply, epidemics, quarantine and plague;
- (e) earthquake, landslide, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or other inclement weather condition, nuclear and pressure waves or other natural or physical disaster;
- (f) shortage of labor, materials or utilities where caused by circumstances that are themselves Force Majeure.

38.2 If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event.

38.3 The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance with GC Clause 64.

38.4 The party or parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof upon its or their performance of the Contract and to fulfill its or their obligations under the Contract, but without prejudice to either party's right to terminate the Contract under GC Sub-Clause 38.6.

38.5 No delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall

- (a) constitute a default or breach of the Contract;
- (b) give rise to any claim for damages or additional cost or expense occasioned thereby;

if and to the extent that such delay or non performance is caused by the occurrence of an event of Force Majeure.

38.6 If the performance of the Contract is substantially prevented, hindered or delayed for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of one or more events of Force Majeure during the currency of the Contract, the parties will attempt to develop a mutually satisfactory solution, failing which either party may terminate the Contract by giving a notice to the other, but without prejudice to either party's right to terminate the Contract under GC Clause 59.

38.7 In the event of termination pursuant to GC Sub-Clause 38.6, the rights and obligations of the Employer and the Contractor shall be as specified in GC Sub-Clauses 59.1.2 and 59.1.3.

38.8 Notwithstanding GC Sub-Clause 38.5, Force Majeure shall not apply to

any obligation of the Employer to make payments to the Contractor herein.

E. GUARANTEES AND LIABILITIES

39. Completion Time Guarantee and Liability

39.1 The Contractor guarantees that it shall attain specified Service Levels and the Completion of , Periodic Maintenance (or a part for which a separate time for completion is specified in the PC) within the time schedules specified in the PC and the Specifications, pursuant to GC Sub-Clause 10.2, or within such extended time to which the Contractor shall be entitled under GC Clause 64 hereof.

39.2 If the Contractor fails to attain specified Service Levels within the contractually agreed time schedules as given in the Specifications, the contractor shall receive reduced payments for Ordinary Maintenance Services, for such default and not as a penalty, in accordance with the Specifications.

39.3 If the Contractor fails to attain the Completion of Periodic Maintenance (or a part for which a separate time for completion is specified in the PC clause 39.1) within the contractually required time schedules, the contractor shall pay to the Employer liquidated damages for such default and not as a penalty, in accordance with the PC and the Specifications.

39.4 The payment reductions and liquidated damages indicated in GC 39.2 and 39.3 shall be the only monies due from the Contractor for such defaults, and they will be applied for every day of delay, in accordance with the PC and the Specifications. The aggregate amount of such liquidated damages and payment reductions shall in no event exceed the “aggregate liability” in accordance with GC Clause 42. The payment or deduction of such sums shall not relieve the Contractor from his obligation to complete the Works and Services, or from any other of his obligations and liabilities under the Contract.

40. Performance Guarantee and Liability

40.1 The Contractor guarantees that during the Performance Tests or Inspections for Periodic Maintenance and for Emergency Works, the Road and all parts thereof shall attain the Performance Standards specified in the corresponding Specifications.

40.2 If, for reasons attributable to the Contractor, the minimum level of the Performance Standards specified in the corresponding Specifications are not met either in whole or in part, the Contractor shall at its cost and expense make such changes, modifications and/or additions to the Road or any part thereof as may be necessary to meet at least the minimum level of such Standards. The Contractor shall notify the Employer upon completion of the necessary changes, modifications and/or additions, and shall request the Employer to repeat the Test or Inspection until the minimum level of the Standards has been met. If the Contractor eventually fails to meet the minimum level of Performance Standard, the

Employer may consider termination of the Contract, pursuant to GC Sub-Clause 59.2.2.

- 40.3 If, for reasons attributable to the Contractor, the Performance Standards relating to Periodic Maintenance specified in the corresponding Specifications are not attained either in whole or in part, the Contractor shall, at the Contractor's choice, either
- (a) make such changes, modifications and/or additions to the Works and Services or any part thereof that are necessary to attain the Performance Standards at its cost and expense, and shall request the Employer to repeat the Test, or
 - (b) pay liquidated damages to the Employer in respect of the Works and Services which fail to meet the Performance Standards in accordance with the provisions in the corresponding Specifications.
- 40.4 The payment of liquidated damages under GC Sub-Clause 40.3, up to the limitation of liability specified in the PC, shall completely satisfy the Contractor's guarantees under GC Sub-Clause 40.1, and the Contractor shall have no further liability whatsoever to the Employer in respect thereof. Upon the payment of such liquidated damages by the Contractor, the Employer shall issue the Certificate of Completion for the Works or any part thereof in respect of which the liquidated damages have been so paid.

41. Defect Liability

- 41.1 The Contractor warrants that the Works and Services or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the Works and Services executed.
- 41.2 The Defect Liability Period shall be twelve (12) months from the date of Completion of the Contract, or eighteen (18) months from the date of Certificate of Completion of the Works (or any part thereof), whichever occurs first, unless specified otherwise in the PC.
- If during the Defect Liability Period any defect should be found in the design, engineering, materials and workmanship of the Works and Services executed by the Contractor, the Contractor shall promptly, in consultation and agreement with the Employer regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good (as the Contractor shall, at its discretion, determine) such defect as well as any damage to the Road caused by such defect. The Contractor shall not be responsible for the repair, replacement or making good of any defect of any damage to the Road arising out of or resulting from improper operation or maintenance of the Road by the Employer after taking over.
- 41.3 The Contractor's obligations under this GC Clause 41 shall not apply to
- (a) any works or materials that have a normal life shorter than the Defect Liability Period stated herein;
 - (b) any designs, specifications or other data designed, supplied or specified by or on behalf of the Employer or any matters for which the Contractor has disclaimed responsibility herein;

(c) any other materials supplied or any other work executed by or on behalf of the Employer, except for the work executed by the Employer under GC Sub-Clause 41.6.

41.4 The Employer shall give the Contractor a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Employer shall afford all reasonable opportunity for the Contractor to inspect any such defect.

41.5 The Employer shall afford the Contractor all necessary access to the Site to enable the Contractor to perform its obligations under this GC Clause 41. The Contractor may remove from the Site any Plant and Equipment that are defective if the nature of the defect is such that repairs cannot be expeditiously carried out at the Site.

41.6 If the Contractor fails to commence the work necessary to remedy such defect or any damage to the Road caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Employer may, following notice to the Contractor, proceed to do such work, and the reasonable costs incurred by the Employer in connection therewith shall be paid to the Employer by the Contractor or may be deducted by the Employer from any monies due the Contractor or claimed under the Performance Security.

41.7 If the Road or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period of the Road or such part, as the case may be, shall be extended by a period equal to the period during which the Road or such part cannot be used because of any of the aforesaid reasons.

41.8 Except as provided in GC Clauses 40 and 41, the Contractor shall be under no liability whatsoever and howsoever arising, and whether under the Contract or at law, in respect of defects in the Road or any part thereof, the Plant and Equipment, design or engineering or work executed that appear after Completion of the Works and Services, except where such defects are the result of the gross negligence, fraud, criminal or wilful action of the Contractor.

42. Limitation of Liability

42.1 Except in cases of criminal negligence or wilful misconduct,

(a) the Contractor shall not be liable to the Employer, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Contractor to pay liquidated damages to the Employer and

(b) the aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the limit specified in the PC.

**43. Liability for
Damages
through
Traffic
Accidents
and Traffic
Interruptions**

- 43.1 The Contractor cannot be held liable for losses or damages of any kind arising out of traffic accidents on the roads included in the Contract, unless those traffic accidents have been caused directly by potholes or other major defects of the Road covered by the Contract he failed to repair in a timely manner, criminal acts, wilful misconduct or gross negligence of the Contractor.
- 43.2 Under no circumstances can the Contractor be held liable for losses or damages of any kind and to anyone arising out of interruptions of traffic or traffic delays on the road included in the Contract, including any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs.

F. PAYMENT

**44. Contract
Price**

- 44.1 The Contract Price shall be as specified in the Form of Contract Agreement to be paid in the currencies indicated in the PC.
- 44.2 Unless indicated otherwise in the PC, and except in the event of a Change as provided for in the Contract, the Contract Price shall be:
- (a) For Ordinary Maintenance Services, a firm lump sum yearwise of agreed rate to be paid in monthly instalments;
 - (b) For Periodic Maintenance Works, a firm lump sum, to be paid according to work progress;
 - (c) For Emergency Works, the Provisional Sum reserved for this purpose.
- 44.3 The Contractor shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price, which shall, except as otherwise provided for in the Contract, cover all its obligations under the Contract.

**45. Advance
Payment**

- 45.1 The Employer shall make advance payment to the Contractor of the amounts and by the date stated in the PC, 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 shall be progressively reduced by the amounts repaid by the Contractor. Interest will not be charged on the advance payment.

- 45.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for the 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 Employer.
- 45.3 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 and Services on a payment basis as indicated in the PC.

46. Schedule of Prices

- 46.1 The Schedule of Prices shall contain items for Groups of Activities which include the provision of Services (measured by performance standards) and Works (measured by unit of outputs or of products). The Schedule of Prices for Works shall include, where applicable, the lump-sum and unit price for Periodic Maintenance Works, and unit rates for provisional sum for Emergency/Day work.
- 46.2 Ordinary Maintenance Services shall be measured and billed separately and will be remunerated by lump-sum amount for the period of the contract, and paid in fixed monthly payments during the entire Contract period. The values for remuneration of the Ordinary Maintenance Services are those stated in the Schedule of Prices.
- 46.3 Periodic Maintenance Works will be remunerated by Lump-Sum amount for the period of the contract, however, indicating the quantities of measurable outputs to be executed in order that the Road achieves the performance standards specified in the bidding documents. Payments will be made in accordance with the execution of those measured outputs paid by executed works output. The prices shall be those stated in the Schedule of Prices.
- 46.4 Each Emergency Work Order issued by the Employer will be pursuant to GC Clauses 29 and 61 and will be prepared based on the Specifications and on the unit prices included in the Schedule of Prices or on the basis of input based method and on the Current SOR rate just before the execution of work.
- 46.5 The Schedule of Prices is used to calculate the Contract Price. The

amounts for Ordinary Maintenance Services, Initial Rectification and Periodic Maintenance Works are the Lump-Sum prices offered in the Contractor's Bid. The Minor Improvement Works amount included in the Contract is an estimate on the basis of the unit prices included in the Contractor's Bid. The Provisional Sum included in the Contract Price is an estimate for use when authorized by the Employer for Emergency Works and contingencies.

- 47. Measurement**
- 47.1 Ordinary Maintenance Services will not be measured in volume; however its payment will be affected by compliance with the Performance Standards pursuant to GC Clause 24. Ordinary Maintenance Services shall be billed in fixed monthly amounts as per the Schedule of Prices Lump-Sum amount for Ordinary Maintenance Services, beginning from the Start Date. Payments will be made with Reductions if the Performance Standards are not achieved, as defined in the Specifications. The Reductions for non-compliance with the Performance Standards will be applied on a daily basis for the period under which the Road does not achieve the Performance Standards, in accordance with the methodology specified in the Specifications.
- 47.2 Periodic Maintenance Works will be measured on the basis indicated in the PC, based on the quantity of actual work outputs as defined in the Specifications, concluded by the Contractor and approved by the Employer. The prices shall be those stated in the Schedule of Prices.
- 47.3 Emergency Works will not be measured and shall be billed in accordance with the Schedule of Payments agreed for each specific Emergency Work as approved by the Employer.
- 48. Price Adjustments**
- 48.1 Contract payments shall be adjusted for increase or decrease in rates and prices in accordance with the principles and procedures and as per formula given in the Particular Conditions.
- 48.2 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 rates and prices included in the Contract shall be deemed to include amounts to cover the contingency of such other rise and fall in costs.
- 49. Monthly Statements and Payments**
- 49.1 The Contractor shall submit to the Employer monthly statements in the format indicated in the Specifications, of the estimated value of Ordinary Maintenance Services, Periodic Maintenance Works, and Emergency Works in separated items covering the Works and Services for the corresponding month.
- 49.2 The Employer shall check the Contractor's monthly statement and certify within fourteen (14) days the amount to be paid to the Contractor.
- 49.3 The value of Services executed shall be certified by the Employer taking into account the monthly amount included in the Schedule of Prices for Ordinary Maintenance Services and the achievement of the Performance Standards for the Ordinary Maintenance Services adjusted

for any payment reductions in accordance with GC Sub-Clause 47.1.

49.4 The value of Works executed shall be certified by the Employer taking into account the value of the quantities of products executed and the prices in the Schedule of Prices.

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

50. Payments

50.1 Payments shall be adjusted for deductions for advance payments, retention, and reductions for not achieving Performance Standards for Ordinary Maintenance Services. The Employer shall pay the Contractor the amounts certified in accordance with GC Clause 49, within twenty-eight (28) days of the date of each certificate positively.

50.2 Unless otherwise stated, all payments and deductions will be paid or charged in the proportions of currencies comprising the Contract Price.

50.3 Items of the Works for which no rate or price has been entered in the Schedule of Prices will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

51. Retention and Reductions

51.1 The Employer shall retain the percentage indicated in the PC from each payment due to the Contractor for Periodic Maintenance Works except for the types of works specified in the PC. The regular monthly lump-sum payments for performance-based Ordinary Maintenance Services will not be subject to retentions, unless indicated in the PC.

51.2 On completion of the Periodic Maintenance and half the total amount retained shall be repaid to the Contractor and the other half after twelve (12) months have passed and the Employer has certified that all Defects notified to the Contractor have been corrected before the end of this period.

51.3 On completion of the whole Works and Services, the Contractor may substitute retention money with an “on demand” Bank guarantee.

51.4 Reduction of monthly payments for Ordinary Maintenance Services due to non compliance with the Service Levels will be made as indicated in GC Sub-Clause 47.1. The amount of Reduction for the days in which the Road was not complying with the Performance Standards will not be paid or repaid, even after the Contractor re-establishes the quality levels to the standards required by the contract. indicated in GC Sub-Clause 47.1. The amount of Reduction for the days in which the Road was not complying with the Performance Standards will not be paid or repaid, even after the Contractor re-establishes

52. Taxes and Duties	52.1 Except as otherwise specifically provided in the Contract, the Contractor shall bear and pay all taxes, duties, levies and charges assessed on the Contractor, its Subcontractors or their employees by all municipal, state or national government authorities in connection with the Works and Services in and outside of the country where the Site is located. 52.2 If any tax exemptions, reductions, allowances or privileges may be available to the Contractor in the country where the Site is located, the Employer shall use its best endeavours to enable the Contractor to benefit from any such tax savings to the maximum allowable extent. 52.3 For the purpose of the Contract, it is agreed that the Contract Price specified in the Form of Contract Agreement is based on the taxes, duties, levies and charges prevailing at the date twenty-eight (28) days prior to the date of bid submission in the country where the Site is located (hereinafter called "Tax"). If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the performance of the Contract, which was or will be assessed on the Contractor, Subcontractors or their employees in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction there from, as the case may be, in accordance with GC Clause 37 hereof.
53. Securities	53.1 Issuance of Securities : The Contractor shall provide the securities specified below in favor of the Employer at the times, and in the amount, manner and form specified In the GCC for construction. 53.2 Performance Security : As per GCC For construction.
54. Certificate of Completion	54.1 The Contractor shall request the Employer to issue a Certificate of Completion of the Periodic Maintenance Works, and Emergency Works, or parts thereof, as applicable, and the Employer will do so upon deciding that the work is completed.
55. Final Statement	55.1 The Contractor shall supply the Employer with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Employer shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within fifty-six (56) days of receiving the Contractor's account if it is correct and complete. If it is not, the

Employer shall issue within fifty-six (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 Employer shall decide on the amount payable to the Contractor and issue a payment certificate.

56. Discharge

56.1 Upon submission of the Final Statement, the Contractor shall give to the Employer, a written discharge confirming that the total of the Final Statement represents full and final settlement of all monies due to the Contractor arising out of or in respect of the Contract. Provided that such discharge shall become effective only after payment due under the Final Payment Certificate issued pursuant to Sub-Clause 55 has been made and the performance security referred to in Sub-Clause 53.3, if any, has been returned to the Contractor.

57. As Built Drawings and Manuals

57.1 If “as built” Drawings and/or manuals are required, the Contractor shall supply them by the dates stated in the PC.

57.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the PC, or they do not receive the Employer’s approval, the Employer shall withhold the amount stated in the PC from payments due to the Contractor.

G. REMEDIES

58. Suspension

The Employer may request by notice to the contractor to suspended performance of any or all of its obligation under the contract. Such notice shall specify the obligation of which performance is to be suspended ,the effective date of the suspension and the reason therefore .The contractor shall thereupon suspend performance of such obligation(except those obligation necessary for the care or preserve the site and work) until orderd in writing to resume such performance by the Employer.

59. Termination

59.1 Termination for Employer's Convenience

59.1.1 The Employer may at any time terminate the Contract for any reason by giving the Contractor a notice of termination that refers to this GC Sub-Clause 59.1.

59.1.2 Upon receipt of the notice of termination under GC Sub-Clause 59.1.1, the Contractor shall either immediately or upon the date specified in the notice of termination

- (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Works and Services already executed, or any work required to leave the Site in a clean and safe condition,
- (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii) below,
- (c) remove all Contractor's Equipment from the Site, repatriate the Contractor's and its Subcontractors' personnel from the Site, remove from the Site any wreckage, rubbish and debris of any kind, and leave the whole of the Site in a clean and safe condition.
- (d) In addition, the Contractor, subject to the payment specified in GC Sub-Clause 59.1.3, shall
 - (i) deliver to the Employer the parts of the Works executed by the Contractor up to the date of termination,
 - (ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Works and Services and to the Plant and Equipment as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors
 - (iii) deliver to the Employer all non-proprietary drawings, specifications and other documents prepared by the Contractor or its Subcontractors as at the date of termination in connection with the Works.

59.1.3 In the event of termination of the Contract under GC Sub-Clause 59.1.1, the Employer shall pay to the Contractor the following amounts:

- (a) the Contract Price, properly attributable to the parts of the works and services executed by the Contractor as of the date of termination,
- (b) the costs reasonably incurred by the Contractor in the removal of the Contractor's Equipment from the Site and in the repatriation of the Contractor's and its Subcontractors' personnel,
- (c) any amounts to be paid by the Contractor to its Subcontractors in connection with the termination of any

subcontracts, including any cancellation charges,

- (d) the costs incurred by the Contractor in protecting and leaving the Site in a clean and safe condition pursuant to paragraph (a) of GC Sub-Clause 59.1.2,
- (e) the cost of satisfying all other obligations, commitments and claims that the Contractor may in good faith have undertaken with third parties in connection with the Contract and that are not covered by paragraphs (a) through (d) above.

59.2 Termination for Contractor's Default

59.2.1 The Employer, without prejudice to any other rights or remedies it may possess, may terminate the Contract forthwith in the following circumstances by giving a notice of termination and its reasons therefore to the Contractor, referring to this GC Sub-Clause 59.2:

- (a) if the Contractor becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, if the Contractor is a corporation, a resolution is passed or order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Contractor takes or suffers any other analogous action in consequence of debt;
- (b) if the Contractor assigns or transfers the Contract or any right or interest therein in violation of the provision of GC Clause 13;
- (c) if the Contractor, in the judgment of the Employer has engaged in corrupt, fraudulent, collusive or coercive practices in competing for or in executing the Contract.

For the purpose of this Sub-Clause:

“corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

“fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.

“collusive practice” means a scheme or arrangement between two or more bidders, with or without the knowledge of the Borrower, designed to establish bid prices

at artificial, non-competitive levels.

“coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract.

59.2.2 If the Contractor

- (a) has abandoned or repudiated the Contract
- (b) has without valid reason failed to commence work on the Road promptly or has suspended (other than pursuant to GC Sub-Clause 58.2) the progress of Contract performance for more than twenty-eight (28) days after receiving a written instruction from the Employer to proceed,
- (c) persistently fails to execute the Contract in accordance with the Contract, such failure being defined in the PC, or persistently neglects otherwise to carry out its obligations under the Contract without just cause,
- (d) refuses or is unable to provide sufficient materials, services or labour to execute and complete the Works and Services in the manner specified in the program furnished under GC Clause 17 at rates of progress that give reasonable assurance to the Employer that the Contractor can attain completion of the works and services by the Time for Completion as extended,

then the Employer may, without prejudice to any other rights it may possess under the Contract, give a notice to the Contractor stating the nature of the default and requiring the Contractor to remedy the same. If the Contractor fails to remedy or to take steps to remedy the same within fourteen (14) days of its receipt of such notice, then the Employer may terminate the Contract forthwith by giving a notice of termination to the Contractor that refers to this GC Sub-Clause 59.2.

59.2.3 Upon receipt of the notice of termination under GC Sub-Clauses 59.2.1 or 59.2.2, the Contractor shall, either immediately or upon such date as is specified in the notice of termination,

- (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Works and Services already executed, or any work required to leave the Site in a clean and safe condition
- (b) terminate all subcontracts, except those to be assigned to the Employer based on the Employer’s written request,
- (c) deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Works and Services.

59.2.4 The Contractor shall be entitled to be paid the Contract Price attributable to the Works and Services executed as of the date of termination, and the costs, if any, incurred in protecting and in

leaving the Site in a clean and safe condition pursuant to paragraph (a) of GC Sub-Clause 59.2.3. Any sums due the Employer from the Contractor accruing prior to the date of termination shall be deducted from the amount to be paid to the Contractor under this Contract.

H. PROVISIONAL SUM

60. Provisional Sum

60.1 “Provisional Sum” means a sum included in the Contract for use when authorized by the Employer for Emergency Works and for contingencies, which sum may be used, in whole or in part, or not at all, on the instructions of the Employer. The Contractor shall be entitled to only such amounts in respect of the work, supply or contingencies to which such Provisional Sums relate as the Employer shall determine in accordance with this Clause.

61. Use of Provisional Sum for Emergency Works

61.1 After detecting a situation which in the opinion of the Contractor justifies the execution of Emergency Works or otherwise as defined in GC Clause 29, the Contractor shall submit a Technical Report to the Employer characterizing the situation. The emergency work shall be executed as per specification on the basis of Current SOR just before execution of the work if the rates of any item are not included in the contract.

61.2 If the execution of the Emergency Works require any activity not priced

in the Schedule of Prices, the Contractor will use the price breakdowns included in the Contractor's Bid in order to form the unit prices of the unpriced items to be included in the Price Quotation of the Emergency Works, all in accordance with agreed methodology for approving new prices.

61.3 Upon receiving the request for Emergency Works including a Price estimate based on clause 61.1 & 61.2 the Employer may issue a Work Order in accordance with GC Sub-Clause 29.2 for execution of the Emergency Works with a payment Schedule agreed with the Contractor. The cost of these Works will be covered by the amounts included in the Provisional Sum.

62. Use of Provisional Sum for Contingencies

62.1 The use of the Provisional Sum to cover for Contingencies will be done under the control and initiative of the Employer in accordance with the conditions of the Contract.

I. CHANGE IN CONTRACT ELEMENTS

63. Change in Assignments to Contractor

63.1 Introducing a Change

63.1.1 If so indicated in the PC, the Employer shall have the right to propose, and subsequently require, that the he order the Contractor from time to time during the performance of the Contract to make any change, modification, addition or deletion to, in or from the Assignments to the Contractor (hereinafter called "Change"), provided that such Change falls within the general scope of the Assignment and does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the Works and Services and the technical compatibility of the Change envisaged with the nature of the Works and Services as specified in the Contract.

63.1.2 If so indicated in the PC, the Contractor may from time to time during its performance of the Contract propose to the Employer any Change that the Contractor considers necessary or desirable to improve the quality, efficiency or safety of the Works and Services. The Employer may at its discretion approve or reject any Change proposed by the Contractor.

63.1.3 Notwithstanding GC Sub-Clauses 63.1.1 and 63.1.2, no change made necessary because of any default of the Contractor in the performance of its obligations under the Contract shall be deemed to be a Change, and such change shall not result in any adjustment of the Contract Price or the Time for Completion.

63.1.4 The procedure on how to proceed with and execute Changes is specified in GC Sub-Clauses 63.2 and 63.3, further details and sample forms are provided in the Sample Forms and Procedures section in the bidding documents.

63.2 Changes Originating from Employer

63.2.1 If the Employer proposes a Change pursuant to GC Sub-Clause 63.1.1, it shall send to the Contractor a "Request for Change Proposal," requiring the Contractor to prepare and furnish to the Employer, as soon as reasonably practicable, a "Change Proposal," which shall include the following:

- (a) brief description of the Change
- (b) effect on the Time for Completion
- (c) estimated cost of the Change
- (d) effect on Functional Guarantees (if any)
- (e) effect on any other provisions of the Contract

63.2.2 Prior to preparing and submitting the "Change Proposal," the Contractor shall submit to the Employer an "Estimate for Change Proposal," which shall be an estimate of the cost of preparing and submitting the Change Proposal.

Upon receipt of the Contractor's Estimate for Change Proposal, the Employer shall do one of the following:

- (a) accept the Contractor's estimate with instructions to the Contractor to proceed with the preparation of the Change Proposal,
- (b) advise the Contractor of any part of its Estimate for Change Proposal that is unacceptable and request the Contractor to review its estimate,
- (c) advise the Contractor that the Employer does not intend to proceed with the Change.

63.2.3 Upon receipt of the Employer's instruction to proceed under GC Sub-Clause 63.2.2 (a), the Contractor shall, with proper expedition, proceed with the preparation of the Change Proposal, in accordance with GC Sub-Clause 63.2.1.

63.2.4 The pricing of any Change shall, as far as practicable, be calculated in accordance with the rates and prices included in the Contract. If such rates and prices are inequitable, the parties thereto shall agree on specific rates for the valuation of the Change.

63.2.5 If before or during the preparation of the Change Proposal it becomes apparent that the aggregate effect of compliance therewith, and with all other Change Orders that have already become binding upon the Contractor under this GC Clause 63, would be to increase or decrease the Contract Price as originally set forth in the Contract Agreement by more than fifteen percent (15%), the Contractor may give a written notice of objection thereto prior to furnishing the Change Proposal as aforesaid. If the Employer accepts the Contractor's objection, the Employer

shall withdraw the proposed Change and shall notify the Contractor in writing thereof.

The Contractor's failure to so object shall neither affect its right to object to any subsequent requested Changes or Change Orders herein, nor affect its right to take into account, when making such subsequent objection, the percentage increase or decrease in the Contract Price that any Change not objected to by the Contractor represents.

63.2.6 Upon receipt of the Change Proposal, the Employer and the Contractor shall mutually agree upon all matters therein contained. Within fourteen (14) days after such agreement, the Employer shall, if it intends to proceed with the Change, issue the Contractor with a Change Order.

If the Employer is unable to reach a decision within fourteen (14) days, it shall notify the Contractor with details of when the Contractor can expect a decision.

If the Employer decides not to proceed with the Change for whatever reason, it shall, within the said period of fourteen (14) days, notify the Contractor accordingly. Under such circumstances, the Contractor shall be entitled to reimbursement of all costs reasonably incurred by it in the preparation of the Change Proposal, provided that these do not exceed the amount given by the Contractor in its Estimate for Change Proposal submitted in accordance with GC Sub-Clause 63.2.2.

63.2.7 If the Employer and the Contractor cannot reach agreement on the price for the Change, an equitable adjustment to the Time for Completion, or any other matters identified in the Change Proposal, the Employer may nevertheless instruct the Contractor to proceed with the Change by issue of a "Pending Agreement Change Order."

Upon receipt of a Pending Agreement Change Order, the Contractor shall immediately proceed with effecting the Changes covered by such Order. The parties shall thereafter attempt to reach agreement on the outstanding issues under the Change Proposal.

If the parties cannot reach agreement within sixty (60) days from the date of issue of the Pending Agreement Change Order, then the matter may be referred to the DRE in accordance with the provisions of GC Sub-Clause 6.1.

63.3 Changes Originating from Contractor

63.3.1 If the Contractor proposes a Change pursuant to GC Sub-Clause 63.1.2, the Contractor shall submit to the Employer a written "Application for Change Proposal," giving reasons for the proposed Change and including the information specified in GC Sub-Clause 63.2.1.

Upon receipt of the Application for Change Proposal, the parties shall follow the procedures outlined in GC Sub-Clauses 63.2.6

and 63.2.7. However, should the Employer choose not to proceed, the Contractor shall not be entitled to recover the costs of preparing the Application for Change Proposal.

**64. Extension
Time for
Completion**

- 64.1 The Time(s) for Completion specified in the PC shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:
- (a) any Change in the Works and Services as provided in GC Clause 63,
 - (b) any occurrence of Force Majeure as provided in GC Clause 38 and unforeseen conditions as provided in GC Clause 36,
 - (c) any suspension order given by the Employer under GC Clause 58,
 - (d) any changes in laws and regulations as provided in GC Clause 37, or
 - (e) any default or breach of the Contract by the Employer, or any activity, act or omission of any other contractors employed by the Employer, or
 - (f) any other matter specifically mentioned in the Contract

by such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Contractor.

- 64.2 Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Employer a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Employer and the Contractor shall agree upon the period of such extension. In the event that the Contractor does not accept the Employer's estimate of a fair and reasonable time extension, the Contractor shall be entitled to refer the matter to a DRE, pursuant to GC Sub-Clause 6.1.

- 64.3 The Contractor shall at all times use its reasonable efforts to minimize any delay in the performance of its obligations under the Contract.

**65. Release from
Performance**

- 65.1 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 Employer 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.

**66. Inspections
and Audits**

- 66.1 The Contractor shall permit the Employer and/or persons appointed by the Employer 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 Employer if required by the Employer. The Contractor's attention is drawn to Sub-Clause 67.1 [Corrupt or

67. Corrupt or Fraudulent Practices

Fraudulent Practices] which provides, inter alia, that acts intended to materially impede the exercise of the Employer's inspection and audit rights provided for under Clause 66 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Procurement Guidelines).

67.1 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 shall apply.

67.2 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 19.3.

67.3 For the purposes of this Sub-Clause:

- (i) "corrupt practice" 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" 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" 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" 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 Employer 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 66 [Inspections and Audits].

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SECTION XIII

**PARTICULAR CONDITIONS (PC)
For Maintenance**

Section XIII. Particular Conditions (PC)

The following Particular Conditions shall supplement the GC. They are to be completed by the Employer and presented as part of the Bidding Documents. Whenever there is a conflict, the provisions herein shall prevail over those in the GC.

Reference to GC clauses

1.	The site is the area : encompasses ROW of the Road and Road Assets of Packages. The intended Completion Date is: 60 months and additional period for Periodic Maintenance months after completion of construction work. The name of the Employer Executive Engineer, Road Division.....
4.	The language of the Contract is English/ Hindi and the law governing the Contract is the law of the Union of India
5.	The address of the Employer is: The address of the Contractor is: Address: Telephone and fax numbers: Mobile No E-Mail address:
8.2.1	Replace "With good Engineering practice" by "With good engineering practice and per direction of Engineer-in-charge" in all relevant paras/ clause of MBD. The last four line of second paragraph of GC 8.2.1 i.e., "Provided that such discrepancies, errors or omissions are not because of inaccurate information furnished in writing to the Contractor by or on behalf of the Employer" is deleted
8.4.1	The Contractor is obliged to prepare and to furnish to the Employer for Approval the following documents: as detailed in Clause A14 of the Technical Specifications. The technical specifications of Ordinary Maintenance works shall be as per the guidelines of MORTH.
8.4.5	Replace word 'determination' by 'decision'.
10.1	The Start Date shall be immediately after completion of construction work.
10.2	The Time Schedule for the achievement of specific Service Levels is: Section V Parts C
14.2	Deleted

19.2 (h) and (i)	The provisions concerning HIV-AIDS prevention apply . Rs 25000/- per year dedicated in provisional Sum for HIV/AIDS.	
20	Replace “ Employer” by “ Engineer in charge ”.	
21.	The Contractor shall carry out the Periodic Maintenance Works, which are detailed in the Specifications:	
25.2	The Contractor shall establish a Self Control Unit	
35.1	The Contractor shall take out before the start date and maintain in effect the following insurances in the sums shown below:	
	All risk Policy with a value equivalent to accepted contract price.	In accordance with the Insurance Company requirements applicable to India
37.1	Replace the word ‘costs and expenses’ by ‘cost’.	
39.1	The Time for Completion are the following: For Maintenance work 60 months and additional period for Periodic Maintenance months after completion of construction work.	
39.3	For Periodic Maintenance works the liquidated damages shall be 1/1000 th (a thousandth) of the Quoted Price of corresponding Scheduled Activity per calendar day of delay, of the payment normally due for the specific Works for which completion is delayed subject to maximum upto 10% of cost of ECV of PM.	
40.3	For non-compliance with the performance Standards on road roughness at the Milestone measurement in accordance to Clause 40.3, the Contractor can either (a) correct the non compliance at his own cost for retesting within the timeframe agreed with the Engineer or (b) pay Liquidated Damages for non complying sections at Rs 100 per 100m lane section of non-compliance. In the event that the Contractor agrees to correct the non compliance but fails to do so in the agreed timeframe, Liquidated Damages shall be imposed.	
40.4	The maximum amount of Liquidated Damages shall be not more than 10% of the value of Periodic Maintenance respectively.	
41.2	<i>Remove GC Clause 41.2 and insert the following:</i> The Defect Liability Period for Works (or any part thereof) shall be twelve (12) months from the date of Certificate of Completion of the Works	
41.6	The Defect also includes the work identified to be executed to bring the road service below intervention criteria.	
42.1(b)	The aggregate liability of the Contractor to the Employer, excluding payment reductions defined in GC 47.1, shall not exceed the amount of twenty (20) percent of contract amount.	
44.1	The payment of the Contract Price will be made in the following currencies: Indian Rupees	

45.1	Advance payment will not be given for maintenance work.
46.5	Replace the second sentence with the following The Lump-Sum price for the Emergency Works will be submitted by the Contractor to the Employer in each emergency pursuant to GC Clauses 29 and 61 and will be prepared based on the Specifications and on the unit prices included in the work Schedule 4 for similar items and for other items not covered under Schedule 4, shall be arrived as per Clause 61 and 63 of General Conditions of Contract and will remunerate all Emergency Activities.
47.2	Periodic Maintenance Works will be measured on the following basis: on the basis of work outputs.
47.3	Minor Improvement Works will be measured on the following basis: not applicable.
47.4	The Emergency Works shall be approved by the Employer with the permission of SE/CE/ Engineer in Chief.
48.	Price adjustment applies with indices as on <u>28 days</u> prior to bid opening Price Adjustments shall be made on the following basis. (a) Price Adjustment shall apply for Ordinary Maintenance, Initial Rectification, Minor Improvement, Periodic Maintenance, Emergency/Day Works, from the Start Date up to the Completion Date as certified by the Employer. Price adjustment shall not be applicable for work completed outside of stipulated timeframes (i.e. after the Intended Completion Date for PM/MI, inclusive of any approved extensions); (b) Price adjustment shall not be applied to work valued on the basis of Current Cost / current prices/ Current SOR. (c) Monthly Contract payments due to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates shall be adjusted for increase or decrease in cost of Labour, Materials, Fuels and, Local Materials in accordance with the formulae given below: <u>Ordinary Maintenance (Schedule 1) & Initial Rectification (Schedule 2):</u> $A_n = a + b \times \frac{WPI_n}{WPI_o} + c \times \frac{Bi_n}{Bi_o} + d \times \frac{Ce_n}{Ce_o}$ <u>Periodic Maintenance Work (Schedule 3)</u> $B_n = a + b \times \frac{WPI_n}{WPI_o} + c \times \frac{Bi_n}{Bi_o} + e \times \frac{L_n}{L_o} + f \times \frac{F_n}{F_o}$ <u>Minor Improvement (Schedule 4):</u>

$$C_n = a + b \times \frac{WPI_n}{WPI_o} + c \times \frac{Bi_n}{Bi_o} + d \times \frac{Ce_n}{Ce_o} + e \times \frac{L_n}{L_o} + f \times \frac{F_n}{F_o}$$

Daywork (Schedule 5)

$$D_n = a + b \times \frac{WPI_n}{WPI_o}$$

where:

“A_n”, “B_n”, “C_n” and “D_n” are the adjustment multipliers to be applied to the value of the work carried out in month number “n”, for Ordinary Maintenance & Initial Rectification, Periodic Maintenance, Minor Improvements and Emergency Works (Provisional Quantities/ Day work) respectively;

“a” is a fixed coefficient, representing the non adjustable portion in contractual payments;

“b”, “c”, “d”, “e” and “f” are coefficients representing the estimated proportion of each cost element related to the execution of the Works (i.e. WPI, bitumen, cement, labour, and fuel).

The value of coefficients is as stated in the table below.

Work Type	Coefficient	Percentage Value	Cost Index Applicable to
Ordinary Maintenance (OM)	a	15%	Non adjustable portion of payments
	b	45%	Wholesale Price Index (WPI)
	c	35%	Bitumen
	d	5%	Cement
Periodic Maintenance (PM)	a	15%	Non adjustable portion of payments
	b	15%	WPI

	c	40%	Bitumen
	e	15%	Labour
	f	15%	Fuel
Emergency/Day Works	a	15%	Non adjustable portion of Payments
	b	85%	WPI

“L_n”, “Bi_n”, “Ce_n”, “F_n” and “WPI_n” are the prevailing indices or reference prices for Labour, Bitumen, Cement, Fuel and Wholesale Price Index respectively for the period “n” on the day 28 days prior to the last day of the period, being invoiced; and

“L₀”, “Bi₀”, “Ce₀”, “F₀” and “WPI₀” are the base cost indices or reference prices for Labour, Bitumen, Cement, Fuel and Wholesale Price Index respectively and shall be the indices prevailing 28 days before Bid opening.

The intended sources of indices detailed above shall be as outlined below. If the source for any of the indices is in doubt, it shall be determined by the Engineer in charge .

Labour (L): Consumer Price Index for industrial workers for Jamalpur centre as published by Labour Bureau, Ministry Of Labour, Government Of India, New Delhi.

Bitumen (Bi): Official retail price of bitumen at the IOCL Barauni .

Fuel (F): Official retail price of High Speed Diesel (HSD) at the existing consumer pumps of BPCL / IOCL /HPCL at Divisional Head Quarter town of the concerned road Division.

WPI: All India Wholesale Price Index (All Commodities) as published by the Office of the Economic Adviser to the Government of India, Ministry of Commerce and Industry.

Cement(Ce):- The Whole Sale Price Index for Grey Cement as published by the Office of the Economic Adviser to the Government of India, Ministry of Commerce and Industry.

The total amount payable to the Contractor each month shall be:

$$\begin{aligned} \text{Amount Payable} = & A_n \times (R_{OM} + R_{IR}) \\ & + B_n \times R_{PM} \\ & + C_n \times R_{MI} \\ & + D_n \times R_D \end{aligned}$$

Where R_{OM} = OM value payable for the month
 R_{IR} = IR value payable for the month
 R_{PM} = PM value payable for the month
 R_{MI} = MI value payable for the month

	R_D = Day works value payable for the month The value of R above shall be exclusive of seigniorage, VAT and other statutory taxes. Payments not subject to Price Escalation Payments made to the Contractor in respect of the following items will not be adjusted in accordance with Price Escalation: (a) variations ordered by the Engineer in charge except where the variations so ordered are valued at rates lodged in Schedule 1, 2, 3 and 4 with the tender; (b) payments made in regard to the return of retention money or security deposit (c) net procurement cost for the purchase of the Patrol Maintenance Unit.
51.1	The retention for Initial Rectification, Periodic Maintenance and Minor Improvement Works is fixed at five (5) percentage :
51.3	<i>GC Clause 51.3 may be deleted.</i>
51.4	<i>GC Clause 51.4 may be re-numbered as 51.3, and following may be added at the end of the re-numbered Clause 51.3:</i> For any particular Month, the total Payment reduction for non-compliance of Ordinary Maintenance shall not exceed the amount of the Monthly LS Payment for OM. If the Contractor incurs a deduction to the Monthly Lump sum payment for OM as applicable under Clause C7 of the Technical Specification of: (i) 25% or more of the possible monthly Lump Sum payment for (a) any three consecutive months, or (b) for any six months during the period of the Contract, or (ii) 50% or more of the possible monthly Lump Sum payment for any one month The Employer considers the above a fundamental breach of Contract and may terminate the Contract in accordance with Clause 59 of the General Conditions and Clause 59.2.2 (c) of the Particular Conditions, all the due amounts to the contractor will be retained.
57.1	<i>The following Drawings and/or Manuals are required at the following dates:</i> <i>As built drawings for Bridge, Culverts and Improvement Works – 60 days after completion</i> <i>Bar Charts for Resurfacing Works – 30 days after completion</i>
57.2	If the required documents are not supplied in accordance with PC 57.1, the amount to be withheld is Rs 5,000 per event . Payment reduction for non

	conformance for successive months will be made as per conditions and clause C7 of Technical specification
59.2.2(C)	The condition of persistent failure to execute the contract is if and when the Contractor breaches Clause 40.4 or Clause 51.4 of the Particular Conditions or Clause C7 of the Technical Specifications, whichever occurs earlier.
61.2	Substitute Schedule of prices with Schedule of Prices/ Current S.O.R.
63.1.1	The Employer has the right to propose a change in the contract element: Yes
63.1.2	Contractor's right to propose a change in the contract element: Yes
63.2.6	The Sentence "Under such circumstances, the Contractor shall be entitled to reimbursement of all costs reasonably incurred by it in the preparation of the Change Proposal, provided that these do not exceed the amount given by the Contractor in its Estimate for Change Proposal submitted in accordance with GC Sub-Clause 63.2.2." is deleted.
64.2	The sentence "Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Employer a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance" will be read as "Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Employer a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension but not later than 28 days of the occurrence of the event or circumstances.

SECTION XIV

Annex to Particular Conditions – Contract Forms

(Suitable forms shall be applicable for Construction and maintenance or both at the discretion of employer)

INDEX (Maintenance).....

Annex A: Performance Bank Guarantee

Annex B: Retention Security

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PERFORMANCE BANK GUARANTEE(Maintenance)

ANNEX- A

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]
¹ _____ [in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of guarantee]¹ 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 28 days from the date of expiry of the Defects Liability Period.

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

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

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Retention Money Security**Demand Guarantee**

_____ [Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: _____ [Name and Address of Employer]

Date: _____

RETENTION MONEY GUARANTEE No.: _____

We have been informed that _____ [name of Contractor] (hereinafter called "the Contractor") has entered into Contract No. _____ [reference number of the contract] dated _____ with you, for the execution of _____ [name of contract and brief description of Works and Services] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment, payment of [insert the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security] is to be made against a Retention Money guarantee.

At the request of the Contractor, we _____ [name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of _____ [amount in figures] () [amount in words]¹ upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor used the advance payment for purposes other than the costs of mobilization in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the payment of the second half of the Retention Money referred to above must have been received by the Contractor on its account number _____ at _____ [name and address of Bank].

This guarantee shall expire, at the latest, 21 days after the date when the Employer issue the Performance Certificate. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

[signature(s)]

and the amount guaranteed under the Performance Security and denominated either in the currency(ies) of the second half of the Retention Money as specified in the Contract, or in a freely convertible currency acceptable to the Employer.

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

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APPENDICES

- **Appendix A – Drawings**
- **Appendix B – Asset Inventory Information**
- **Appendix C – Forms of Contract**
- **Appendix D – Rules & Procedure of DRE**
- **Appendix E – Terms of Reference for Videographic Survey**
- **Appendix F1 – Contractors Checklist on Environmental & Social Issues**
- **Appendix F2 – Environmental Management Action Plan**
- **Appendix F3 – Environmental Sensitive Areas for Particular Attention**

APPENDIX A

INDEX MAP

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NAME OF THE PROJECT: **Output and Performance Based Road Contract (OPRMC)**

APPENDIX B – ASSET INVENTORY INFORMATION

CULVERT INVENTORY DETAILS FOR OPRMC

Structure identity	Location of structure	Type of structure	Dimensions	Comments

CMBD 01.01.2014

APPENDIX C - FORMS OF CONTRACT

The Contractor is required under the terms of this Contract to establish a Quality Plan, part of which advises the Employer of inspections, programming and compliance reporting. The following forms are samples of details required in the operations of a Performance Based Maintenance Contract. These sample forms are available to the Contractor and shall be used as part of his reporting requirement unless an alternative form is approved by the Employer. Over the term of the Contract, the Contractor shall improve and further enhance these forms and shall incorporate any changes to these forms as directed by the Employer.

Form No. OM01 – Ordinary Maintenance Inspection Report

To undertake monthly inspections of the roads under this contract and report all defects outside Intervention Criteria to the Employer.

Form No. OM02 – Hazard Inspections Report

The Contractor is required to complete weekly Hazard Inspections to ensure the carriageway remains safe at all times and does not present a hazard to the travelling public.

Form No. OM03 - Bridge and Major Culvert Inspection Report

To undertake a detailed inspection of all bridges and culverts within the first 3 months of signing the contract, then at regular 6 monthly intervals and after flooding and heavy rains. The Contractor shall undertake the inspection and report to the Employer.

Form No. OM04 – Night Inspections Report

The Contractor is required to complete a Night Inspections every 6 months to ensure the carriageway remains safe at all times and does not present a hazard to the travelling public.

Form No. OM05 – Emergency Inspections Report

The Contractor is required to conduct an Inspection on notification of Emergency Works, determine the treatment and estimate quantities for approval by the Employer

Form No. OM06 – Monthly Works Program

The Contractor is required to complete a Monthly Works Program of maintenance activities to be undertaken during the following month and submit to the Employer. This schedule is to be delivered by the 3rd working day of each month and shall include all activities outside Intervention Criteria and approved Emergency Works Items.

Form No OM07 – Monthly Progress Report

The Contractor is required to advise the Employer details of the quantity of work completed and an estimate of the costs to achieve compliance. This information is used in assessing the viability of future works, work method efficiencies and base information for the state-wide Road Maintenance Management System (RMMS).

By the 30th of each month the Contractor shall provide to the Employer full details of all repairs undertaken in each kilometre indicating the amount of work completed for each Item and the total cost of works for each kilometre, as required under Clause A13.1 of the Technical Specification.

Form No OM08A – Maintenance Program Compliance Sheet

Compliance against the Program shall be assessed for each month and shall be submitted on the due date of the Program. The form shall highlight the extent of works as scheduled in the Program for the month and the extent of the actual works completed.

Form No OM08B – Management Programme Compliance Sheet

Details of all compliances against the management requirements of the contract shall be detailed in OM08B and submitted along with Maintenance Program Compliance sheet.

Form No OM09 – Non-Conformance Report

Details of all non-conformances in respect to the Quality Plan and the Contract requirements shall be detailed in the Form OM09. A copy of the completed form shall be submitted to the Employer within 7 days of registering the non-conformances. This form should be used in a constructively so as to continually improve the Contractor's management systems and processes.

Form No OM10 – Condition Survey – Field data Collection Sheet

The Contractor shall record road and asset condition survey information using Form OM10. This shall include the initial condition survey per Clause A13.2.1 of the Technical Specification.

Form No. OM11 – Work Order Form

The Employer shall issue Work Orders using this Form for the authorizing the execution of Minor Improvement and Emergency Works.

Government Of Bihar Road Construction Department			ORDINARY MAINTENANCE INSPECTION REPORT Follow instructions for observing defects and reporting required											Form OM01			
Road From:			To:											Sheet: Of			
Name of Road :			Kilometre measured from:											Date: / /			
Inspector :			Position:											Signature:			
Standard work item		Work	Units of work required in each kilometre and priority										Total units				Comments
No.	Name	Units	1	2	3	4	5	6	7	8	9	10	no w	2w	1m	3m	
OM100 Sealed Pavement																	
OM101	Pothole Patching	m ²															
OM102	Surface Depression and Rut Patching	m ²															
OM103	Crack Sealing	Lm															
OM104	Surface Treatment																
	(a) Loss of Aggregate (Surface Ravelling)	m ²															
	(b) Bleeding / Flushing	m ²															
	(c) Crocodile Cracking	m ²															
OM105	Pavement sweeping	m ²															
OM106	Edge Repair	m ²															
OM107	Digouts	m ²															
OM108	Concrete Pavement	m ³															
OM200 Shoulder																	
OM201	Unsealed Shoulder																
	(a) Edge Drop-off	Lm															

	(b) Roughness, Scouring or Potholes	Lm														
	(c) Holding water	Lm														
OM202	Power Grading	km														
OM203	Emb and Batter Repair	No														
OM 300 Drainage																
OM301	Surface Drains & Verge	Lm														
OM302	Culvert Pit Cleaning and Stormwater Drains	Lm														
OM303	Culvert and Pit Repair															
OM304	Stream Maintenance	m ²														
Incorporated into work schedule by: Signed by.....on...../...../..... File this form																

Standard work item		Work	Units of work required in each kilometre and priority										Total units in next				Comments
No.	Name	Units	1	2	3	4	5	6	7	8	9	10	now	2w	1m	3m	
OM400 Vegetation																	
	Grass Control																
	a) Roadside – General Tidy	Ha															
	b) Medians and Traffic Islands	Ha															
	c) Road	Ha															

	Intersections - Maintain Sight Distance																
	d) Clear near safety signs, kilometre posts and roadside furniture	Ha															
OM402	Tree and Shrub Management	Hr															
OM500 Furniture																	
OM501	Signs Maintenance	No															
OM502	Guardstones	Lm															
OM503	Guideposts, Distance Markers, Delineator, Painted Trees	No															
OM504	Footways	m ²															
OM505	Roadmarkings and Cats Eyes	No															
OM600 Structures																	
OM601	Bridge Maintenance																
	a) Cleaning and clearing of deck, footway, expansion joints and down pipes	Hr															
	b) Repair and painting including repair of spalled posts and parapets	Hr															

Incorporated into work schedule by: Signed by.....on...../...../.....File this form

Standard work item		Work	Units of work required in each kilometre and priority										Total units in next				Comments
No.	Name	Units	1	2	3	4	5	6	7	8	9	10	now	2w	1m	3m	
OM700 Operational Servicing																	
OM701	Land Slip Clearing	m ³															
OM702	Emergency Works and Services	No															
OM703	Vandalism Repair	Hr															
OM704	Road Obstructions/ Dead Animals	Lm															

Incorporated into work schedule by: Signed by.....on...../...../.....File this form

Instructions for use of Ordinary Maintenance Inspection Report (Form OM01)

Use separate Form OM01 for each 10km of a road. Use a separate form for each road.

You may use the Form for longer lengths by making each kilometre marked on the Form represent 2km, 3km, etc. This is useful when there are long lengths with similar defects.

Fill in header details. The inspector signs the Form when completed that meets the set interaction levels.

Record the amounts of each work item required on Form OM01 for Ordinary Maintenance or Form RM02 for Bridge Structure repair.

Note the intervention time required for each work item. Record the total amount of each work item required in the appropriate column as:

Total units in next:

now	=>	immediate/within 1 week
2w	=>	within 2 weeks
1m	=>	within 4 weeks
2m	=>	within 8 weeks

Record comments on special requirements as appropriate or if works Emergency Works is required.

Forward a copy the completed Form to the maintenance supervisor responsible for the road to gather with your revised schedule of work for approval

BRIDGE AND MAJOR CULVERT INSPECTION REPORT

Follow instruction for observing and reporting defects (see back)

Use a separate form for each bridge of major culvert

Road from :.....to:.....Name of the
Road.....

Bridge Name:.....Stream
crossed.....

Inspector Name:.....Position.....

Tick items inspected:

Date of Inspection:...../...../.....

Approaches	☐	Signs	☐	Barrier Stones	☐	Bearings	☐	Services	☐
Road drainage	☐	Deck & footway	☐	Superstructure	☐	Retaining walls	☐		☐
Roadway	☐	Joints Deck	☐	Paint	☐	Waterway	☐		☐
Guard-rails	☐	Drainage	☐	Substructure	☐	Erosion	☐		☐

Record Ordinary maintenance required:

Standard work item		Work	Work	Total units in next				Comments
No.	Name	Unit	Required	now	2w	1m	3m	
Bridges Maintenance and Drainage								
OM301 Surface Drains and Verges								
	Surface drains cleaning							
	Unlined drain debris remove							
	Unlined drain re-grade							
	Lined drain debris remove							
	Lined drain repair							
OM302 Culverts and Pits Cleaning and Storm water Drain								
	Culvert and pits cleaning							

	Culvert entrance debris							
	Culvert barrel debris							
	Drainage pit debris							
OM 303 Culvert and Pits Repair								
	Culvert pit repair							
	Culvert wing wall repair							
	Culvert apron repair							
	Culvert barrel repair							
	Drainage pit repair							
	Earthwork repair							
OM304 Stream Maintenance								
	Maintenance of stream							
	Cleaning debris							

Standard work item		Work	Work	Total units in next				Comments
No.	Name	Unit	Required	now	2w	1m	2m	
OM601 Bridge Structure								
	Joint sealant repair							
	Concrete spall repair							
	Bridge deck and joint							
	Bridge deck drainage							
	Hand rail repair							
	Bridge repaint							
	Bridge minor structure							
Details of Other Items								

Is higher level inspection required? Yes ☐ No ☐ Why?.....	Urgent work required:	

**Government of Bihar
Road Construction
Department**

Form OM06

ROAD NAME.....

MONTHLY WORKS PROGRAM

Contractor : Road.....

Period from :/...../..... to/...../.....

Standard Work item		Location	Gang size	Equipment	Quantity Man / days	Dates																												Total Works Completed
No.	Name					S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	

Planned by:

On/...../.....

Name

Signature

Approved by:

On/...../.....

Name

Signature

CMBD 01.01.2014

MONTHLY PROGRESS REPORT (Form OM04)

Road No.

Road Name from

to

.....

.....

.....

Period for the month of

.....

Standard work item		Work	Previ ous	Quant ity	Quant ity	Rs.	Rs.	Rs.	Comments
No.	Description	Unit	Quant ity	(Mon th)	(Total)	(Previo us)	(Mont h)	(Tot al)	
1 Pavement Maintenance									
OM100 Sealed Surface									
OM101	Pothole patching	m ²							
OM102	Regulation of wheel ruts and depressions	m ²							
OM103	Crack sealing	Lm							
OM104	Surface Treatment								
	(a) Loss of aggregate (Surface ravelling)	m ²							
	(b) bleeding / flushing	m ²							
	(c) crocodile cracking	m ²							
OM105	Pavement cleaning	m ²							
OM106	Edge repair	m ²							

OM107	Digouts	m ²							
OM108	Repair concrete pavement	M ³							
OM200 Shoulder									
OM201	Unsealed Shoulder								
	(a) Drop off from edge of seal to shoulder	Lm							
	(b) Roughness, Scouring or Potholes	Lm							
	(c) Holding water	Lm							
OM202	Power grading of shoulders	km							
OM203	Embankment and batter repair	No							

Standard work item		Work	Previ ous	Quant ity	Quant ity	Rs.	Rs.	Rs.	Comments
No.	Description	Unit	Quant ity	(Mon th)	(Total)	(Previo us)	(Mont h)	(Tot al)	
OM 300 Drainage									
OM301	Surface Drains and Verges	Lm							
OM302	Culvert Pit Cleaning and Strom	Lm							
OM303	Culvert and Pit Repair								
OM304	Stream Maintenance	m ²							
OM 700 Operational Servicing									
OM701	Land Slip Clearing	m ³							
OM702	Emergency Works and Services	No							
OM803	Vandalism Repair	Hr							
OM804	Litter control / Dead animals	Lm							
2. Roadside Maintenance									
OM400 Vegetation									

OM401	Grass Control								
Om402	Tree and shrub management								
OM500 Road Furniture									
OM501	Signs maintenance	No							
OM502	Guardstones	Lm							
OM503	Guideposts, Distance Markers,	No							
OM504	Footways	m ²							
OM505	Roadmarking and Cats Eyes	No							
3. Bridge Maintenance									
OM600 Structures									
OM 601	Bridge Maintenance	Hr							
Progress prepared by: Signature on / / Checked by: Signature on / / Approved for RCD by: on / /									

CONTRACT No: _____	<u>MAINTENANCE PROGRAM COMPLIANCE SHEET (OM08 A)</u>	Page: of
		Date: _____
ROAD: _____	FROM: _____	TO: _____
CONTRACTOR: _____		INSPECTOR: _____

REF	STANDARD JOB	DISTANCE (i.e. 3 is between 3km and 4km stones)										DETAILS (Non-compliance Report etc.)
		...	...	...	...	...	...	...	...	...	...	
		0	1	2	3	4	5	6	7	8	9	
OM101	Pothole Patching											
OM102	Regulation											
OM103	Crack Sealing											
OM104	Surface Treatment											
OM105	Pavement											
OM106	Edge Repair											
OM107	Digout Repair											
OM108	Concrete Pav											
OM201	Shoulder Repair											
OM202	Power Grading											
OM203	Emb & Batter											
OM301	Drains Cleaning											
OM302	Culvert Cleaning											
OM303	Culverts Repair											
OM304	Stream											
OM401	Grass Control											
OM402	Tree Trimming											
OM501	Sign Maintenance											
OM502	Guardstones											
OM503	Distance Markers											
OM504	Footways											
OM505	Rd Marking & CE											
OM601	Bridge											
OM701	Land Slip											
OM702	Emergency Works											
OM703	Vandalism Repair											
OM704	Road Obs & DA											

CONTRACT NO.		MANAGEMENT PROGRAM COMPLIANCE SHEET (OM 08 B)		Page ----- of
		Date		
ROAD	FROM		TO	
CONTRACTOR		INSPECTOR		

Sl No.	Management Requirements	Details (Compliance /Non Compliance)
1	Initial condition report	
2	Mile stone Complition report	
3	As built drawings for culverts and improvement works	
4	Bar chars for resurfacing works	
5	Environmental compliance	
6	Ordinary Maintenance inspection reports	
7	Weekly Hazard Inspection reports	
8	Bridge and major culvert inspection reports	
9	Night Inspection reports	
10	Monthly works programme	
11	Maintenance programme compliance report	
12	Any other report	

EMPLOYER	Name	Signature

NON-CONFORMANCE REPORT

Form OM9

Report No:

CONTRACTOR: Date:

CONTRACT No: Originator:

ROAD: Location:

Description of Non-Conformance:

.....

.....

.....

.....

.....

.....

.....

.....

Corrective Action:

.....

.....

.....

.....

.....

.....

.....

.....

Date of Anticipated Completion:

Checked By:

NAMSIGNATU

Date of Actual Completion:

EMPLOYER:

NAMSIGNATU

Condition Survey – Field Data Collection

Sheet.....of

Date:..... Road No: Road
Name:.....

Chainage: to.....

Standard Work Item	Kms						Remarks
Pothole	m ²						
Pothole	No.						
Dep & Rut Patch	m ²						
Crack Sealing	m						
Edge Breaks>100mm	m						
(a) Stripping+Ravelling	m ²						
(b) Bleeding	m ²						
(c) Crocodile	m ²						
(d) Delamination	m ²						
Culvert Cleaning	No						
Culvert Painting	No.						
Culvert+Drain Repair	No.						
Guard Stone Paint	No.						
Guard Stone Replace	No.						
Dist. Markers Paint	No.						
Dist. Markers Repair/Replace	No.						
(a)Low Shoulder	m						
(b) High Shoulder	m ²						
(c) Spot Shoulder	m ²						
Dig -Out	m ²						
Trench Filling	No.						
Damage Signs	No.						
Missing Signs	No.						
Bridge Parapet Repair	No.						

GOVERNMENT OF BIHAR ROAD CONSTRUCTION DEPARTMENT WORKS ORDER		WO..... FORM OM11
Contractors Name:		
Contract No		Contract Title
Subject Description		
Location Name		
Location Chainage: Km from: Km to:		
DESCRIPTION AND DETAILS		
.....		
Works Completed	Endorsed by Officer Name: Signed by: Date:	
Issued by	Received by Contractor	
Name: Signature: Date:/...../..... Designation:	Name: Signature: Date:/...../..... Designation:	

PPENDIX E – terms of reference for videographic survey

The contractor shall also be required to take a video record of all roads under this contract within the first 15 days from start date. The video shall be taken during daylight hours with the Digital Video Camera mounted in the front position with the camera aligned with the centre of the road. Video records shall also be taken of all Bridge, Culvert and other structures. The Videographic recording shall be done at the running vehicular speed of 5 Kph and the vehicle running in the pro direction of Sun rays. The Employer may require that specific camera shots or angles be taken during the recording of such important features like junctions, culvert structures, damaged signage, road furniture and other road assets etc. The video shall be taken in the presence of the Employer or his nominated representative. The Contractor shall supply the Employer with set of two copies of CD/DVD of each video recording within 21 days after the notice to commence.

Contractor's Checklist on Environmental Issues

Project Name: _____ Contract /Road No. _____

Contractor Details: _____

Project Description: _____

Questions		Response (see note at the end of the checklist)
Activities		
1.	List the activities you will be undertaking during the works such as rock breaking, blasting, laying bitumen, establishing camp and plants etc.	
Responsibilities		
2.	Do you have any qualified/experienced person on environmental management? If not, how are you going to manage the environment aspects?	
Materials		
3.	What base materials will you transport to the site such as stone, soil, diesel, lubricant?	
4.	Where will you source these materials from (non-manufactured material such as sand, soil, stone)?	
5.	Where will you store these materials?	
6.	How will you ensure materials brought to site will be stored and handled with care to avoid contamination of soil and water, reduce dust, and minimize disruption of traffic, not impairing public safety?	
Emissions to water, soil and air (Pollutants)		
7.	How will you ensure that any construction materials and works will: • Not restrict access to properties and carriageways. • Not damage existing trees. • Be protected from rain to reduce the loss of soil and materials washing down roads and entering drains and waterways. • Be stored to reduce leaks (such as Diesel) into the soil or waterways. • Not generate dust or cause nuisance air emissions.	
8.	How will you ensure proper drainage from the works so that water does not pond and become a hazard to health?	
9.	How will you reduce sediment from the construction activities?	
Fauna and Flora		
10.	How many trees will you have to remove to undertake the works?	
11.	What will you do with any trees that are removed?	

Questions		Response (see note at the end of the checklist)
12.	How will you protect existing trees from construction activities?	
Waste Management		
13.	How do you plan to store and dispose of: • Construction debris? • Workers refuse and effluent? • General litter?	
Noise and Vibration		
14.	Will you be using any noisy equipment that may cause nuisance?	
15.	Are your works close to a school, or hospital or other place where people may be affected by noise?	
16.	What will you do to reduce noise and vibration impacts?	
17.	What will be your working hours?	
Construction Camp / Workers' Camp		
18.	Where you are planning to set up construction and workers camp?	
19.	Does it meet the stipulated siting criteria?	
20.	How you are going to control pollution from contraction plan and equipment?	
21.	What facilities you will provide at camp for workers?	
Community, Awareness, Consultation, Co-ordination		
22.	How will you keep owners and occupants of shops and residences and other people of the adjoining villages and road users, who are affected, informed about the works?	
23.	How will you ensure all the sub-contractors, supervisor and others on the site, are aware of these environmental aspects?	
24.	How will you co-ordinate with utility works (such as electricity, telephone, cable)?	
25.	Can you satisfy the special regulations or environmental conditions identified in the contract for this project?	
26.	Have you attended any training course on environment, health and safety for similar construction project?	
27.	What steps will be taken to ensure that all the sub-contractors, supervisors, workers and others on the site , are aware of the causes for spread of HIV / AIDS and how to prevent its occurrence?	
Safety		
28.	What activities could cause harm to people or property?	
29.	How will you reduce the risk of impact on people or their property?	
30.	How will you reduce potential injury to your workers and subcontractors?	

Prepared by: _____ Date _____

Approved by: _____ Date _____

Agreed Comments: ____

Note:

- The Contractor shall fill this Checklist road-wise based on ESMF and Contract stipulation.
- This checklist shall serve as Contractor's road specific environmental management plan and serves as basis for subsequent implementation of the safeguard measures by the Contractor and monitoring the same by the Employer.
- This checklist should be filled up during initial road inventory by the Contractor i.e. before any physical works start.

Appendix-F.2

Environmental Management Action Plan (EMAP)

Sl. No.	Environmental Issue	Location/ sources	Mitigation Measures	Implementing Agency	Supervising & Monitoring Agency
Pre-Construction Phase					
P.1	Ecologically sensitive areas (protected forests, reserve forests, wildlife sanctuary, national park, tiger reserve etc.)	Road sections pass through ecologically sensitive areas	- Obtain prior permission for working at sections of the road pass through ecologically sensitive areas from the competent authorities as mentioned in Appendix 5 of EMF. - No tree felling should be allowed - No breaking of fresh forest land should be carried out. - While black-topping, adequate precaution should be taken to avoid any damage to flora and fauna. - Plantation activities will be taken up along the road at cost of PMU, if the concerned Divisional Forest Officer find it necessary.	RCD	Concerned competent authority

Construction Phase					
C.1	Air Pollution	Construction plants, equipment and vehicles	• All vehicles used by the Contractor must have copies of currently valid Pollution under Control Certificates displayed as per the requirement of the Motor Vehicles Department for the duration of the Contract. • <u>For Construction plant following will be maintained:</u> • 1.5 km away from settlement, school, hospital on downwind directions • 1.5 km from any archaeological site • 1.5 km from ecologically sensitive areas i.e. forest, national park, sanctuary • 1.5 rivers, streams and lakes • 500 m from ponds • 500 m from National Highway, 250 m from State Highway, 100 m from District roads and other roads • away from agricultural land • preference to barren land • Obtaining Consent-for-Establishment (CFE) and Obtaining Consent-for-Operation (CFO) under Air and Water Acts from the Bihar State Pollution Control (BSPCB). • Ensure adequate stack height for HMP as stipulated in CFE, • Install emission control devices such as bag house filters, cyclone separators, water scrubbers etc. • Bag house filter / multi-cone cyclone for emission control. For bag house, cartridge filters reported to be more efficient than fabric filters • Pollution control measures for Diesel Generator (DG) set i.e. stack height, acoustic enclosure etc. • Greenbelt along the periphery of plant site.	Contractor	RCD
		Dust during earth works or from spoil dumps	Maintaining adequate moisture at surface of any earthwork layer completed or non-completed to avoid dust emission. Stockpiling spoil at designated areas and at least 5 m away from traffic lane.	Contractor	RCD

		Storage of maintenance materials	Proper stockpiling and sprinkling of water as necessary.	Contractor	RCD
C.2	Water Pollution	Clearing of waterways of cross drainage works including bridges and clearing of longitudinal side drains	• Clearance of waterway will be undertaken before onset of monsoon i.e. early in the month of June. • Debris generated due to clearing of longitudinal side drains and waterways of cross drainage will be stored above high flood level and away from waterway, and reused on embankment slope or disposed at designated areas¹.	Contractor	RCD
		Construction vehicles	• Avoiding cleaning / washing of construction vehicle in any water body	Contractor	RCD

		Construction camp and workers' camp	• Minimum distance of 1.5 km from river, stream and lake and 500 m from ponds • Locate facilities in areas not affected by flooding and clear of any natural or storm water courses. • The ground should have gentle slope to allow free drainage of the site. • The Contractor will prepare, make widely available (especially to staff responsible for water and material management), and implement a Storm water Management Plan (SWMP) for (all) the site(s) after approval from Employer. • The camp must have impervious flooring to prevent seepage of any leaked oil & grease into the ground. The area should be covered with a roof to prevent the entry of rainwater. • Degreasing can also be carried out using mechanical spray type degreaser, with complete recycle using an enclosure with nozzles and two sieves, coarse above and fine below, may be used. • All the waste oil collected, from skimming of the oil trap as well as from the drip pans, or the mechanical degreaser shall be stored in accordance with the Environment Protection (Storage and Disposal of Hazardous Wastes) Rules, 1989. For this purpose, metallic drums should be used. • A separate vehicle washing ramp shall be constructed adjacent to the workshop for washing vehicles, including truck mounted concrete mixers, if any, after each day's construction is over, or as required.	Contractor	RCD

C.3	Noise Pollution and Vibration	Vehicles and Construction machinery Site Controls: All vehicles and equipment will be fitted with silencers and/or mufflers which will be serviced regularly to maintain them in good working condition and conforming to the standard of 75dB (A) at 1m from surface of enclosure. Scheduling of Project Activities: Operations will be scheduled to coincide with period when people would least likely to be affected. Construction activities generating noise level more than 75 dB (A) will be avoided between 10 P.M. and 6 A.M. near residential areas. Protection devices (ear plugs or ear muffs) will be provided to the workers operating in the vicinity of high noise generating machines. Construction equipment and machinery will be fitted with silencers and maintained properly. • Source-control through proper maintenance of all equipment. • Use of properly designed engine enclosures and intake silencers. Vehicles and equipment used will confirm to the prescribed noise pollution norms. Movements of heavy construction vehicles and equipment near public properties will be restricted. • Comply with sitting criteria construction plants and installations and maintenance of pollution control devices as mentioned in Appendix 9 of EMF. • Refer Appendix 10 of EMF for identification, and operation of quarry areas and adopting controlled blasting. • Refer Appendix 16 of EMF for available licensed quarry along the project road.	Contractor	RCD

C.4	Land Pollution	Spillage from plant and equipment at construction camp	Providing impervious platform and oil and grease trap for collection of spillage from construction equipment vehicle maintenance platform Collection oil and lubes drips in container during repairing construction equipment vehicles Providing impervious platform and collection tank for spillage of liquid fuel and lubes at storage area Providing bulk bituminous storage tank instead of drums for storage of bitumen and bitumen emulsion Providing impervious base at bitumen and emulsion storage area and regular clearing of any bitumen spillage for controlled disposal Reusing bitumen spillage Disposing non-usable bitumen spills in a deep trench providing clay lining of 300 mm at the bottom and filled with soil at the top (for at least 0.5 m) to encourage vegetation growth. Refer Appendix 8 and Appendix 9 of EMF.	Contractor	RCD
		Domestic solid waste and liquid waste generated at camp	Collecting kitchen waste at separate bins and disposing of in a pit at designated area/s Collecting plastics in separate bins and disposing in deep trench at designated area/s covering with soil Collecting cottons, clothes etc. at separate bins and burning in a pit (with sand bed)	Contractor	RCD00

Appendix F3

Environmentally Sensitive Areas for Particular Attention

Sl No.	Name of the Road	Circle	Type of Forest and Name of the Forest/ Wild life Sanctuary	Section of the road passing through R.F/ P.F / Wild life Sanctuary	Section of the road passing adjacent to R.F/ P.F/ Wild life Sanctuary (but not passing through)
- Package -					
1					-Nil-

Sl No.	Name of the Road	Circle	Type of Forest and Name of the Forest/ Wild life Sanctuary	Section of the road passing through R.F/ P.F / Wild life Sanctuary	Section of the road passing adjacent to R.F/ P.F/ Wild life Sanctuary (but not passing through)
2					Nil
3					-Nil-
4					-Nil-

Notes:

1. Works shall not proceed in these areas without clearance from the Employer .
2. N.A. – Not Applicable - No Approval required proceeding with works.