



**NAYA RAIPUR DEVELOPMENT AUTHORITY**

**Tender document for the Repair and Rehabilitation  
works of PWD Roads which fall within the  
Jurisdiction of NRDA in Naya Raipur.**

**(Following Three-Envelope Tender Procedure)**

**TENDER DOCUMENT (PART ONE)**

**Percentage Rate Tender**

**NIT No: 16 / RPWD/ CONR/ CE(E) / NRDA / 2012-13, Raipur,**

**Dated: 05.05.2012**

**Issued by:** Chief Executive Officer,  
Naya Raipur Development Authority (NRDA)  
Near Mantralaya Mahanadi Dwar  
Raipur 492 001, Chhattisgarh  
Tel: (0771) 4066011, Fax: (0771) 4066188,  
E-mail: ceo@nayaRaipur.com

## Tender Document Contains

- (a) Only schedule "A" and Section-I of schedule "D" are to be filled & signed by the tenderer
- (b) All the certificates as per pre qualification criteria shall be appended with relevant forms of schedule "D"

### 1. PART ONE (NRDA F-1)-(Attached herewith, to be submit along the tender)

#### Part (A)

- a) Press Notice
- b) Detailed NIT

#### Part (B)

- a) Schedule-A
  - (i) Cost Abstract
  - (ii) Bill of Quantities

- b) Schedule-B –NIL
- c) Schedule-C –NIL
- d) Schedule-D

#### Section-I..... Technical tender forms

- (i) Letter of Technical Tender
- (ii) Tenderer's Information Sheet
- (iii) Annual Turnover
- (iv) Specific Construction Experience
- (v) Declaration
- (vi) Check list for Technical tender evaluation

#### Section –II .....Scope of work

#### Section –III..... Technical specifications of work

#### Section –IV..... Special Conditions of Contract

#### Section –V..... List of approved makes.

#### Section –VI..... Drawings



- e) Schedule-E
- f) Schedule-F

### 2. PART TWO (NRDA F-2/3 )-Standard form (Not Attached herewith, and not to be submitted along the tender)

**Important note: - Link site [http:// nayaraipur.com/documents/gcc.pdf](http://nayaraipur.com/documents/gcc.pdf)**

1. General Guidelines
2. Tender
3. General rules and directions
4. Conditions of contract
5. Clauses of contract
6. Model rules relating to labour, water supply and sanitation in labour camps safety code
7. Contract forms
  - (a) Draft Format for Performance Security
  - (b) Earnest Money Deposit Form (Bank Guarantee)
  - (c) Format of Contract Agreement
  - (d) Draft Format for Performance Guarantee for Water Proofing and Anti-termite Works
  - (e) Indemnity Bond
  - (f) Indenture Bond
  - (g) Notice for Appointment of Arbitrator
8. Proforma of schedules (Schedule 'A' to Schedule 'F')

# Press Note

		<b>NAYA RAIPUR DEVELOPMENT AUTHORITY</b> Near Mahanadi Dwar, Mantralaya, Raipur-492001, Chhattisgarh Ph:0771-4066011 Fax:0771-4066188, Website: <a href="http://www.nayaraipur.com">www.nayaraipur.com</a>			
<b><u>Tender Notice</u></b>					
<b>NIT No. : 16 / RPWD / CONR / CE(E) / NRDA / 2012-13, Raipur</b>		<b>Dated: 05.05.2012</b>			
Sealed tenders are invited from enlisted registered contractor with any Central / state Govt. or PSU in A-2 in category and above in CG PWD or equivalent, who fulfill the Pre-Qualification criteria, for the work of <b>"Repair and Rehabilitation of PWD Roads which fall within the Jurisdiction of the NRDA in Naya Raipur"</b> .					
Time allowed inc. rainy season	Estimated Cost (INR Lakhs)	EMD (INR)	Cost of Tender Doc. (INR )	Pre -Qualification Criteria Avg. Annual turnover in last 3 financial years (INR Lakhs.)	
2 months	28.63	58000	2000	170	Should have completed satisfactorily similar works during last 5 years i.e. after 30/04/2007, in any Govt./ PSUs as below: - One Road work costing not less than INR 23 Lakhs OR Two Road works costing not less than INR 15Lakhs each.
Tenders can be downloaded from the website <a href="http://www.nayaraipur.com">www.nayaraipur.com</a> from <b>05 .05. 2012</b> . The last dates for submission of the tenders by speed post/registered post/ courier is <b>24.05.2012, upto 15.00hrs</b> . Technical Documents shall be opened thereafter on same day after <b>16.00hrs</b> . <b>Amendment in tender, if any, will only be uploaded on the website and shall not be published in any newspaper.</b>					
				<b>Chief Executive Officer</b>	

Signature of Contractor.....

Signature of NRDA.....

## NAYA RAIPUR DEVELOPMENT AUTHORITY (NRDA) RAIPUR, CHHATTISGARH

### DETAILED NIT

NIT No : 16 /RPWD / CONR/ CE(E) / NRDA / 2012-13, Raipur,

Dated: 05.05.2012

Last date and time for submission of tenders: 1500 hrs on 24.05.2012

- Percentage Rate Tenders are invited in the prescribed tender documents by the Chief Executive Officer, Naya Raipur Development Authority (NRDA), Raipur Chattishgarh from eligible contractors registered with any Central / state /semi Government of India or public sector undertaking. Who fulfill the prequalification criteria,
- The detailed NIT is as under:-

Name of work	Repair and Rehabilitation of PWD Roads which fall within the Jurisdiction of the NRDA in Naya Raipur
Estimated Cost (INR in Lakhs)	28.63
EMD (INR)	58000
Time allowed including rainy season	2 Months
Cost of Tender (In INR)	2000.00
Tender to be uploaded on NRDA website to enable download	02-05-2012
Last Date and time of submission of Tender	24-05-2012 at 15.00Hrs
Date and time of opening of Tender	24-05-2012 at 16.00Hrs

- Intended eligible Tenderers may obtain further information from the office of Employer and inspect the Tender Document at, NRDA Raipur from 11 AM to 4 PM on all working days.
- Pre Qualification Criteria** -To be eligible under the contract, the intending tenderer should meet the following mandatory criteria **3.1 and 3.2 (A & B)**:

#### 3.1 Financial Criteria

**Average Annual Turnover:** Minimum average annual gross turnover of the bidder shall be INR 170Lakhs during any three of the four complete financial years ( i.e 2008-09, 2009-10 ,2010-11 & 2011-12) . In case of 2011-12, if the audited balance sheet is not available, unaudited balance sheet duly certified by CA shall be considered .( Audited balance sheet duly signed by CA should be enclosed).

Annual turnover is total certified payments received for contracts in progress or completed during the financial year

**For above, the Tenderer has to submit audited balance sheets of their financial turn over/ accounts along with profit and loss account for the last three(3) years, along with the Tender. Where necessary, the Employer can make enquiries with the Tenderer's Bankers.**

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**3.2 Technical Criteria**

<b>A</b>	Intending tenderer shall be enlisted or registered contractor with any Central / state Govt. or PSU in A-2 category and above in CG PWD or equivalent.
<b>AND</b>	
<b>B</b>	Intending tenderer should have completed satisfactorily similar works during last 5 years i.e after 30/04/2007, in any Government. or Public sector undertaking as below: - <p style="text-align: center;"><b>(a) One Road work costing not less than INR 23 Lakh.</b></p> <p style="text-align: center;"><b>OR</b></p> <p style="text-align: center;"><b>(b) Two Road work costing not less than INR 15 Lakh each.</b></p>

**Note: -**

- a) Ongoing project / part project experience shall not be considered for evaluation.
- b) For the benefit of the intending tenderer's a checklist is enclosed at Schedule-D (vi), for the documents to be submitted along with tender.

**Certificates:**

- a) All tenderers should submit the valid registration certificate. Commercial tax certificate, balance sheet with profit and loss statement for at least 3 years.
- b) The tenderers shall also submit satisfactory completion certificates in support of each quoted experience along with work order. The satisfactory completion certificate should be signed by an officer not below the rank of Executive Engineer concerned in case of Government department or the rank of General Manager in case of public sector as the case may be.
- c) **All the documents to be submitted shall be duly notarized.**
5. The tender document for the above work is available on NRDA's **websites:** [www.nayaraipur.com](http://www.nayaraipur.com) and [www.cg.gov.in](http://www.cg.gov.in) Tenderer will have to download the tender document, and shall submit the tender along with the tender cost as mentioned in the Para 2 above. For tender cost, DD drawn in favor of "CHIEF EXECUTIVE OFFICER, NRDA" should be enclosed. The tenderers shall attach the cost of tender document along with EMD as mentioned in the Para 2 above.
6. Three envelope Tender procedures shall be followed. Tenderer has to submit three sealed envelopes containing the documents as detailed below simultaneously, enclosed in a **Fourth Envelope duly mentioned in the top the name of work, NIT No. and firm address.**

<b>ENVELOPE-1</b>	EMD & Cost of tender in the prescribed format
<b>ENVELOPE-2</b>	Technical Tender consisting of the documents/certificate in proof of prequalification criteria PART ONE (NRDA F-1) excluding schedule-A
<b>ENVELOPE-3</b>	Financial Tender PART ONE (Schedule-A)

All the three tenders shall be put in a fourth envelope which shall be dully sealed. **All the 4 envelopes shall be super-scribed with the Name of Work and Name of intending tenderer. Respective envelopes shall also be marked as envelope 1, envelope 2, and envelope 3 as detailed above.** Tenders who do not conform to the specified requirements will be held non-responsive.

Initially, only the **envelope -1** shall be opened, if found responsive then the **envelope-2** (Technical tender) shall be opened at the date and time given in the Tender Document. The Price tender shall remain sealed and unopened in the custody of NRDA.

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After technical evaluation, date and time of opening of price bid shall be communicated by NRDA to the successful tenderer in technical evaluation. The Price tenders of only the tenderer found qualified as per the PQ criteria shall be opened in presence of the tenderer who wish to be present.. The Contract shall be awarded to the tenderer whose tender has been determined to be the lowest evaluated as per tender conditions.

7. All Tenders must be accompanied with the
  - a) **Earnest money** as mentioned in the Para 2 above. The Earnest money shall be payable in favour of Chief Executive Officer NRDA, in the form of a **Bank Draft payable at Raipur/ Bank Guarantee operatable at Raipur drawn from a nationalized bank/ Scheduled Bank** which shall be valid for a period of 6 (Six) months from the date of submission of tender.
  - b) Cost of tender as mentioned in the Para 2 above. The Cost of tender money shall be payable in favour of Chief Executive Officer NRDA, in the form of a **Bank Draft payable at Raipur drawn from a nationalized bank/ Scheduled Bank** which shall be valid for a period of 6 (Six) months from the date of submission of tender.
8. Tenders shall be submitted at the address below on or before due date. Tenders received after the due date or time for tender submission (Late tenders) will either not be accepted or if inadvertently accepted, will not be opened and shall be rejected and returned back to the tenderer subsequently.
9. (a) NRDA reserves full rights to reject any or all the tenders without assigning any reason, and to seek any further information from the tenderers. The selection shall be at the entire discretion of NRDA and the NRDA's decision in this respect shall be final and binding. Further NRDA reserves right to split the contract in two or more parts. This shall be at the entire discretion of NRDA and NRDA's decision in this matter shall be final and without appeal.  
 (b) The competent authority on behalf of NRDA does not bind himself to accept the lowest or any other tender, and reserves to himself the authority to reject any or all of the tenders received without the assignment of a reason. All tenders in which any of the prescribed conditions is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer, shall be summarily rejected.
10. Tenders shall be valid for 90 (Ninety) days from the last date of submission of the tender. NRDA will not be responsible for any costs or expenses incurred by Tenderers in connection with the preparation or delivery of Tenders. If any tenderer withdraws his tender before the said period or issue of letter of acceptance/intent, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the NRDA, then the NRDA shall, without prejudice to any other right or remedy, be at liberty to forfeit entire amount of Earnest Money as aforesaid.
11. Pre tender meeting with the tenderers will be held as mentioned above in the Office of **Chief Executive Officer**, NRDA, Raipur. Tenderers are advised to participate in the pre-tender meeting. The intending tenderers are advised to send their queries to NRDA either by post or by email to [ceo@navaraipur.com](mailto:ceo@navaraipur.com) and [cee@navaraipur.com](mailto:cee@navaraipur.com) upto the date mentioned in the para 2 as above.
12. **Clarification/ amendments, if any shall be uploaded on website only.**
13. Period for completion of work as mentioned above at Para 2 is inclusive of rainy season.
14. Approved hard copy of the standard document is available in the office of the employer and could be seen on any working day during office hours at the following address:-

*Chief Engineer( Engg), NRDA*

*2<sup>nd</sup> floor, Guru Govind Sarang Complex, New Rajendra Nagar,*

Signature of Contractor.....

Signature of NRDA.....

*Raipur-492002, Phone: 0771-4094035*

15. The intending tenderers are advised to cross check the downloaded version of the tender document with the hard copy available with NRDA.
16. In case of any discrepancy between the downloaded tender and the approved hard copy, the approved hard copy shall hold good for contractual as well as legal purposes.
17. 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 at their own cost obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect the execution of work and shall incorporate the cost of such effects while quoting the tender, A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no 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 tools & plants, water, electricity, access facilities for workers and on all other services required for executing the work unless otherwise specifically provided in the contract documents. Submission of 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 local conditions and other factors having a bearing on the execution of the work.
18. 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.
19. The successful tenderer shall be required to execute an agreement on a non judicial stamp paper of appropriate value with the **Chief Engineer ( Engineering), NRDA** in the Proformas annexed to the tender document, within 7 days of the issue of letter of acceptance/ award by the NRDA. The cost of non judicial stamp paper shall be borne by contractor. In the event of failure on the part of the successful tender to sign the agreement within 7 days, the entire earnest money will be forfeited and tender shall be cancelled.
20. The successful tenderer, upon issue of letter of acceptance, in addition to execution of an agreement on a non judicial stamp paper of appropriate value, shall also be required to furnish an irrevocable Performance Bank Guarantee of requisite amount to the **Chief Engineer (Engineering), NRDA** in the Performa annexed to the tender document, within 7 days of the issue of the letter of acceptance /award of Tender by the NRDA. In the event of failure on the part of the successful tenderer to furnish the Performance Bank Guarantee within 7 days, the earnest money will be forfeited and tender shall be cancelled.
21. This Notice Inviting Tender shall form a part of the contract document. In accordance with clause 1 of the contract, the letter of acceptance/ award shall be issued in favour of the successful tenderer/ contractor. After submission of the performance guarantee, by the contractor, the General arrangement drawings and other details for commencement of work shall be issued. The contract shall be deemed to have come into effect on issue of communication of letter of acceptance of the tender. On such communication of acceptance, the successful Tenderer/Contractor shall, within 7 days from such date, formally sign the agreement consisting of:-
  - a) PART ONE of the Tender documents along with detailed NIT as issued to the contractor at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto and
  - b) PART TWO of the Tender document i.e. "General conditions of contract duly modified / corrected to the extent as specified under PART ONE (though not issued to the contractor

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but always available for inspection on written demand at the office of the officer inviting tenders specified under Schedule F of PART ONE of the Tender Document) and deemed to have been consulted, inspected, understood and considered by the tenderer before quoting and submitting his tender.

- c) Agreement signed on non-judicial stamp paper of appropriate value as per prescribed proforma of tender documents.
- 22. **GCC is available as a standard NRDA Publication and can also be downloaded free of cost from the NRDA web site under title “General conditions of contract” for Contractors in construction Contracts”** However contractors are advised to refer to PART ONE of the tender document carefully and thoroughly for corrections/ modifications in the “General conditions of contract” Standard form NRDA F-2/3 is also available for inspection in the office of the Engineer in charge on written demand from contractors. **Link site <http://nayarapur.com/documents/gcc.pdf>**
- 23. While submitting the tender the contractor shall clearly and legibly write his full mailing address including PIN code, Telephone/ mobile no. / Fax Numbers / e-mail address etc for communication purposes and shall inform the Engineer in Charge about any change from time to time in his postal / mailing address. The communication shall be dispatched only at the contractor’s such latest informed address and NRDA shall in no way be responsible for non-receipt of correspondence by the contractor.
- 24. It is found that the contractor has misrepresented that facts or has attempted to secure or has secured the work by misrepresenting the facts or by submitting false or forged documents then the Entire Earnest Money submitted by the contractor and or the Performance Guarantee and/ or the Security Deposit as the case may be, shall be liable to be absolutely forfeited and such contractor / individuals shall also be liable to be prosecuted for cheating / forgery / fraud etc as per law.
- 25. **In respect of percentage rate tenders:** contractor should quote his separate tender percentage rate above or below or at-par the following schedule of rates-
  - (a) Building Work: including Water supply & Sanitary fittings - The Schedule of rates issued by the Engineer In Chief PWD Raipur, in force from JUNE 2009 and amended up to date of issue of NIT.
  - (b) Road Work : The Schedule of rates issued by the Engineer In Chief PWD Raipur, in force from April 2010 and amended up to date of issue of NIT
  - (c) Electrical work: The Schedule of rates issued by the Engineer In Chief PWD Raipur, in force from April 2010 and amended up to date of issue of NIT.
  - (d) The percentage of tender above/below or at-par with the relevant schedule of rates inclusive of all amendments issued up to the date of the issue of notice inviting tenders should be expressed on the tender form itself, both in words and figures in such a way that interpolation is not possible and all over writings should be neatly scored out and rewritten and the corrections should be duly attested and dated prior to the submission of tender.
  - (e) Tenders not specifying percentage in words will summarily be rejected. In the case of variation between the rates stated in figure and words, the lesser of the two shall be deemed to be valid.

Signature of Contractor.....

Signature of NRDA.....



- (f) Any amendments to the rates after date of issue of this tender notice or the date of issue of any amendments to the N.I.T. Specifically notifying the said amendments to the current schedule of rates, shall not apply to this tender.
  - (g) The percentage tendered by the contractor will apply to those rates which find place in the Schedule of rates mentioned in clause 25(d) or have been derived from the said Schedule of rate and not to other items of work.
  - (h) The percentage quoted by the contractor shall not be altered by the contractor during the term of contract the deduction or addition, as the case may be of the percentage will be calculated on the amount of bill for the work done, after deducting the cost of materials supplied departmentally, if any at rates specified in the agreement.
  - (i) If the work involves more than one S.O.R. even then the contractor shall quote only single rate, applicable to the concerned S.O.R. (for example- Building S.O.R., Road S.O.R and Electrical S.O.R.)
  - (j) The tendered rates of items against which no rate or price is entered by the tenderer will be taken as zero and the price of the same shall be deemed to have been covered by the rates/amount quoted in other items.
26. The tender document shall be written legibly and free from erasure, overwriting or conversion of figure. Any correction where unavoidable shall be made by crossing out, rewriting and attestation by the tenderer.
  27. All royalties be paid by the contractor as also all tolls, duties, local and other levies including sales tax, insurances & workman compensation act etc.
  28. Contractor will be bound to follow CG Model rules relating to its water supply & sanitation in labour camp.
  29. The contractor shall pay not less than the minimum wages to labours engaged by him on the work.
  30. Department reserves the right to take up the work departmentally or to award any work on contract in the vicinity without prejudice to the terms of contract.
  31. If the rate quoted by the lowest (LI) of the tenderer is considered unbalanced (in relation to the Department's estimate of cost of work to be performed under the contract) by the CEO, NRDA, then tenderer shall submit detail price/rate analysis of major items of the work within 7 days of such notice so as to demonstrate the internal consistency of these price/rate(s) with his quoted price/rate(s). After evaluation by tender sanctioning authority CEO, NRDA may require the tenderer to submit additional Security upto 5% of the estimated cost put to tender for the performance of the agreement in the shape of F.D. or a BG receipt in favor of the CEO, NRDA before signing of the agreement, which shall be refunded along with the normal S.D. after Completion of work. If he fails to complete the work or leave the work in complete, this 5% additional SD, shall also be forfeited by the department, & the agreement shall be terminated and action shall be taken in accordance of relevant contract clause of the agreement.
  32. **Important Instructions to Tenderers** :The tenderers who have down loaded the tender documents from the web site, should read the following important instructions carefully before

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actually quoting the rates & submitting their tender on the tender document downloaded from the web site:

- a) The tenderer should see carefully & ensure that all the pages of PART ONE (NRDA F-1) of the tender document including schedule of quantities of items of work (NRDA F-1 Schedule-A) has been down loaded properly & completely.
- b) The printout of the downloaded tender document shall be taken on A-4 size plain white paper only & the printer settings shall be dept to ensure that the downloaded document is printed in the same manner and pattern / setting as appearing on the web site & there is no change in the formatting, number of pares etc.
- c) The tenderer should ensure that no page in the down-loaded tender document is missing and all pages in the down-loaded tender document as printed are legible & clear & are printed on a good quality paper.
- d) The tenderer should ensure that every page of the down-loaded tender document is signed by tenderer himself.
- e) The tenderer should ensure that the down loaded tender document is properly bound and wax sealed before submitting the same in the envelope. **Loose / Spiral binding** shall be liable to be rejected.
- f) In case of any correction/ addition / alteration/ omission in the downloaded tender document vis a vis that in the **Standard DRAFT Tender Document** available in the office of NRDA, it shall be liable to be rejected.
- g) The tenderer shall furnish a declaration to this effect that no addition/ deletion/ corrections have been made in the downloaded tender document being submitted by him and it is identical to the tender document appearing on the Web-site and with the **Standard DRAFT Tender Document** available in the officer of the office inviting the tenders.

**Chief Executive Officer,**  
NRDA Near Mantralaya Mahanadi Dwar,  
Raipur 492 001 Chhattisgarh  
Phone No (0771) 4066011, 4268643.

Signature of Contractor.....

Signature of NRDA.....

# **SCHEDULE– D**

## **Section-I**

### **Technical Tender Forms**

## Schedule-D

### Section I - Tender Forms Technical

This Section contains the forms which are to be completed by the Tenderer and submitted as part of his PART ONE (NRDA F-1).

#### Table of Forms

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Signature of Contractor.....

Signature of NRDA.....

## (i) Letter of Technical Tender

Date: \_\_\_\_\_

Tender Package No.: \_\_\_\_\_

NIT No.: \_\_\_\_\_

To:

Chief Executive Officer,

NRDA, Near Mantralaya Mahanadi Dwar, Raipur 492 001,

Chhattisgarh.

Ref for NIT no:-----

**Subject:** Name of the work:- -----

Dear Sir,

I/We, the undersigned, declare that:

- (a) I/We have examined and have no reservations to the Tender Document, including Addendum if any, minutes of meeting, clarification to the queries etc.
- (b) I/We offer to execute the subjected under in conformity with the Tender Documents and the addendums.
- (c) I/We have satisfied ourselves as to the location of the site and working conditions, examined the requirements of NRDA and have obtained all the information necessary for the successful and timely completion of the work.
- (d) I/We have submitted the Earnest Money Deposit as specified in the tender document which will not bear any interest and shall be subjected to forfeiture on following defaults.
  - (i) if we withdraw our Tender during the period of tender validity as specified in Detailed NIT para 9 or
  - (ii) if we fail to:
    - furnish a Performance Security in accordance with Detailed NIT Para 19 or
    - sign the Contract in accordance with Detailed NIT Para 18; or
    - accept the correction of its Tender Price pursuant to Detailed NIT Para 24.
  - (iii) if we have given the false documents in support of qualification with the technical tender.
- (e) My/Our Tender shall be valid for a period of 90 days from the date fixed for the tender submission deadline in accordance with the Tender Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (f) If my/our Tender is accepted, we commit to obtain a Performance Security in the amount as specified in the tender document for the due performance of the Contract and sign the agreement;
- (g) I/We are not participating, as Tenderers, in more than one Tender in this Tendering process, in accordance with the Tender Document;
- (h) My/our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by NRDA, Raipur;

Signature of Contractor.....

Signature of NRDA.....

- (i) I/We understand that this Tender, together with your written acceptance thereof included in your letter of acceptance, shall constitute a binding contract between us, until a formal Contract is prepared and executed;
- (j) I/We understand that you are not bound to accept the lowest evaluated tender or any other tender that you may receive.
- (k) I/We hereby pay the Earnest Money Deposit of required amount in the form of a demand draft on a nationalized bank (-----Bank Name and address) and operatable at Raipur in favour of the 'Chief Executive Officer, NRDA, Raipur' for the said amount and is attached.
- (l) I/We hereby declare that, the entire work including Addendum/ Corrigendum, if any, shall be completed in all respect within the time limit specified in the NIT.
- (m) I/We here by authorize the Employer to get all bank guarantee verified and got confirmed from concerned Bank.

Signature: -----

Signed by: -----(Name)

Designation: -----

For and on Behalf of -----(Name of Tenderer)

Date:

Signature of Contractor.....

Signature of NRDA.....

## (ii)Tenderer's Information Sheet

Tenderer's Information		
Tenderer's legal name		
Tenderer's legal address		
Tenderer's authorized representative (name, address, telephone numbers, fax numbers, e-mail address)	Name:	Address:
	Telephone : Fax :	E-Mail:
Tenderer's details of Incorporation	Place of incorporation/ registration:	Year of incorporation:
<p>Attached are copies of the following original documents.</p> <p><input type="checkbox"/> 1. Articles of incorporation or constitution of the legal entity named above.</p> <p><input type="checkbox"/> 2. In the case of government-owned entity, documents establishing legal and financial autonomy and compliance with commercial law.</p>		

### Details of the office closest to Raipur (if available)

1.	Address of Office	
2.	Telephone :	Contact :
3.	Fax :	E-Mail :

Signature of Tenderer

Date: \_\_\_\_\_

Signature of Contractor.....

Signature of NRDA.....

### (iii) Annual Turnover

Annual Turnover Data for the Last 3 Years			
Year	Amount and Currency	Exchange Rate if any	INR Equivalent
2008-09			
2009-10			
2010-11			
Average Annual Turnover for the last 3 years in INR			

All Tenderers are requested to complete the information in this form

The information supplied should be the Annual Turnover of the Tenderer in terms of the amounts billed to clients for each year for contract in progress or completed, converted to INR at the rate of exchange at the end of the period reported.

As a proof of the above, the contractor shall submit the copies of the balance sheet for last three years along with audited profit & loss statement duly signed by the chartered accountant.

Signature of Tenderer

Date: \_\_\_\_\_

Signature of Contractor.....

Signature of NRDA.....



**(iv) Specific Construction Experience**

Fill up one (1) form per contract.

Details of Contract			
Contract No . . . . . of . . . ...	Name of work		
Award Date		Completion Date	
Role in Contract	<input type="checkbox"/> Contractor	<input type="checkbox"/> Sub-contractor	
Total Contract Amount	INR		
Employer's Name Address Telephone/Fax Number E-mail			
Description of the work executed			

**Note:** Attach copies of work order and satisfied completion certificates in support of each quoted experience. The completion certificate should be signed by the officer not below the rank of concerned Executive Engineer in case of Government department or in the rank of General Manager in case of public sector/private sector as the cases may be.

Signature of Tenderer

Date: \_\_\_\_\_

Signature of Contractor.....

Signature of NRDA.....

## (v)DECLARATION

### (TO BE SIGNED BY THE TENDERER SUBMITTING THE TENDR ON DOWNLOADED TENDER DOCUMENT)

I/We hereby declare and certify that:

1. I/We are submitting the tender in the tender document downloaded by me /us from the website & we certify that there is no change in formatting, numbering of pages etc. In the downloaded documents.
2. I/We are submitting the tender in the tender document which is exactly similar and identical to the one available on the website and also as available with the officer inviting tenders.
3. I / We have no made any modifications / corrections / additions / omissions etc in the tender documents downloaded from web by me / us.
4. I / We have checked that no page in the downloaded tender document is missing and all the pages as per web site are available & that all the pages of tender document submitted by us are clear & legible.
5. I / We have signed (with stamp) all the pages of the tender document before submitting the same.
6. I / we have wax sealed the tender documents properly before submitting the same.
7. I / We have submitted the application for issue of tender documents on the prescribed format separately along with the cost of tender documents and also the attested Xerox copies of the eligibility documents prescribed for respective work in the NIT.
8. I / We have read carefully & understood the entire Tender document including important instructions to the tenderers submitting the downloaded tender.
9. In case at any stage whatsoever at a later date it is found/ revealed that there is a difference in our downloaded tender documents from the original **Standard DRAFT Tender Document**, NRDA shall have the absolute right to take any action as deemed fit without any prior intimation to me / us.
10. In case at any stage whatsoever at a later date it is found that there is difference in our downloaded tender document from the Standard DRAFT Tender Document, we clearly understand that our work shall be liable to be cancelled and Earnest Money/ Performance Guarantee / Security deposit etc all are liable to be forfeited by NRDA and in such an eventuality I / We shall have no right or claim for any damages / compensation from NRDA on this account. Further in such case I / We may also be debarred by NRDA for further participation in the tendering in the concerned NRDA & be removed from the approved list of contractors of NRDA.

Dated.....

(TENDERER)  
(SIGNATURE WITH SEAL/ STAMP)

**(vi) CHECK LIST FOR TECHNICAL TENDER EVALUATION**

Name of the Agency:								
S. No	Document	Details			Enclosed at annexure Page No			
					From	To		
1	Tender Document Cost	Downloaded from NRDA Website Details of DD						
		Amount						
		Name of the Bank & Branch						
		Date						
		D.D no & Photo copy attached	Yes	No				
2	Earnest Money Deposit (EMD)	Amount						
		Form of EMD	DD					
		Issuing Bank & Branch						
		No & Date	Yes	No				
		Photo copy attached						
	Contractor Registration Certificate	Class in which registered						
		Name of Department						
		Registration Number & Date						
		Validity						
		Notarized	Yes/No					
4	Commercial Tax Certificate	Registration Number:						
		Name of the Office						
		Notarized	Yes/No					
5	Average Annual Turnover in Lacs (For the Financial	2008-2009						

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Signature of NRDA.....

Name of the Agency:					
S. No	Document	Details		Enclosed at annexure	
				Page No	
				From	To
	year 2008-09, 2009-09, 2010-11)	2009-2010			
		2010-2011			
		Chartered accountant certificate in original or photo copy duly notarized can be submitted			
6	Details of the projects/works completed as pre-qualification criteria	Name of the Work			
		Work Completed	Yes/No		
		Cost of the Project			
		Certificate Enclosed	Yes/No		
		Notarized	Yes/No		
		Name of the Work			
		Work Completed	Yes/No		
		Cost of the Project			
		Certificate Enclosed	Yes/No		
		Notarized	Yes/No		

Note: The above check list only provides for those documents which are mandatory for the tender pre-qualification criteria. Tenderers are required to append, other documents also with the technical tender as required in the detailed NIT or elsewhere in the PART ONE (NRDA F-1).

Signature of Tenderer

Date: \_\_\_\_\_

Signature of Contractor.....

Signature of NRDA.....

# **SCHEDULE– D**

## **Section-II**

### **Scope of work**

Signature of Contractor.....

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## Works Requirement

This section contains the brief idea of scope of work, supplementary information drawings etc. regarding the work to be executed under instant tender, may vary as per site requirement. In case of any change the decision of Engineer-in-charge will be final and binding to the contractor.

### GENERAL SCOPE OF WORK

#### 1. SCOPE OF WORK

The Contractor shall undertake the repair and rehabilitation works on the PWD Roads as detailed in the Table 1 below and as per direction of Engineering in-Charge. The repair and rehabilitation works, shall be carried out in accordance with the Technical Specifications provided in IRC codes and MORTH standards and completed within the time indicated in the work order issued by NRDA for the execution of the repair and the rehabilitation works.

##### **Repair and Rehabilitation Works:**

The Works shall, inter alia, include the following, as specified or as directed.

- a) Raising the lowered earthen shoulders,
- b) Surface treatment and patch repairing,
- c) Pot hole filling,
- d) Carry out special tests as directed and mentioned in technical specifications wherever required.
- e) Any other item of work as may be required to be carried out for completing the road works in all respects in accordance with the provisions of the Contract.
- f) During the period of the Contract, the Right of Way and all existing roads shall be kept open for traffic and maintained in a safe and usable condition. Residents along and adjacent to the Works are to be provided with safe convenient access to their properties at all times. Traffic control and traffic diversions shall be used as necessary to protect the Works and maintain them as directed by the Engineer.
- g) All aspects of Quality Assurance of various components of the Work.
- h) Clearing of site and handing over of the Works;

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Table 1 Detail List of PWD Roads Identified for the Repair and Rehabilitation Works in Naya Raipur

1	<b>Nimora-Thannod Road (6km)</b>
a	Lowered Shoulder Raising from Km.1.5 to Km.5.1
b	Laying of Base and Surface Course at Km.3.1
e	Surface Treatment from km 5.4 to k.m 5.6
2	<b>Kedri-Uparwara Road (4km)</b>
a	Lowered Shoulder Raising from k.m.0.00-k.m0.9
b	Lowered Shoulder Raising from k.m.0.9-k.m 2.3
c	Surface Treatment Pot Hole Filling at k.m.3.3
d	Surface Treatment Patch Repair at k.m.2.7
3	<b>Kayabandha-Kotrabata-Sendh(5.4km)</b>
a	Surface Treatment Patch Repair at k.m.0.5
b	Surface Treatment Patch Repair at k.m.1.3 to k.m1.6

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# **SCHEDULE– D**

## **Section-III**

### **Technical Specification of Works**



The broad design specifications for the works are provided in this section of document, but the general specifications for all works are provided in Notice Inviting tender

(i) **TECHNICAL SPECIFICATIONS**

**PART I: ROAD WORKS**

**1.1 PREAMBLE**

**1.1.1 General**

The Technical specifications covering the materials and the workmanship aspects as well as method of measurements and payments are included in this section. These specifications cover the items of civil and non-civil works coming under scope of this document. All work shall be carried out in conformity with the same. These specifications are not intended to cover the minute details. The works shall be executed in accordance with good practices followed for achieving high standards of workmanship, thus ensuring safety and durability of the construction as per MOSRTH standards and relevant IRC codes. All codes and standards referred to in these specifications shall be the latest thereof, unless otherwise stated.

**1.1.2 Inclusive Documents**

The provisions of special conditions of contract, those specified elsewhere in the tender document, as well as execution drawings and notes, or other specifications issued in writing by the Engineer shall form part of the technical specifications of this project.

**1.1.3** The attention of the contractor is drawn to those clauses of codes, which require supporting specification either by the Engineer or by 'Mutual agreement between the supplier and purchaser'. In such cases, it is the responsibility of the tenderer / contractor to seek clarification on any uncertainty and obtain prior approval of the Engineer before taking up the supply/construction. In absence of such prior clarification, the Engineer's choice/design will be final and binding on the contractor without involving separately any additional payment.

**1.1.4 Measurement And Payment**

The methods of measurement and payment shall be as described under various items and in the Bill of Quantities. Where specific definitions are not given, the methods described in B.I.S. Code will be followed. Should there be any detail of construction or materials which has not been referred to in the Specification or in the Bill of Quantities and Drawings but the necessity for which may be implied or inferred therefrom, or which is usual or essential to the completion of the work in the trades, the same shall be deemed to be included in the rates and prices entered by the contractor in the Bill of Quantities.

**1.1.5 Defective Works**

All defective works are liable to be demolished, rebuilt and defective materials replaced by the contractor at his own cost and time.

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## 1.2 SITE INFORMATION

- 1.2.1 The information given hereunder and provided elsewhere in these documents is given in good faith by the Employer but the Contractor shall satisfy himself regarding all aspects of site conditions and no claim will be entertained on the plea that the information supplied by the Employer is erroneous or insufficient.
- 1.2.2 The area in which the works are located is mostly plain terrain. The approximate longitude and latitude of the region being  $81^{\circ} 49'$  and  $21^{\circ} 13'$  respectively.
- 1.2.3 **General Climatic Conditions**
- 1.2.3.1 The variation in daily temperature in this region is as under:  
During summer months, from about 30degree C minimum 42 degree C maximum. During winter months, from about 10degree C minimum 20 degree C maximum.
- 1.2.3.2 The average annual rainfall in the area is in the range of 1200 mm to 1400 mm, a good portion of which is concentrated during the months of June to September each year.
- 1.2.3.3 The range of relative humidity varies from a minimum of 21% to a maximum of 89%.
- 1.2.3.4 **SEISMIC ZONE:** The works are located in seismic Zone II as defined in IRC: 6-1996.

## 2. GENERAL REQUIREMENTS

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

### 2.1 PART – I - General Technical Specifications

The General Technical Specifications shall be the “SPECIFICATIONS FOR ROAD AND BRIDGE WORKS” (FOURTH REVISION – 2001, Reprint 2006), as corrected in the original issued by the Ministry of Shipping, Road Transport & Highways (MORT & H), FORMERLY KNOWN AS THE Ministry of Surface Transport (Road Wing), Government of India and published by the Indian Roads Congress (IRC), with a cross reference to relevant Bureau of Indian Standards (BIS) for materials or other aspects not covered by the IRC.

### 2.2 PART - II - Supplementary Technical Specifications

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

- 2.2.1 A particular Clause or a part thereof in “SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (FOURTH REVISION – 2001, Reprint 2006)” as corrected in the original referred in PART - I above, where Amended/Modified/Added upon, and incorporated in PART-II, referred to

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above, such Amendment/Modification/Addition supersedes the relevant Clause or part of the Clause.

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

2.2.3 In so far as Amended/ Modified/ Added Clause may come in conflict or be inconsistent with any of the provisions of the said Specifications under reference, the Amended/ Modified/ Added Clause shall always prevail.

2.2.4 The Additional Specifications shall comprise specifications for particular item of works not already covered in PART - I.

2.2.5 The Sub-Clauses of the following Sections in the "Specifications for Road and Bridge Works (FOURTH REVISION – 2001, Reprint 2006) have been amended/ modified/ added upon 100, 200, 300, 400, 800, 1000,1500,1700, 2000, 2200, 2600, & 3000.

2.2.6 **Additional Specifications**

The following Clauses have been added to the 'SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (FOURTH REVISION – 2001, Reprint 2006)'.  
A-1 Road Side Avenue Plantation and Landscaping.  
A-2 Embankment Construction with Soil

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

2.3 The latest editions till 30 days before the final date of the submission of the bid of all Specifications/ Standard shall be applicable.

**PART – I: GENERAL TECHNICAL SPECIFICATIONS**

1.0 This part shall comprise the "Specification for Road & bridge Works" (FOURTH REVISION – 2001, Reprint 2006), issued by the Ministry of Shipping, Road Transport & Highways, Govt. of India & Published by the Indian Road Congress, Jamnagar House, New Delhi – 110011, all as deemed to be bound into this document.

1.1 General condition regarding use of equipment on works: -

In addition to the general conditions already indicated in Volume-I, the following requirements regarding the use of equipment's in works shall be satisfied.

(a) The contractor shall be required to give a trial run of the equipment (s) for specification and tolerance establishing adequacy to meet the requirements of

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specifications and completion of work as per programme before commencement of work;

- (b) All equipment's provided shall be of proven efficiency and shall be operated and maintained at all times in a manner as specified by the manufacturers or industry practice. Regular reports on proper and adequate maintenance shall be submitted to the Engineer in the format and at intervals as approved by the Engineer.
- (c) No equipment or personnel will be removed from site without the permission of the Engineer.

1.2 Where the term crushed stone is referred to in the Specification for Road & Bridge Works of the MOST (Clause 1007) for use as aggregate in construction of pavement layers or in construction of cross drainage works it would mean that the aggregated would be obtained through the use of crusher/granulator of suitable capacity.

## 2.0 Quality Control on Works & Materials

Quality control on materials and execution remains the primary responsibility of the contractor.

Nevertheless the Engineer will inspect the work from time to time during and after construction and get the quality of the work tested (by himself, by his Testing & Quality Control Units and/or by any other agency deemed fit by him) generally as per the requirements of the Handbook of Quality Control for Construction of Roads & Runways (IRC Special Publication No. 11 & Section-900 of MORT & H Specifications).

## 3.0 Surveying & Measuring Equipments

Equipments for surveying and measurement of the work shall be procured by the Contractor for his use. The same shall also be made available to the Engineer at site for any work connected with the Contract without any Charges.

### **PART – II: SUPPLEMENTARY TECHNICAL SPECIFICATION (AMENDMENTS/MODIFICATIONS/ADDITIONS TO EXISTING CLAUSES OF GENERAL TECHNICAL SPECIFICATIONS – PART - I)**

#### **SECTION 100 GENERAL**

##### **Clause 102 Definitions**

The following abbreviations shall be added in this Clause.

- "MORT & H" - Ministry of Road Transport and Highways
- "BIS" - Bureau of Indian Standards
- "CPCB" - Central Pollution Control Board
- "CECRI" - Central Electrochemical Research Institute
- "HDPE" - High Density Polyethylene
- "NRDA" - Naya Raipur Development Authority

##### **Clause 103 Add at the end of the clause**

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The latest edition of these standards till 30 (thirty) days before the final date of submission of the tender shall be adopted.

**Clause 105 Scope of Work**

**Clause 105.3** Add the following below the existing clause.

The Contractor shall establish, adhere to, monitor and maintain an adequate quality assurance programme (QA-programme) based on the requirements of EN ISO 9002 and EN ISO 9003.

The QA-programme shall cover the quality assurance aspects of all services rendered, all items to be supplied and all construction activities to be performed under the Contract, also including temporary structures and equipment, which will influence the quality of the completed works or the progress of the Contract.

The QA-programme shall as a minimum cover subjects listed below:

- Organisation and Management Responsibility
- Document and data control
- Construction programme
- Method statements
- Process Control
- Working, inspection, testing and documentation procedures
- Safety and emergency procedures
- Control and documentation of purchasing and handling of materials
- Non-conformity and corrective action
- Internal quality audits
- Servicing
- Education and training of staff
- Site Environmental Plan

The general procedures of the QA-programme shall be submitted to the Employer and Engineer for approval not later than twenty-eight days after the date of receipt of letter of acceptance. The special part of the QA-programme shall be submitted successively to the effect that it shall have been approved prior to the commencement of the activities to which the programme shall apply.

**Clause 105.4** In first line, Substitute the words “15 days in advance” with “30 days in advance”.

**Clause 106 Construction Equipment**

***Add the following below sub para (f)***

- (g) Adequate standby equipment including spare parts shall be available.
- (h) All measuring devices and gauges shall be in good working condition. Measuring devices that can affect product quality shall be calibrated prior to use and at prescribed intervals against certified equipment. Calibration procedures shall be established, maintained and documented and corrective actions taken when results are unsatisfactory. Accuracy and

fitness of measuring devices shall be ensured by proper maintenance.

**Clause 107 Contract Drawings**

**Clause 107.3** This Clause shall be read as under;

Two copies of standard drawings for roads and structures for execution of works shall be furnished free of cost to the Contractor by the Engineer progressively according to the work programme submitted and accepted by the Engineer. After careful study of these standard drawings, detailed working drawings for the work including temporary work with, design calculations shall be prepared by the Contractor at his own cost and forwarded in triplicate to the Engineer at least 30 days in advance of actual constructional requirements. The Engineer will check and return one copy of the same for the Contractor's use with amendments, if any, noted in red ink. Such approval shall not relieve the Contractor of any of his responsibilities in connection with works. The Contractor will supply four copies of the approved drawings for the Engineer's use. The cost of preparing all such items of work shall be deemed to have been included in the respective rates/ prices quoted by the Contractor in the Bill of Quantities."

**Clause 108 Site Information**

**Clause 108.4** This Clause shall read as under:

The Contractor shall identify quarries; borrow areas and other sources of materials required for the work. He shall satisfy himself that the required materials are available in adequate quantities and complying with the requirements of specifications. No claims shall be entertained on account of non-availability of materials, and increase in leads.

"It is the sole responsibility of the contractor to arrange the quarries, borrow areas etc., on license / lease basis or otherwise, and study in detail before tendering, the scope of taking the quarry on lease. Advance information must be collected by the contractor regarding the procedure laid down and the consequent delay in arranging the quarries on lease and must make alternative arrangement to procure the quarry products from lease holders. No separate payment will be made for arranging such quarries, borrow areas."

**Clause 109 Setting Out**

**Clause 109.8** Add the following para in the Clause 109.8

Surveying Equipments and Personnel

The Contractor shall provide the necessary surveying equipment, accessories, surveyors and labours required for setting out and related measurements, including making available these to the Engineer and his representatives at different stages of the work. The surveying equipment shall be of high standard of manufacture as approved by the Engineer They shall be in good working condition , adequate in number and shall include inter- alia the following:

- (i) Precision automatic level with micrometer attachment with tripods and levelling staff reading to 5mm accuracy by direct observation and to 1mm

accuracy by estimation or better

- (ii) Theodolites with tripod - Electronically operated with computerised output attachment reading to 20 seconds of angle accuracy or better.
- (iii) Total station with 2 spare batteries and a charger, three tripods plus tangents sufficient for a 4 km range, together with an electronic data recorder, 6 data packs and all necessary software for operation.
- (iv) Precision staff
- (v) 3 metre straight edge and measuring wedge fitted with handles wedges 100 mm ht. and 1 mm accuracy.
- (vi) Field Umbrellas
- (vii) Ranging rods 50 mm dia 3 m long straight with one end each metallic conical and painted alternatively black and white along the length.
- (viii) Camber Templates 3 lane fitted with handles.
- (ix) Steel tape graduated in metres, centimetre and millimeter
  - (a) 10 m long
  - (b) 20 m long
  - (c) 50 m long
  - (d) Reference markers and pegs

The Contractor shall maintain the surveying equipment in good condition during the full duration of works and replace the ones, which get worn out or otherwise become unworkable as per Engineer.

The surveying equipment and related resources shall be provided under the general obligations of the Contractor requiring no separate payment.

**Clause 109.9** This can be read as follows "Precision automatic levels, having a standard deviation of  $\pm 2$  mm per km and fitted with micrometer attachment shall be used for all double run leveling work. Setting out of the Road alignment and measurement of angles shall be done by using Total Station"

**Clause 109.10** The Contractor shall take the cross section levels along the proposed centreline without disturbing the original ground condition before the clearing and grubbing operation. These levels are considered for the preparation of cross sections and for the payment of earthwork quantities.

**Clause 110** **Public Utilities**

**Clause 110.3** This Clause shall read as under:

Any utility likely to be affected by the contractor's work shall be brought to the notice of the Engineer/ Employer and such work shall be undertaken only after

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getting written clearance from the Engineer.

**Clause 111 PRECAUTIONS FOR SAFEGUARDING THE ENVIRONMENT**

**Clause 111.1 General**

Add the following.

**NOISE:**

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

All construction operations shall be performed in a manner to minimise noise and Vibration. The parameters for noise are detailed below.

- 70 dB (A) for day and night;
- 50 dB (A) for day and 45 dB (A) for night for sensitive receptors

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

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

**Clause 111.2 Borrow pits for Embankment Construction**

Add the following:

Contractor will ensure that proper excavation techniques are used to improve stability and safety of the borrow area. In case digging is done more than 500mm, the area shall be properly segregated with luminous ribbon tied on pillars along the perimeter so that animals, human or vehicles do not fall down. Borrowing operation shall in no case result in any damage to any structure nearby. Existing ponds areas in the project area, if asked by the Employer, shall be used as borrow areas on priority and the materials excavated shall be used for embankment/ subgrade/ land scaping. The stability of the earth bund around the pond shall be checked and strengthened, if necessary, before operating these areas as borrow areas and the cost of these measures are incidental to the items of embankment/ subgrade/ landscaping.

**Clause 111.3 Quarry Operations**

Add the following:

Contractor shall ensure scheduling the movement of transport carrying material to and from site during non-peak hours. The trucks carrying dusty material fly ash/ pond ash shall be covered with tarpaulin and provided with adequate free board to prevent spillage. End boards shall be provided in loaders to prevent spillage. Stockpiling of material shall be properly planned so as to ensure that no



traffic jam takes place on the highway and other Roads.

**Precautions against Dust**

Special care shall be taken to combat dust problem originating from use of Fly ash/ Pond ash/ Modified soil.

**Storage of Explosives**

The explosives used for quarrying shall be procured and stored in compliance to Indian explosives Act currently in force. The contractor shall maintain a receipt and issue register which shall be produced for the inspection of Engineer. Armed Police escort shall be obtained for transshipments from the factory to the storage area.

**Clause 111.5 Pollution from Hot Mix Plant & Batching Plant & Other Construction Machinery**

Add the following:

The contractor shall ensure the use of relatively new, well-maintained hot mix plant (batching plant) so that emission conforms to the CPCB norms and be fitted with dust extraction unit avoid prolonged engine powered equipment idleness. Asphalt mixing sites shall be located more than 500 m from any community or residence. The hot mix plant shall be founded on compacted / paved surface so that the spills do not affect the aquifer. Properly sizing and maintenance of mufflers, engine intake, silencers and engine enclosures shall be carried out. The contractor shall take every precaution to reduce the levels of noise, vibration, dust and emission from his plant. The contractor shall be fully responsible for any claims for damages caused to the owner of property, fields and residence in the vicinity.

All vehicles, equipments and machinery needed for construction will be regularly maintained to ensure that pollution emission levels confirm to CPCB norms. All vehicles shall be fitted with silencer.

Construction vehicles, machinery & equipment shall only be permitted to move or be stationed in the designated area so as to avoid compaction of top soil intended for agriculture/ Land scaping.

**Clause 111.13 Road Safety**

The contractor shall provide adequate circuit for traffic flow around construction areas, control speed of construction vehicles through road safety and training of drivers, provide adequate signage, barriers and flag persons for traffic control. Safety of workers undertaking various operations during construction will be ensured by providing helmets, masks, safety goggles etc.

**Clause 111.14 Sanitation & Waste Disposal in Construction Camp**

Contractor shall ensure that construction camps are located at a distance of minimum 200m from water sources. Special attention shall be paid to the sanitary conditions of the camps. The contractor shall ensure that sufficient measures are taken i.e. provision of garbage tanks and sanitation facility. Waste in septic tanks shall be cleaned periodically. Garbage shall be collected in four soakage pits at

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each construction site and disposed of daily. Contractor shall provide adequate measures for the health care of workers and arrange their regular medical check-up to ensure that they do not suffer from communicable disease. At every workplace, good & sufficient water supply will be maintained to avoid waterborne / water related diseases. If any pits are dug at construction / camp site, these shall be filled up properly so that no water gets accumulated or sprayed frequently with pesticides to prevent mosquito breeding. Air vent of septic tanks shall be covered with mosquito net. The septic tanks and soak away pits in the camp shall be sealed properly with cement mortar to avoid mosquito breeding.

**Clause 111.15 Environmental Monitoring**

As part of the obligatory periodic checks, environmental monitoring will be carried out by the Engineer as per schedule and if any parameter is found deficient in standards, mitigation / control measures as decided by the Engineer shall be complied with by the Contractor.

**Clause 111.16 Protection of Existing Trees**

The contractor shall take all necessary measures to ensure safety and protection of the trees from any destruction whatsoever relating to his constructional operations.

**Clause 111.17 Disposal of Materials Outside Work Site**

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

**Clause 112 Arrangement for Traffic During Construction**

**Clause 112.1 General**

This can be read as follows

“The contractor shall at all times carry out on the highway in a manner creating least interference to the flow of traffic while consistent with the satisfactory execution of the same. For all works involving improvements to the existing highway, the contractor shall in accordance with the directiveness of the Engineer, provide and maintain during the execution of the work a passage for traffic either along a part of the existing carriageway under improvement or along a temporary diversion constructed close to the highway. Two weeks before undertaking work which would involve any obstruction whatsoever to traffic, the Contractor shall submit, for the Engineer’s approval, a Traffic Control Plan.

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The plan shall include :

- (i) Typical drawings for temporary diversions in accordance with Sub-Clause 112.3
- (ii) Typical details of arrangements for construction under traffic including details of traffic arrangements proposed to be in place after the cessation of work each day.

Special consideration shall be given in the preparation of the Traffic Control Plan for the safety of pedestrian and works and delineation of the roadway at night.

Temporary diversions will be constructed only with the approval of the Engineer.

**Clause 112.6 Measurement for Payment and Rate**

**Shall be read as follows**

All arrangements for traffic during construction including provision of temporary cross drainage structures temporary diversion as described in Clause 112.3, if required, and treated shoulder as described in Clause 112.2 including their maintenance, dismantling and clearing debris, where necessary, shall be considered as incidental to the works and shall be the contractor's responsibility.

**Clause 114 Scope of Rates for Different Items of Work**

**Clause 114.2** Item (ii) of Clause 114.2 shall read as follows:

Detailed resources based construction programme (using computerized critical path network method) in a form, which facilitates control of the progress of the works and consequences of any changes in terms of time. The programme shall also include detailed network, activities for the submission and approval of materials, procurement of critical materials and equipment fabrication of special products/ equipment and their installation and testing and for all activities of the Contractor that are likely to affect the progress of work etc. including updating all such activities on the basis of decisions taken at the periodic site review meetings or as directed by the Engineer. The Contractor shall submit data via electronic media to the Engineer in a form readily compatible with Engineer's planning system.

Add the following as item (xvii) of the sub-clause 114.2:

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

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

**Clause 114.4 Add the following as Clause 114.4**

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If any work executed by the Contractor does not meet the specifications, it shall be deemed as rejected. The Engineer, in his sole discretion, may consider a proposal by the Contractor to retain, the element or part of the structure. The Contractor's proposal shall be supported by calculations, drawings and other data to prove the soundness of the proposal and shall clearly describe the additional measures required to ensure the intended performance of the structure. Rate/price for the rehabilitation structure shall be settled mutually between the Engineer and the Contractor and in case of failure to arrive at an agreed rate; the Engineer's decision regarding the rate shall be final and binding.

**Clause 121 Field Laboratory**

**Clause 121.1** Add the following at the end of the clause

This facility will be provided and maintained by the Contractor, as incidental to work and no separate payment shall be made for this item.

**Clause 121.3 Laboratory Equipment**

This Clause shall read as under:

"The following items of laboratory equipment procured from reputed manufacturers duly approved by the Engineer shall be provided in the field laboratory."

Laboratory equipment shall be provided by the Contractor for laboratory, sufficient to carry out all the field and site quality acceptance testing required in the Specifications. It shall include the following:

**A. General**

- |      |  |        |
|------|--|--------|
| (i)  | Balance  |        |
|      | (a) 10 kg capacity semi-self indicating type – Accuracy 1 gm   |        |
|      | Electronic   | 2 No.  |
|      | Mechanical   | 2 No.  |
|      | (b) 500 gm capacity semi-self indicating type – Accuracy 0.01 gm   |        |
|      | Electronic   | 2 No.  |
|      | Mechanical (semi-self indicating)  | 2 No.  |
|      | (c) Chemical balance (electronic) 100 gm capacity  |        |
|      | Accuracy 0.001 gm  | 2 No.  |
|      | (d) Pan balance 5 kg capacity Accuracy 0.5 gm.   | 3 Nos. |
|      | (e) Platform scale – 300 kg capacity   | 1 No.  |
| (ii) | Ovens-electrically operated, thermostatically controlled (including thermometer), stainless steel interior |        |

(a)	Temperature range ambient to 300° C, Sensitivity 1° C, capacity 120 Litre.	2 No.
(b)	Temperature range, ambient to 150° C, sensitivity 1° C, capacity 250 Litre.	2 No.
(iii)	Sieves: as per IS. 460	
(a)	Test sieve set 450mm internal dia. as per IS complete with lid and pan of hole sizes 75mm, 63mm, 53mm, 37.5mm, 26.5mm, 13.2mm, 9.5mm, 6.7mm, and 4.75mm.	2 Set
(b)	Test sieve set 200mm internal dia (brass frame and steel/or brass wire cloth mesh) as per IS complete with lid and pan of aperture sizes 2.36mm, 2mm, 0.18mm, 6.0micron, 4.25micron, 3.0micron, 450micron and 75micron.	4 Set
(c)	200mm dia. Brass – 1 mm 75micron, smaller than 425micron	3 each
(iv)	Sieve shaker capable of taking 200mm and 450mm dia sieves- electrically operated with time switch assembly	1 No.
(v)	200 tonnes compression testing machine electric cum manually operated fitted with three gauges 0-2000 KN. x 10 KN, 0-1000 KN x 5 KN and 0-500 KN x 2 KN.	2 Nos
(vi)	Stop watches 1/5 sec. accuracy	2 Nos.
(vii)	Glassware comprising beakers, pipettes, dishes, measuring cylinders (100 to 1000cc capacity) glass rods and funnels, glass thermometers range 0° C to 100° C and metallic thermometers range upto 300° C	1 Doz. Each
(viii)	Hot plates 200mm dia (1500 watt.)	6 Nos.
(ix)	Enamel trays	
(a)	600mm x 450mm x 50mm	12 Nos.
(b)	450mm x 300mm x 40mm	12 Nos.
(c)	300mm x 250mm x 40mm	12 Nos.
(d)	Circular plates of 250mm dia	12 Nos.
(x)	Water still, 3litre/hr. with fittings and accessories	2 Set

(xi)	Aluminium Tins	
(a)	50mm x 30mm	36 Nos.
(b)	55mm x 35mm	36 Nos.
(c)	70mm x 45mm	36 Nos.
(d)	70mm x 50mm	36 Nos.
(e)	80mm x 50mm	36 Nos.
(xii)	Riffle box of slot size 50mm as per ASTM C-136	1 No.
(xiii)	Spatula set of 100 and 200 long	6 Sets
(xiv)	Water testing kit	1 Set
(xv)	First aid box	1 Set

**B. For Soils and Aggregates**

(i)	Liquid limit and plastic limit	
(a)	Liquid limit device with Casagrande and grooving tools and as per IS – 2720	2 Nos.
(b)	Liquid Limit device UPAL as per IS – 2720	1 No.
(c)	Moisture content cans	200 Nos
(d)	Ground glass plate with rounded edges 600mm x 600mm x 10mm	2 Nos.
(ii)	Hydrometer analysis	
(a)	High speed stirrer with stainless still beaker	1 No.
(b)	Soil hydrometer set including jar to ASTM E100 and C422	1 Set
(iii)	Sampling pipettes fitted with pressure and suction inlets, 10ml. Capacity	1 Set
(iv)	Laboratories compaction	
(a)	Compaction apparatus (Proctor) to the requirements of IS–2720 complete with collar, base plate & 2.5kg rammer.	1 No.
(b)	Compaction apparatus (heavy) to the requirements of IS– 2720 complete with collar, base plate and 4.89kg rammer.	3 Nos.
(c)	Vibratory hammer to the requirements of Test 14 – BS	1 Set

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(v)	Sand pouring cylinder (150mm) with conical funnel and top and base plate (with 152mm dia of sand cone) to the requirements of IS – 2720 Part 28.	4 Sets
(vi)	Sampling tins with lids 100mm dia x 75mm ht. 1/2kg capacity	30 Nos.
(vii)	Laboratory C.B.R. testing equipment to the requirements of IS- 2720 Part-16 and consisting of following:	1 Set
(a)	Floor mounted electro-mechanical load frame 5 tonne capacity with automatic strain control	1 No.
(b)	CBR moulds complete with collar, base plate, etc.	36 Nos.
(c)	Swell stands for holding dial gauge	9 Nos.
(d)	CBR plunger with penetration dial gauge holder	1 No.
(e)	Surcharge weight with central hole of 2 kg. weight	100 Nos
(f)	Spacer disc with handle	2 Nos.
(g)	Perforated brass swell plate with adjustable cap on handle	36 Nos.
(h)	Soaking tank for accommodating 9 CBR moulds	2 No.
(i)	High tensile steel calibrated proving rings of 1000 kg. 2500 kg and 5000 kg capacity	1 Set
(j)	Dial gauge, 25mm travel-0.01mm/division	12 Nos.
(viii)	Standard Penetration Test equipment IS- 2131 including solid cone attachment to fit drive and	1 No.
(ix)	Dynamic Cone Penetrometer equipment IS – 4968 Part 3	1 Nos.
(x)	Nuclear gauge for density and moisture content determination to the requirements of AASHTO 238 and 239	1 Set
(xi)	10% fines value test BS-812	1 Set
(xii)	Speedy moisture tester complete with carrying case and supply of reagent	2 Nos.
(xiii)	Sand equivalent apparatus complete along with chemicals to the requirements of IS-2720	1 Set
(xiv)	Reagent grade Sodium Sulphate for soundness test of aggregate chemical Sodium Sulphate to the requirements of IS-2386 Part- 5	30 kgs
(xv)	Specific Gravity test IS-2720	1 No.
(xvi)	Post-hole Augur with extension	1 Set

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(xvii)	Core cutter apparatus 10cm dia. 10/15cum length height complete with 20kg hammer	1 Set
(xviii)	Flakiness and Elongation test gauge as per IS-2386	2 Set
(xix)	Standard measures of 30, 15, 3 litre capacity along with tamping rod	1 Set
(xx)	Direct Shear & Triaxial Shear Test as per IS – 2720	1 Set each

**C. For Bitumen and Bituminous Mixes**

(i)	Constant temperature bath for accommodating bitumen test specimen, electrically operated, and thermostatically controlled, stainless steel interior, 50 l capacity, temperature range ambient to 80° C	1 No.
(ii)	Bitumen penetrometer automatic type, including adjustable weight arrangement, and needles to the requirements of AASHTO T – 49 & IS- 1203	1 Set
(iii)	Centrifuge type motorized bitumen extraction apparatus to the requirements of AASHTO T164 with stock of solvent & filter paper	1 Set
(iv)	Bitumen laboratory mixer planetary action, 2 litre capacity, including required accessories electrically operated and fitted with heating jacket	1 No.
(v)	Apparatus for Determination of water content (Dean and Stark Method) IS-1211.	1 Set
(vi)	Apparatus for Determination of Loss on Heating IS-1212.	1 Set
(vii)	Apparatus of Determination of specified Gravity IS-1202.	1 Set
(viii)	GMM (Max. Specific gravity) ASTM D 2041, Vacuum Pump	1 Set

**D. For control of profile and surface Unevenness**

(i)	String line arrangement with paving with sensor powers	4 Sets
(ii)	Towed Fifth Wheel Bump Integrator	1 No.
(iii)	Camber templates 3-lane straight run cross-section	2 Sets.

**E. For Cement, Cement Concrete and Materials**

(i)	Vicat needle apparatus for setting time with plungers, as per IS- 5513	1 Set
(ii)	Moulds	



(a)	150 mm x 300 mm ht. Cylinder with capping component along with the capping set and compound as per IS	48 Nos.
(b)	Cube moulds (150mm x 150mm x 150mm) as per IS-516	100 Nos.
(c)	Beams 750 mm x 150 mm x 150 mm moulds	18 Nos.
(iii)	High frequency mortar cube vibrator for cement testing	1 No.
(iv)	Concrete mixer power driven, 1 cu. ft. capacity	1 No.
(v)	Variable frequency and amplitude vibrating table size 1m, as per the relevant British Standard	1 No.
	Impact test apparatus as per IS-2386	1 no.
(vi)	Flakiness index test apparatus as per IS-2386	2 No.
(vii)	Elongation index test apparatus as per IS-2386	2 No.
(viii)	Aggregate crushing value impact test apparatus as per IS - 2386	1 No.
(ix)	Los-Angeles abrasion test apparatus as per IS 2386	1 No.
(x)	Flow table as per IS- 712	1 Nos.
(xi)	(a) Slump test Apparatus as per IS-7320	12 Nos.
	(b) Compacting Test apparatus as per IS – 5515	1 Nos.
(xii)	Equipment for determination of specific gravity for fine and coarse aggregate as per IS 2386 (Part 3)	4 Nos.
(xiii)	Setting time of Concrete as per IS 8142	1 Set
(xiv)	Non destructive Test (Rebound hammer) as per IS 13311 part II	1 Set
(xv)	All relevant IS Codes, IRC Codes, ASTM Codes, BS Codes	1 Set each

All equipment shall conform to accepted international standards and shall be subject to the approval of the Engineer.

The Contractor shall be responsible for the provision of adequately experienced and qualified laboratory staff, in sufficient numbers to be able to meet all testing requirements to the approval of the Engineer, and for the supply of all transportation of staff, testing equipment and samples necessary to allow the testing to be performed in a time scale compatible with the needs of the Site.

Contractor shall arrange to maintain the laboratory in satisfactory manner and will carry stocks of spare equipment and laboratory consumables until the issue of Taking Over Certificate.

Full complement of listed equipment procured from an internationally reputed manufacturer, after procurement and approval of Engineer shall be incidental to the work and no payment shall be made to the Contractor.

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**Clause 121.4** This clause stands deleted.

**Clause 121.5** This clause stands deleted.

**Clause 121.6** This clause stands deleted.

**Clause 121.7** This clause stands deleted.

**Table 122.1** This clause stands deleted.

**Clause 123** This clause stands deleted.

**Clause 124** This clause stands deleted.

**SECTION 200 SITE CLEARANCE**

**Clause 201 Clearing and Grubbing**

**Clause 201.4 Disposal of Materials**

Replace '1000m' with 'all leads' in the second paragraph, last sentence.

**Clause 201.5 Measurements for Payment**

**Shall be read as follows**

Clearing and grubbing for road embankment, drains and cross drainage structures shall be measured on area basis in terms of hectares. Clearing and grubbing of borrow areas shall be deemed to be a part of works preparatory to embankment construction and shall be deemed to have been included in the rates quoted for the embankment construction item and no separate payment shall be made for the same. Cutting of trees upto 300mm in girth including removal of stumps and roots and trimming of branches of trees extending above the roadway shall be considered incidental to the clearing and grubbing operations. Removal of stumps and roots of trees of over 300 mm girth, left over from trees which have been cut by any other agency shall also be measured in accordance with the following paragraph. Cutting including removal of foundation of sign boards, hoarding boards, concrete posts, km stones etc., shall be considered incidental to the clearing and grubbing operations. The removal from site and disposal of all materials obtained from clearing and grubbing operations, which, in the opinion of the Engineer cannot be used or auctioned, shall be included in the Contract unit rate.

Cutting, including removal of stumps and roots of tree of girth above 300mm and backfilling to required compaction shall be measured in terms of number according to the sizes given below:-

- (i) Above 300mm to 600mm
- (ii) Above 600mm to 900mm
- (iii) Above 900mm to 1800mm
- (iv) Above 1800mm

For this purpose, the girth shall be measured at a height of 1 metre above ground or at the top of the stump if the height of the stump is less than one

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metre from the ground.

**Clause 201.6 Rates**

**Clause 201.6.1** Replace the second sentence as follows:

These will also include removal of stumps and roots of trees of any girth left after cutting of trees carried out by any other agency, removal of sign boards, hoarding boards, concrete posts, km stones including their foundation, excavation and back filling to required density, where necessary, and handling, salvaging and piling and disposing of the cleared materials with all lifts and up to a lead of 5000 m.

**Clause 201.6.2** Replace '1000 m' with '5000 m' in last sentence.

**Clause 202.4 Back-filling**

After "operations" add "and wells encountered in the alignment". Add after last sentence "The wells may be capped thereafter if directed by the Engineer".

**Clause 202.5 Disposal of Materials**

Add the following :

"Materials determined by the Engineer as having salvage value shall be placed in neat stacks of like materials within the Right of Way as directed by the Engineer with all lifts and leads upto 5km.

All materials obtained from dismantling operations, which, in the opinion of the Engineer cannot be used or auctioned, shall be removed from the site by the Contractor and disposed off at the nearest tip or other approved location in accordance with all statutory requirements. The Engineer may permit the disposal of boulders, concrete fragments and other incombustible materials by burial within the road reserve, outside paved areas. When buried, the tops of these materials shall not be less than 300mm below finished surface level".

**Clause 202.7 Rates**

**Shall be read as follows**

The contract unit rates for the various items of dismantling shall be paid in full for carrying out the required operations including full compensation for all labour, materials, tools, equipment, safeguards and incidentals' necessary to complete the work. These will also include excavation and back filling where necessary to the required compaction and for handling, piling and disposal of the dismantled materials with all lifts and leads as specified in Sub-Clause 202.5. The cost of cartage of materials with no salvage value to disposal sites with all leads is deemed to be included in the rates for dismantling.

**SECTION 300 EARTHWORK, EROSION CONTROL AND DRAINAGE**

**Clause 301 Excavation for Roadway and Drains**

**Clause 301.3.11** Disposal of excavated materials

**Shall be read as follows**

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"All the excavated materials shall be the property of the Employer. Suitable material obtained from the excavation of the roadway, drains, cross drainage works, etc. shall be used for:

- (i) filling for roadway embankments.
- (ii) filling existing pits/ ponds in the right of way as directed by the Engineer, including levelling and spreading, with all lifts and leads.
- (iii) for landscaping of the road as directed by the Engineer, including levelling and spreading, with all lifts and leads.

Unsuitable and surplus material, which, in the opinion of the Engineer cannot be used in the works, shall be removed from site by the Contractor and disposed of at the nearest dip or other approved location in accordance with all statutory requirements".

**Clause 301.8** Delete item (v) of last para and replace with:

"(v) Disposal of surplus material upto '5000m' lead"

**Clause 301.9** Rates

**Clause 301.9.1** In item (ii) replace "1000m" with "all leads":

Add new item after item (vi):

"(vii) The removal from site and disposal with in a lead of 5km of all surplus or unsuitable materials obtained from excavation operations, which, in the opinion of the Engineer cannot be used in the Works, shall be included in the Contract rate".

**Clause 301.9.5** Replace "1000m" with "5000m" in the last sentence

**Clause 301.9.6** Replace "1000m" with "5000m" in the first sentence

**Clause 304** Excavation for Structures

**Clause 304.3.7** Backfilling

**Shall be read as follows**

Backfilling shall be done with approved material after concrete or masonry is fully set and carried out in such a way as not to cause undue thrust on any part of the structure. All space between foundation masonry or concrete and the sides of excavation shall be refilled to the original surface in layers not exceeding 150 mm compacted thicknesses. The compaction shall be done with the help of suitable equipment such as roller/ or plate vibrator, rammer, plate vibrator et., after necessary watering, so as to achieve a density not less than the field density before excavation.

**Clause 304.5.1** Replace 1000m with "all leads" in item (v)

**Clause 304.5.3** Replace initial lead of 1000 m " and replace it with "all leads".

**Clause 305** Embankment Construction

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**Clause 305.2 Materials and General Requirements**

**Clause 305.2.1 Physical requirements**

**Clause 305.2.1.1** The first sentence of this Clause shall be read as under:

The materials used in embankments, sub grades, earthen shoulders and miscellaneous backfills shall be soil, moorum, gravel, sand, a mixture of these or any other material including material with fly ash modified soil conforming to requirement in accordance with additional Technical Specification A-2 enclosed hereof approved by the Engineer.

**Clause 305.2.1.4** Delete second sentence of clause 305.2.1.4.

**Clause 305.2.1.5** Add the following at the end of first sentence:

The material to be used in subgrades should satisfy the requirement of 4 day soaked design CBR of 10% when tested as per IS: 2720 (Part 16) at 95% modified dry density (IS: 2720-Part 8).

For use in embankments, the mix of Soil and Fly Ash shall have the minimum values of: MDD:1.8 g/cc; C: 30 KN/ Sqm; ( $\phi$ ): 22 degrees

For use in High embankments (H>6 m), the Soil shall have the minimum values of: MDD:1.8 g/cc; C: 25 KN/ Sqm; ( $\phi$ ): 25

**Clause 305.2.2.2 Borrow materials**

Para 1 of this Clause shall be read as under:

“No borrow area shall be made available by the Employer for this work. The arrangement for the source of supply of the material for embankment meeting the prescribed specifications as well as compliance to the different environmental requirements in respect of excavation and borrow areas as stipulated, from time to time, by the Ministry of Environment and Forest, Government of India and the local bodies, as applicable shall be the sole responsibility of the Contractor. However, as mentioned in Clause 111.2, existing ponds areas in the project area, if asked by the Employer, shall be used as borrow areas on priority and the materials excavated shall be used for embankment/ subgrade/ landscaping”

Add at the end of Table 300-2

- |    |  |                  |
|----|--|------------------|
| 4. | High Embankment (exceeding 6 m height) | Not less than 97 |
| 5. | Embankment for Landscaping             | Not less than 85 |

Para 8 of this Clause given below Table 300-2 shall read as under:

“The contractor shall, at least 7 working days before commencement of compaction, submit the following to the Engineer for approval:

- (i) The values of maximum dry density and optimum moisture content obtained in accordance with IS: 2720 (Part 8) for each fill material he intends to use.
- (ii) The graphs showing values of density against moisture content from which each of the values in (i) above of the maximum dry density and

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optimum moisture content were determined.

- (iii) The dry density-moisture content –CBR relationships for each of the fill materials he intends to use in the subgrade.”

**Clause 305.3 Construction Operations**

**Clause 305.3.5.1 Spreading materials in layers and bringing to appropriate moisture content**

Add the following at the end of this clause

“To ensure the density of each layer, the contractor shall prepare a layer chart indicating layer number, level etc. in a format approved by the Engineer”

**Clause 305.9.1** In first line, Add after “subgrade” the following words:

“and all granular surface”

Add “including removal of top soil after word “materials” appearing in first line of item (v)

**Clause 305.9.6** Read “5000m” in place of “1000m” in the last sentence.

**Clause 306 Soil Erosion and Sedimentation Control**

**Clause 306.4 Measurement for payment**

Substitute Clause 306.4 as follows:

“All temporary sedimentation and pollution control works shall be deemed as incidental to the earthwork and other items of work and as such no separate payment shall be made for the same.”

**Clause 306.5 Rates**

This Clause shall be deleted.

**Clause 309.3.2** Add the following:

Grading requirements for filter material shall conform to class I of Table 300-3

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

**Clause 401 Granular sub-base**

**Clause 401.2 Materials**

**Clause 401.2.1** Para 1 of this Clause shall read as under:

“The material to be used for the work shall be crushed stone. The material shall be free from organic or other deleterious constituents and conform to the Grading-I given in Table 400-1.”

**SECTION 500 BASES AND SURFACE COURSES (BITUMINOUS)**

**Clause 502 Prime Coat Over Granular base**

**Clause 502.4.5 Tack Coat**

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This Clause shall read as under:

“The Contractor shall organise the laying of Dense Bituminous Macadam Course without delay after the curing of prime coat and no tack coat need to be applied over the primed surface.”

If the surface is not maintained properly and there is any delay in laying of DBM, the contractor shall apply the tack coat as directed by the Engineer and no payment shall be made in this regard.

1. Type and grade of bitumen emulsion to be used for primer coat:-  
Medium setting type of emulsion
2. Type and grade of bitumen emulsion to be used for tack coat:-  
Rapid setting type of bitumen emulsion
3. Grade of bitumen to be used in premix material, seal coat and dense bituminous macadam- Bitumen grade 60/70
4. Grade of CRMB to be used in bituminous concrete – CRMB 60

Note:- Emulsion, R.S and M.S, bitumen 60/70 and CRMB 60 shall be procured by the contractor from the IOC depot at the nearest centre to the site.

## SECTION 900

## QUALITY CONTROL FOR ROAD WORKS

### Clause 903.4.3

Add New Sub-clause

"Bituminous mix shall be spread with paver fitted with electronic sensing device and string line arrangement (supported by steel pegs @ 5m apart) on either side of paving width for automatic levelling, surface evenness and profile control. Use of string line is compulsory to provide signal to the electronic sensing device fitted with Paver Finisher"

Bituminous works, shall be tested immediately after finishing for:

- (a) Thickness (compacted) measured by extracting cores shall be dealt in accordance with MORTH Specification Section 900.
- (b) Density (compaction) test as performed on the extracted cores.
- (c) Workmanship test by measuring roughness of the finished layer by duly calibrated Towed Fifth Wheel Bump Integrator.

*Note: - Contractor shall arrange the core extraction machine at his cost and shall take cores of the executed bituminous works jointly with Engineer without any extra cost.*

The result of tests shall be compared with the prescribed limiting values. The payment of all such works executed shall be based on the test results. In case test results for (b) & (c) above fall below the required values, in accordance with the specification cumulative deductions as worked out using following formulae shall apply limiting to 'Nil' payment for the executed bituminous works.

Core Density	Deduction in the payable rate
Less Upto 1% of requirement	@10%
Less above 1% and upto 2% of requirement.	@20%
Less above 2% and upto 3% of requirement.	@30%
Above 3% of requirement.	@100%. Such works shall be rejected and NIL payment shall be made.

#### **Workmanship Test: Roughness Measured Longitudinally**

The finished bituminous layers (DBM & BC) shall be tested for Workmanship by measuring roughness longitudinally separated for each lane with the Calibrated Towed Fifth Wheel Bump Integrator device shall be carried out using the procedure recommended in the World Bank Technical Publication No.46. The measured roughness shall not exceed a value of 2200mm/km for finished DBM and 2000mm/km for finished BC/ CRMB BC layers. In case DBM is laid in two separate lifts, the roughness shall be measured on the final DBM layers. Any completed layer (DBM and BC/ CRMB BC) having roughness in excess of the value above prescribed limits shall be paid in accordance with the Deduction Formulae as specified below:

#### **Deduction for the DBM Layers**

Measured Roughness	Deduction in the payable rate
More than 2201mm / km and up to 30% more than the prescribed requirement.	@ (5%+1%for every 1% in excess of prescribed Limit)
More than 30% and up to 40% more than the prescribed requirement.	@ 50%
Above 40% of more than the prescribed requirement.	@ 100% (i.e. NIL payment)

#### **Deduction for the BC/ CRMB BC Layers**

Measured Roughness	Deduction in the payable rate
More than 2001mm / km and up to 30% more than the prescribed requirement.	@ (5%+1%for every 1% in excess of prescribed Limit)
More than 30% and up to 40% more than the prescribed requirement.	@ 50%
Above 40% of more than the prescribed requirement.	@ 100% (i.e NIL payment)

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**SECTION 1000 MATERIALS FOR STRUCTURES**

**Clause 1006 CEMENT**

Substitute the 1<sup>st</sup> & 2<sup>nd</sup> Paras of this clause with the following:

“Cement to be used in the works, shall be any of the following with the prior approval of the Engineer:

- (a) Ordinary Portland Cement 43 grade, conforming to IS: 8112.
- (b) Ordinary Portland Cement 53 grade, conforming to IS: 12269.
- (c) Portland Pozzolana Cement (PPC), conforming to IS: 1489.

For all the components of Interchange (Grade-separator) including retaining walls, only Ordinary Portland Cement (OPC) shall be used.

**SECTION 1500 FORMWORK**

**Clause 1513 Rate- This clause stands deleted.**

**Clause 1514 Special Architectural Finishes= This clause stands deleted.**

**Clause 1515 Tolerances**

All works shall be carried out true to the lines, levels and grades shown on the drawings and within the tolerances specified below. The forms shall be so designed and erected that the following tolerances are not exceeded unless more stringent and specific specifications have been required by the design and specified in the drawings/ instructions. The contractor shall establish, erect and maintain in an undisturbed condition until final completion and acceptance of the project, control points and bench marks necessary and adequate to establish these tolerances.

Element	Limits
For all elements, departure from established alignment	10 mm
Departure from established grades	10 mm
Variation from plumb or specified batter in lines and surfaces of piers, walls and abutments	10 mm in 3m. if exposed, 20 mm in 3 m. if backfilled
Variation from level or indicated grade in slabs, beams, horizontal and railing offsets	10 mm in 3m. if exposed, 20 mm in 3 m. if backfilled
Variation in cross sectional dimensions of columns, piers, slabs, walls, beams and similar parts	-5 mm, + 10 mm
Variation in slab thickness	-5 mm, + 10 mm

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Footings:

Plan dimensions	-15 mm, +30 mm
Misplacement or eccentricity	2 % of footing width in the direction of displacement and exceeding 30 mm
Reduction in thickness	5 % of specified thickness unless specified to be more stringent.
Variation in size and locations of slab or wall openings	10 mm

The Alignment Tolerances shall be as under:

Tolerance in direction where 'd' is the dimension of members

Member with a depth of upto 200 mm	$\pm d/40$
More than 200 mm	5 mm

## SECTION 1700

**STRUCTURAL CONCRETE- This clause stands deleted.**

### Clause 1706

#### SIZE OF COARSE AGGREGATE

Table 1700-7 in this Clause shall read as under

Sl. No.	Components	Maximum Nominal Size of these Aggregate (mm)
(i)	RCC Well curb	20
(ii)	RCQPCC Well Steining	40
(iii)	Well Cap or Pile Cap	40
(iv)	RCC Work in girders, slabs, kerb, approach slab, piers and abutments, pier/abutment caps, piles	20
(v)	PSC work	20
(vi)	PCC in bottom plug and top plug	40
(vii)	RCC Work in wearing coat and handrails.	12.5
(viii)	Any other Work	As Specified or as directed by the Engineer

### Clause 1709

#### Transporting, Placing and Compaction of Concrete

Add the following paragraph at the end of the clause :

**For Placing Concrete with Pumps:** Pipe Lines from the pump to the placing area

Signature of Contractor.....

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should be laid out with a minimum of bends. For large concrete placements standby pumps shall be available. Suitable valves (air release valves, shutoff valves etc.) shall be provided as per the site needs. The pumping of concrete shall be preceded by a priming mix to lubricate the pump and pipeline. A rich mix of creamy consistency shall be required for lubricating the pipelines. Continuous pumping shall be done to the extent possible. After concrete has been placed the lines and all related equipment shall be cleaned immediately. A plug sponge ball shall be inserted in the end near the pump and shall be forced through the line by either water or air pressure. Pipes for pumping should not be made from materials, which can harm concrete; aluminium alloy pipelines shall not be used.

**Clause 1713 Protection and Curing**

**Clause 1713.1 Water Curing**

Add the following at the end of para I.

"Wherever possible, use of water sprinklers or perforated pipes should be encouraged for curing of concrete. Such arrangement must be maintained for a minimum period of 14 days after concreting.

Approved concrete curing compounds should be preferred where water curing cannot be done reliably".

**Clause 1715 Tolerances**

**Clause 1715.1 Sectional Dimensions**

Add the following as the second sentence of the Clause:

"In the absence of any information in drawings or specifications, for particular cases, the following limitations shall apply

Dimension (mm) 'a'	Tolerances (mm) 'δ <sub>a</sub> = (a <sub>nominal</sub> - a <sub>actual</sub> )'
a ≤ 200	δ <sub>a</sub>   < 5
200 < a ≤ a	δ <sub>a</sub>   < 3.5 + 0.0075a
2000 < a	δ <sub>a</sub>   < 16.5 + 0.001a

**Clause 1715.2 Deviations from Position etc.**

- (a) Deviation from specified position in plan
- (b) Variation in levels at top + 10 mm
- (c) Variation of reduced levels of bearing areas + 5 mm
- (d) Variation in plumb over full height of piers + 10 mm
- (e) Surface irregularities measured with 3 m straight edge
  - (i) all surfaces except bearing areas + 5 mm

	(ii) bearing areas	+ 3 mm
(f)	Variation in length of superstructure - overall and length between bearings	+ 10 mm
		or +0.1% of the span length, whichever is lesser

**SECTION 2000 BEARINGS -This clause stands deleted.**

**11. Precast concrete work**

**(I) MATERIALS**

**1. General**

Since Reinforced Earth is a proprietary system, the contractor shall make his own arrangements to secure the supplies and services needed from the technology supplier.

**(a) Precast Concrete Facing**

R.C.C Precast concrete facing elements shall be of rectangular/cruciform/Tee shape and the dimensions shall conform to the details shown on the final construction drawing. However, all dimensions shown below are typical. Concrete shall be of grade shown on the drawings and shall conform to the requirements specified in section 1700 "Structural Concrete" of MORT&H.

The grade of concrete shall be either M-30 or M-35. The shape of panels shall be cruciform 1.5m x 1.5m with nominal thickness 18 cm.

**(b) Casting**

The elements shall be cast on flat area of a specially prepared mould. Lug connectors and lifting devices shall be cast in place to the dimensions and tolerances shown on approved System drawing and lug connectors shall be set on the rear face, prior to casting. The concrete in each unit shall be placed without interruption and shall be compacted by the use of an approved vibrator supplemented by such hand-tamping as may be necessary to ensure that the concrete reaches into the corners of the forms and prevent formation of stone pockets or cleavage planes. Clear form oil of the approved and only from single manufacturing source shall be used through out the casting operations to avoid colour variation.

**(c) Curing**

The precast elements shall be cured for a sufficient length of time as approved by Engineer so that the concrete develops the required compressive strength. Only fresh potable water shall be used for curing.

**(d) Removal of forms**

The forms shall remain in place until they can be removed without damaging the elements. The scheme of removal of form work shall be as per relevant

MORT&H specifications.

**(e) Scribing**

The date of manufacture and nomenclature shall be clearly scribed on the rear face of each unit.

**(f) Concrete Finish**

The front (exposed) face of the elements shall have the finish approved by the Engineer. The rear face shall have the finish of unformed surface and shall be roughly screened to eliminate open pockets of aggregates.

**(g) Tolerances**

All elements shall be manufactured within the following tolerances:

All dimensions within 5 mm	± 5 mm over
Evenness of the front face	
Difference between lengths of two diagonals	1500mm 10mm
Thickness	max. ± 15 mm

**(h) Handling, Storage and Transporting**

All elements shall be handled, stored and transported in such manner as to eliminate the danger of chipping, cracks, fracture and excessive bending stresses. Elements in storage shall be supported on firm blocking located adjacent to the tie-strips to avoid bending.

**(i) Acceptability**

Acceptability of the precast elements shall be determined on the basis of compression tests, as per MORT&H. specifications and visual inspection. A minimum of one sample of 6 cubes shall be taken for each lot of 5 cum or 12 cubes above 5 cum per day. Elements shall be acceptable for placement in the structure if the strength at 10 days, or before, exceeds 75% of the 28 days requirements.

**(j) Rejection**

Elements shall be subject to rejection in case of failure to meet any of the requirements specified above. In addition, defects, which indicate imperfect moulding, or defects indicating honeycombed or open textured concrete, shall be sufficient cause for rejection.

**(k) Leveling Concrete**

A PCC leveling pad shall be provided under walls as seat beam just to rest the facing panel on leveled surface. Concrete shall have a grade either M-15 or M-20. Maximum size of aggregates shall be 20 mm. The pad shall be cured for at least 05 days prior to placing panels. The top surface shall be leveled at ±3mm tolerance.

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# **SCHEDULE– D**

## **Section-IV**

### **Special Conditions of Contract**

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## Special Conditions of Contract

### 1. GENERAL

The Special Conditions of Contract are to be read in conjunction with General Conditions of Contract. If there are any variations or discrepancies or conflicting provisions, the provisions in Special Conditions shall take precedence over the provisions in the General Conditions of Contract.

All additional facilities/equipment/ office etc to be provided by the contractor, as mentioned in the tender, document outside the BOQ shall not be paid separately, and shall be deemed to have been included in the rates quoted by the contractor.

### 2. ACCESS

The Contractors are to verify the work site details including:-

- a) Access,
- b) Availability of water supply and electrical energy,
- c) Space for dumping stores and materials and
- d) Space for erection of site office,

The Contractors are deemed to have catered for all contingencies connected with the site, access, water & electricity.

### 3. SUPPLY OF WATER

Water will not be supplied by NRDA and the Contractor shall make his own arrangements. NRDA will give recommendatory letter to the concerned authority if so requested by the Contractor. However, NRDA shall be in no way responsible for obtaining permission and no claim on account of this will be entertained.

### 4. ELECTRIC SUPPLY

- (a) Electric power both for construction and lighting shall not be made available to contractor. Contractor shall arrange at his own cost power with necessary switch boards, energy meter etc. and shall be responsible for their maintenance.
- (b) Further distribution by the Contractor at his cost shall be done as per approved layout. He shall provide required clearances for overhead lines to facilitate easy movement of heavy machinery such as cranes etc. These shall be shifted and rerouted at Contractors cost during execution of work if the same are found to obstruct any other work of any agency working at site or requires shifting due to unforeseen reasons.
- (c) On completion of the work the Contractor shall remove all wiring installed by him and make good to the satisfaction of Engineer if any disturbance or damage is done.
- (d) The Contractor shall employ an Electrical Agency as approved by the Engineer for carrying out this work.
- (e) The Contractor has to keep alternative arrangement ready at his own cost for any failure/interruption of electric power that takes place and under no circumstances can this be deemed to be reason for any consequential delay in the works.

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- (f) Any disputes in sharing of power obtained directly/ indirectly from CSEB with other agencies shall be resolved by the contractor at his risk and cost. NRDA shall not be responsible or a party for such disputes.

## 5. DEFECT LIABILITY

The Contractor shall be responsible for rectification of defects, during the defect liability period as per clause 17 of GCC after the certified date of completion by the NRDA. This period shall be known as Defects Liability period as defined in CL. No. 17 of the General Conditions of Contract. Subsequent to the taking over of the works and after it has been in use, its removal/correction of defects would be the responsibility of the Contractor. Any defects or failures during this period shall be rectified by Contractor within one week of intimation in writing. If the same is not carried out in the stipulated time, NRDA shall have the right to get it repaired departmentally or through any other agency, entirely at the risk and costs of the Contractor as detailed in the GCC clause. No. 17.

## 6. SAMPLES

### 6.1 Material

(a) The Contractor shall furnish to Engineer for approval, with reasonable promptness and with reasonable time for consideration, adequate numbers of samples of all the materials to be used in the work, irrespective of whether material/product is from approved list given in tender. He shall permit and account for all costs in his quotation toward supply, testing, examination at site or at any approved place by the Engineer. The choice of approval of materials rests with NRDA unless otherwise specified.

(b) All material samples shall be delivered to the Engineer's office at the Contractor's cost. Each sample shall be in duplicate and properly labelled as under-

- Name of Project
- Name of Contractor
- Name of Product
- Name of Manufacturer
- Item reference of BOQ
- Date of Submission

(c) Samples shall be accompanied with technical specifications / catalogues / test results of manufacturer.

(d) In case the Contractor intends to keep an approved sample in his possession, he shall submit additional set of samples for Engineer's approval.

### 6.2 Standards of Acceptability

(a) In order to establish the standards of acceptability for materials and finishes, the Contractor shall finish in all respect a mock up for each pro-type room. The material used in this shall be as approved and special attention shall be paid to establish the workmanship and finishing standards to be achieved for the project.

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Works such as form finished concrete & finishing items such as joinery, floor finishes, false ceiling, wall finishes, toilets including sanitary fittings and fixtures, electric fitting and fixtures etc. shall be provided as per drawings and specifications. All mock-ups, except for exposed concrete finish to be made within the building blocks. For exposed concrete finish a maximum of 3 (three) mock-ups (approx. 36 (thirty six) SqM each), independent of the main building block shall be prepared for approval jointly by C E & Architect.

- (b) The Contractor shall give notice in writing in this respect and shall obtain approval through Engineer in Charge from the CE NRDA. Approval should be taken well in advance so as not to delay execution of work.

## 7. TESTING OF MATERIALS IN OTHER LABORATORY

As a valedictory measure, in addition to establishing testing a full fledged site laboratory, 10 % (ten percent) of the samples shall be sent every month for testing in one of the following laboratory:-

- i) Chief Engineer (PWD) Laboratory, Raipur
- ii) National Institute of Technology, Raipur
- iii) Govt. Engineering College, Raipur
- iv) B.I.T., Durg
- v) Sriram Test House N. Delhi
- vi) National Test House N. Delhi

**7.1** In case, certain testing facility for typical/ special materials are not available in Chhattisgarh, then it can be tested at a recognized laboratory anywhere in India.

**7.2** All testing charges for the above shall be borne by the Contractor. In case, the testing charges demanded by the testing authorities is not paid by the Contractor within 15 (fifteen) days, then the same will be paid by NRDA with due recovery from the Contractor's bill for the project.

## 8. CRECHE FACILITIES FOR THE CHILDREN OF CONSTRUCTION LABOURER

Contractor undertakes to provide creche facilities for the children of construction labour through a volunteer agency **within one month from start of work**. The facility is open to children of construction labourers employed by the Contractor. In case the Contractor fails to provide this facility within stipulated time, following charge shall be levied on the Contractor.

Range of Contract Amount	Amount of Creche fund
Upto Rs. 50 lacs	Nil
Above Rs. 50 lacs to Rs. 5 Crores	Rs. 50000/-
Above Rs. 5 Crores	Rs. 5 lacs.

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- 8.1 The amount shall be recovered if such facility is not provided by the Contractor from running account bills in one or more instalments but not exceeding 6 (six) instalments.
- 8.2 IF THE FACILITY IS PROVIDE AFTER 3 MONTH 50% OF The amount shall be refunded to the contractor, after 6 month 25% will refunded.

## 9. SUBMISSION OF DETAILED BAR/ PERT CHART OF COMPLETION

**The Contractor shall, within the stipulated time in Tender, submit to the Engineer for his approval a detailed programme covering-**

- a) Descriptive note explaining sequence of various activities.
- b) Network (PERT/ CPM), bar chart.
- c) Quarterly programme of supply of materials by the Employer.
- d) Quarterly cash flow indicating money to be earmarked by the Employer for the purpose of the contract.
- e) Programme for supply of working drawing.
- f) Phased requirements of plant and equipment to be deployed by the Contractor.

## 10. Method of Working

After Contract award and before starting Work at the site, Contractor, NRDA's representative/ Engineer, and Architect shall together make a thorough survey of the grounds where Work under this Contract will occur and areas to be used as access ways to the Work areas. Contractor shall list, and photograph, if Contractor desires, existing conditions not requiring alterations, shall note discrepancies between Drawings and existing conditions, and shall designate areas of storage and routes of access agreed upon by NRDA.

The Contractor shall, within the stipulated time in Tender, submit to the Engineer for his approval the following information,

- a) A general tentative lay-out plan of construction plant and equipment for the execution of work within time period stipulated in schedule.
- b) Drawings or prints showing the location of major plants and other facilities which he propose to put up at the site, including any changes in the general layout, at least 15 (fifteen) days prior to the commencement of the respective work.
- c) Layout and details of temporary works that the Contractor wants to carry out to fulfill his obligation under the contract.

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- d) Indication of shuttering system to be followed.

## 11. Project Monitoring

- 11.1 Within 7 (seven) days the Engineer shall give their approval to proceed with the work, with or without modification. However acceptance of programme and method of working as submitted by the Contractor or with any modification there to in the opinion of the Engineer, shall not relieve the Contractor of any of his contractual obligation.
- 11.2 All these programmes and plans submitted by the Contractor and approved by the Engineer shall become part of the contract.
- 11.3 The acceptance of programmes as submitted by the Contractor or with any modification thereto in the opinion of the Engineer, shall not relieve the Contractor of any extension of time unless delay, if any, is expressly sanctioned by the Engineer.
- 11.4 **Construction Photographs-**  
A General: Contractor will provide construction photographs taken, developed, printed, and mounted by a recognized commercial photographic studio or reputable photographer acceptable to Owner, in the number and type and at construction stages enumerated below:-
- (i) Before Starting Work: Have photographs taken at site from different points of view sufficient in number to show site (and conditions at existing structures) but not fewer than 30 photographs.
  - (ii) During Progress of the Work: Have not fewer than 15 photographs taken at least once a week from points of view (both inside and outside), as necessary to show progress of construction and site development for each part of the Work. Co-ordinate taking photographs with utility Work and back filling. Photograph each buried utility line before back filling. During later stages of the Work, have photographs taken from suitable locations inside the building showing the progress of various stages of the Work, such as piling, centering, reinforcement, water proofing, concreting, etc. Size of photographs will be 125 mm X 250mm. Photographs shall be supplied with negatives/ CD to the Engineer. Each photograph shall be attached with date of photograph and location of work. These photographs shall be from location as fixed by the Engineer at start of work

## 12. QUARRY RELATED DEDUCTIONS

The royalty for Minor minerals used in the work like murrum, stone metals, sand, rubble etc. will be levied as per prevailing practice in PWD of Chhattisgarh and shall be recovered suitably through R.A./ Final bill and will be kept in deposit. The above royalty charges kept under deposit shall be refunded as soon as the Contractor submits relevant NOC from Collector, Raipur, Chhattisgarh.

## 13. CONTRACTORS ALL RISK POLICY (C.A.R. POLICY)

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The successful Contractor shall take out a C.A.R. policy from any approved company by IRDA India. Chhattisgarh Govt., administered by Directorate of Insurance. The policy so obtained shall cover the entire period of construction (including all extensions) and also shall cover the defects liability period. The policy shall be for the total contract amount including cost of free supply material by NRDA, if any. All amounts/ charges towards premium etc. on this account shall be borne by the Contractor.

#### **14. INDEMNITY BOND**

The Contractor shall require to execute an Indemnity Bond for satisfactory performance of the entire project on stamp paper of Rs.100/- (Rupees Hundred only) in the format approved by the NRDA Ltd. This Indemnity Bond shall remain in force for the Defect Liability period after completion of the project to be furnished in contract form E of GCC.

#### **15. ACCIDENTS**

Should any accidents, fatal or otherwise occur, a detailed report about the same shall be made promptly by the Contractor to the Engineer. The Contractor should at all times during execution of work keep the NRDA fully indemnified against all risks, claims, litigations and financial burdens arising out of all incidental operations on work and accidents.

#### **16. TRAFFIC**

The Contractor shall have to make all necessary arrangements for regulating traffic day and night during the period of construction and to the entire satisfaction of the Engineer. This includes the construction and maintenance of diversion, if necessary, at no extra cost to the NRDA. The Contractor shall provide necessary caution boards, barricades, flags and lights, watchmen etc. so as to comply with the latest Motor Vehicle Rules and Regulations and for traffic safety. The Contractor shall be responsible for all claims for the accidents which may arise due to his negligence whether in regulating traffic, in stacking materials on the road or by any other reason. The contractor must comply with the following:-

- A. General: Plan and control use of site and access to site in co-operation with Owner and other contractors working at site to minimise disruption of use of other facilities; portions of buildings and site areas affected by this Contract and to remain in use; and the work of other contractors.
- B. Temporary Access Drives: Construct on the premises as necessary, and maintain in good usable condition; remove when no longer needed. Until permanent improvements have been completed, when necessary to prevent excessive dust, periodically water temporary unpaved access roads.
- C. Construction Site Access: Use most direct route from public streets as agreed to by Owner. Construction traffic elsewhere on Owner's property is prohibited.
- D. Driveways Between and Around Combustible Storage Piles: Maintain at least 15 feet wide and free of accumulation of rubbish, equipment, and materials.
- F. Access for Fire-Fighting Equipment: Maintain.

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G. Access: Refer to other sections for requirements to keep access to site and buildings open to Owner, other contractors, and fire-fighting equipment.

H. Use of Streets and Sidewalks on Public Property: Make arrangements with authorities having jurisdiction for use. Restrictions shall be those of the Municipal Authorities. Be solely responsible for adherence.

J. Roadways, Driveways, and Walkways: Where outside indicated Contract limit on Owner's property and on public property, keep open to pedestrian and vehicular traffic at all times. When temporary closing of a roadway, driveway, or walkway is absolutely unavoidable, provide alternative access routes. Such temporary closings shall be approved by Owner in each case and shall be for the shortest possible time. Strictly adhere to requirements of governmental authorities having jurisdiction.

K. Parking: Owner will issue temporary parking permits for use by construction personnel and will make available, at the location shown. Construction personnel shall not park in any other location on Owner's property, even when bearing permits. Access to allocated parking spaces shall be by most direct route from public streets. Construction personnel shall not drive vehicles elsewhere on Owner's property and shall take the most direct pedestrian way along walks and roadways (not on lawns) from parking lot to construction site.

L. Barricades and Signs: Should barricades or directional signs for traffic control be necessary, prepare and install such signs and barricades of approved size, colour, and lettering or other markings. Remove signs when no longer needed, or at Substantial Completion, whichever is latest.

M. Restricted Use of Premises: Enforce Contract requirements, local ordinances and Owner's instructions pertaining to signs, fires, smoking, trucking, parking, and other use of premises.

N. On-Site Storage:-

1. General: Extent of Work and site area available limits amount of on-site material and equipment storage. Do not unnecessarily encumber job site with excess materials or equipment and means of delivery of materials, equipment, and supplies, removal of rubbish, and, hours during which deliveries may be made. Determine, and take into account in the Work, limitations on storage space and of times, rates, and means of deliveries to and removals from the job site whether such limitations are imposed by laws, rules, ordinances, or physical conditions. Owner will not pay extra amounts due to such limitations. Co-ordinate arrangements for delivery and storage of materials.

2. Paved Areas: Do not use paved areas on Owner's property to stockpile excavated materials or to store construction materials except where shown. Use of paved areas on public property is subject to requirements of authorities having jurisdiction, and arrangements for such use are solely Contractor's responsibility.

3. Protection and Repair: Protect roadways, walks, and other permanent site improvements, and access ways subject to damage. Satisfactorily repair improvements and surfaces damaged during construction operations, or remove damaged improvements or surfaces and provide new acceptable improvements or surfaces. Except where new Work is required, return areas used for temporary access to original condition.

## **17. ALIGNMENT AND BENCH MARKS**

The alignment of the work to be carried out under the contract shall be marked on the ground as per the drawing and as per the instructions of the Engineer. For the purpose of facilitating the work, the series of temporary bench marks on masonry pillars will have to be established. These pillars will be constructed along with the alignment and such other locations as

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may be initiated by the Engineer. The temporary bench-marks shall be established for the work line-out and its connections to other proposed roads in Naya Raipur using the DGPS instrument and Total Station software. All expenses involved in the process of marking alignment on ground, checking the alignment, constructing masonry pillars in establishing bench marks thereon, shall be borne by the Contractor. It will be responsibility of the Contractor to ensure that the masonry pillars so constructed are not damaged during the period of work in progress.

#### **18. PREVENTION OF MOSQUITO BREEDING AT CONSTRUCTION SITE**

The Contractor shall on the respective construction site install mosquito proof and accessible water storage tanks or to cover/protect the present water storage tanks properly. The Contractor shall periodically give larvaecidal treatment to water storage tanks, sites of water stagnation, water collection.

Any expenditure that may be incurred by NRDA to ensure that the above conditions are fulfilled by the Contractor will be debitable to Contractor's account and will be recovered from the bills of the Contractor from time to time.

#### **19. INSPECTION OF SITE AND SUFFICIENCY OF THE TENDER**

If the NRDA is not in a position to deliver to the Contractors the site of the Contract work for any reason whatsoever at the agreed time, delaying the commencement of the contract work, or part thereof not beyond 50 % (fifty percent) of contract period for completion, such omissions of the NRDA shall not be breach of any its obligations under the contractor and the Contractor shall not be entitled to claim from the NRDA for loss or damage, if any, caused thereby, but shall be entitled to a reasonable extension of the period agreed for the completion of contract work. If the contractor shall be obstructed in the execution of the work by any person other than an agent or servant of the NRDA, the Contractor shall exclusively deal with such set by the due process of law but shall not be entitled to attribute thereby the beach of any obligation under the contract to the NRDA compensation for damage or loss, if any, thereby suffered but shall be entitled to an appropriate extension of period agreed for the completion of the contract work, provided that the contractor has reported to the NRDA every such act of obstruction with particular soon after its occurrence and the NRDA has after enquiry found the same to be substantially true and has determined the duration of such obstruction.

#### **20. PROGRESS OF WORK**

The Contractor shall carry out the work as per the programme approved by the Department from time to time. He will also not be allowed to proceed with the work in a scattered manner.

#### **21. FIELD LABORATORY**

The Contractor shall establish a field laboratory for the various field tests for items like concrete cubes, cement, aggregates, sand, blocks for masonry, tiles, wood and for similar items as directed by the Engineer.

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The Contractor shall keep all relevant IS/ BIS/ special publications at site lab for various items of works covered in the present Contract.

## **22. ENGINEER**

**22.1** Engineer for this project shall be the Engineer or the person nominated or appointed by NRDA from time to time and shall include any person duly authorised by them.

**22.2** Engineer shall be responsible for the execution of the project with regards to management and supervision. Instructions issued by the Engineer to the Contractor shall be deemed to be the Employer's instructions in respect of-

1. Day to day supervision including material testing using ISO formats proforma of which should be got approved from Engineer.
2. Approval of material and workmanship using ISO formats proforma of which should be got approved from Engineer.
3. Matter of urgency involving safety or protection of person or property.
4. Monitoring progress of work using System Application of Projects (SAP). (Refer 3.5 hereunder).
5. Interpretation of drawings
6. Interpretation of specifications
7. Issue of additional drawings
8. Certification of measurements and bills and issue of certificates accordingly for interim and final bills.

**22.3** Engineer shall hold fortnightly progress meetings at site for evaluation and execution of works. The Contractor shall assist in providing revised programmes, cash flow charts in the format required by Engineer/ NRDA.

**22.4** The Engineer shall coordinate works at site of all agencies appointed by the Employer.

## **23. EXCAVATED OBJECTS**

All the materials obtained during the process of excavation shall remain the property of the NRDA and shall be disposed off as instructed by the Engineer. The Contractor is supposed to use the selected materials for filling in plinth, pipe bedding, and providing embankment where required, filling the trenches and also filling low lying areas. All operations including loading, unloading, transportation of materials where required with all leads and lifts and handling them and leveling at disposal site etc., shall be included in the quoted cost and no extra payment whatsoever shall be made to the Contractor on the account.

## **24. AS BUILT DRAWINGS**

The Contractor shall during the course of execution, prepare and keep updated a complete set of 'as- built' drawings recording all works on the blue prints, which shall be corrected daily, if necessary, to show each and every change from the Contract Drawings as a approved working drawings, shop drawings and the exact 'as-built' location, sizes and kinds of work etc. This set of drawings shall be kept on the site and shall be used for record purposes. Changes recorded shall be countersigned by the Engineer and the Contractor. Copies of 'as-built' drawings shall be supplied to the CE), NRDA/ and the Engineer on request.

The Contractor shall submit complete 'as-built' drawings on reproducible tracings and ammonia prints 10 (ten) sets in form of hard copies and Compact Discs 2 nos. for building work and all

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services as directed by the Engineer within 30 (thirty) days of the completion of entire work by using AutoCAD facility. Maintenance manuals and original warranties shall be submitted at the time of submitting the As-built drawings. In case the Contractor fails to submit complete 'as-built' drawings as aforesaid [in form of hard copies [10 (ten) sets] and Compact Discs [2 (two) nos.], he shall be liable to pay a sum equivalent to 0.1 percent of the value of work subject to maximum of Rs.10 lakhs (Rupees ten lac only) or as may be fixed by NRDA and this decision shall be final and binding. Pre-final & Final Bill shall not be released until all the as-built drawings are submitted & approved.

**25. ENGINEER'S SITE OFFICE**

Deleted

**26. TRANSPORTATION**

Deleted

**27. PROVIDING COMPUTER & OTHER EQUIPMENTS AT SITE OFFICE**

Deleted

**28. TELEPHONE CONNECTION**

Deleted

**29. TIME SCHEDULE FOR COMPLIANCES**

The tenderers should please note the following time schedule for various compliances and follow the same:

a) The Initial Security Deposit shall be paid within 15 (fifteen) days of receipt of Letter of Acceptance.

The Contractor should construct the site office within 1 (one) month of date of work order. The site office should be as per relevant clause in the tender document.

The CAR policy and Labour license shall be taken by the Contractor within 1 (one) month from the date of work order.

**30. APPROVAL OF ENGINEER**

The foundation strata as well as steel reinforcement provided in all RCC members shall be got approved from the NRDA/ Engineer or his authorised representative. At every stage of work, approval of the Engineer shall be taken by the Contractor. Before starting any work like concreting, block masonry, water proofing, concrete, etc. detailed information of the work in the prescribed proforma shall be given to the Engineer and his approval shall be taken by the Contractor. It is the responsibility of the Contractor to get all the hidden measurements like foundation work, reinforcement, etc. recorded before covering the same. All the measurements shall be taken jointly by NRDA's representative and the Contractor's authorized representative and then only the measurements will be forwarded by the Engineer, who will forward it for payment to Chief Executive Officer, NRDA through Chief Engineer, NRDA and directions on any matter whether mentioned explicitly or otherwise.

**31. PERMISSION FOR CONSTRUCTION OF SITE OFFICE/ GODOWN/ LABOUR HUTS:**

Signature of Contractor.....

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The Contractor shall be permitted to construct temporary structures such as site office, godown, labour huts, Engineer site office, etc. on the land of NRDA within 1 Km radius of site.

The Contractor will have to submit requirement of land for Godown/ Labour Camp/ Batching Plant etc. with logistic layout in Technical Bid. The land shall be provided to the Contractor on Lumpsum lease rent of Rs. 100/- (Rupees Hundred only) per year with Lease Agreement as per prevailing NRDA format. However the Contractor shall require permission of NRDA for erecting site office, labour huts. In the event the Contractor fail to remove site office/ godown and labour huts from the land immediately after construction is over, NRDA will charge rent as per the rules prevalent at the time. No final bill payment shall be made, unless the site is cleared by the contractor in all respects.

The Contractor shall number the structures and display name of the Company, period for which permission is granted, etc. at such approved sites.

No final bill payment shall be made unless the site is cleared in all respects by the Contractor.

### **32. CONDITIONAL TENDER**

The Tenderer shall note that the clarifications shall be obtained in the pretender meeting and the tender should be submitted without any conditions, whatsoever. Clarifications given to the various tenderers in the pre-tender meeting would be summarized by NRDA and would be issued to every tenderer as "Minutes of Pre-Tender Meeting". The same will be binding on all the tenderers irrespective of whether they have attended the pre-tender meeting or not. The Minutes of the Pre-Tender Meeting would form part of the Contract Agreement and the Tenderers should submit the Financial Offer taking into consideration the same. The Tender submitted with conditions would be summarily rejected.

### **33. SITE ORDER BOOK& OTHER BOOKS REQUIRED**

The Engineer will maintain Site Order Book at the site of work. The Contractor or his authorized representative shall sign all the instructions received therein, in token of having received the same and shall comply with them forthwith.

All other books of record at site shall have to be maintained as required in the CPA Code of works.

### **34. POURCARD SYSTEM**

Pour card system/RFI system to be introduced for approval of individual activity. Format to be got approved from engineer before start of work.

### **35. CLEANING OF SITE**

- a) All water which may accumulate on the site during the progress of the works or in trenches and excavation shall be removed from the site to the satisfaction of the Engineer at the Contractor's cost. Site shall be maintained free from rubbish. Proper stacking of scaffolding material, shuttering material bricks/ brickbats, steel pieces, etc. needed for work on day to day basis shall be organized in proper stacks. Heaps of material lying around in unplanned manner and disorderly fashion shall not be permitted. Engineer's decision in this matter shall be final.
- b) The Contractor shall not, at any time, do cause or permit any nuisance on the site or do anything which shall cause unnecessary disturbance or inconvenience to Employer, tenants or occupiers of other properties near the site and to the public in general. The Contractor shall install mosquito proof and accessible water storage tanks for construction and drinking water.
- c) The Contractor shall periodically give largasidal treatment to water storage tanks, sites of water stagnation, water collection.

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- d) Prior to handing over the contractor shall appoint Professional Cleaning Agency to clean the building works prior to handing over. The Agency shall have minimum 5 (five) years prior experience in the hospitality industry and shall be appointed with the prior approval by the Engineer.
- e) Any expenditure that may be incurred by NRDA to ensure that the above conditions are fulfilled by the Contractor will be debitable to Contractor's account and will be recovered from the running bills of the Contractor from time to time.
- f) Cleaning: Remove staining or reactive materials from new surfaces immediately during course of the Work.
- g) Debris: Remove hazardous accumulations of debris promptly, at least daily.
- h) Dust: Confine dust producing operations during painting and finishing .Vacuum immediately after completion.
- i) TRASH DISPOSAL
- j) General: Keep new buildings and site free from accumulations of waste materials.
- k) Removal: Remove cartons, crates, wrappings, lunch trash, and other trash from each room daily. Provide trash receptacles on each floor of each building and in convenient locations on the site.
- l) Burning: Do not burn trash or other materials on Owner's property.
- m) EXCESS MATERIAL; General: Remove excess materials, including demolished materials, excess earth, and excess building materials from Owner's property and dispose of legally.
- n) Clean: Keep paved drives on Owner's property and public streets and alleys clean, by cleaning daily, or more often if necessary, of earth and debris spillage from trucking involved in construction operations.

### 36. **FENCING**

During the construction, care shall be taken so that, areas around are not polluted and where required Hessian cloth shall be tied around, while work is in progress.

Further, it is obligatory on the part of the Contractor to fence the area allotted and earmarked by NRDA for labour camp, batching plant of the Contractor within a month of issuance of work order. The temporary fencing shall be provided in the area as directed by Engineer using vertical blinds using corrugated GI sheets about 3m high with necessary metal frame work and staging to cordon off the view of the premises. The Contractor shall maintain the fencing properly throughout the construction period.

### 37. **WATCH AND WARD**

The Contractor shall make necessary watch and ward arrangement for a period of three months from the date of total completion of work. No claim shall be paid to the Contractor towards the watch and ward during this period.

Protection General Requirements:

- a) **Laws:** Comply with applicable laws, ordinances, rules, regulations, and orders of authorities having jurisdiction for safety of people and protection of property from damage, injury, or loss.
- b) **Responsibility:** Be solely responsible for initiating, maintaining, and supervising safety precautions and programs concerning Project security, but obtain Owner's approval of methods to be used and location of safeguards. Submit to

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NRDA, through Engineer, drawings and written description of methods and devices Contractor intends to use and do not begin Work at the site until such means and methods are mutually agreed on by Owner and Contractor.

- c) **On Public Property:** In addition to other means used in the interest of safety or security, comply with the requirements of governmental agencies having jurisdiction
- d) **Safeguards:** Erect and maintain, as required by conditions and progress of the Work, necessary safeguards, for safety and protection, including temporary fences, guards, railings, barricades, canopies, lighting, shoring, directional and danger signs, signals, and other warnings against hazards.
- e) **Security:** Protect and secure the site, new materials and equipment from theft and damage by whatever reasonable means are effective. Use methods such as the following, singly or together: locks, fences, signs, patrols, radio, alarms, locked storage on-site, and off-site warehousing.
- f) **Wall Closures:** Unless other acceptable means are provided, provide temporary closures for openings in walls along adjoining to make the building and site secure. Secure temporary closures when Work is not in progress using suitable means such as dead bolts inaccessible from the public side or locks or padlocks construction master keyed in accordance with Section, "Finish Hardware."
- g) **Entrances:** Do not block entrances to premises to remain in use or in any way inhibit access to them.
- h) **Design Live Loads:** Do not permit placing materials or equipment on new to exceed design load of structure or endanger structure or people.
- i) **Trenches:** Do not permit trenches to remain open for prolonged periods without adequate board covering or fencing.
- j) **Broken Glass:** Be responsible for glass broken during construction period; at completion, replace broken glass.
- k) **Weather Protection:** During construction, provide protection against weather (rain, wind, storms, frost, or heat), and maintain work, materials, apparatus, and fixtures free from damage. At end of each workday, cover new work likely to be damaged.
- l) **Dust:** Take precautions necessary to keep Work under this Contract and adjoining property reasonably free of dust.
- m) **Protection of Construction Materials:** Refer to other specification sections for specific requirements.
- n) **Materials Hoist:** Do not permit transporting of people on materials hoisting facilities.
- o) **Removals:** Except for fences, remove temporary construction and protection specified in this section promptly when no longer needed and when removal is approved.
- p) Maintain temporary fences until date of Substantial Completion, unless approval is obtained for earlier removal; then remove the temporary fence.
- q) **Damaged Site Improvements:** Repair and restore to condition at beginning of construction, or better, existing site improvements, such as pavements, curbs, buildings, fences, lawns, plantings, and lighting which are not to be removed under this Contract but are damaged or defaced by Contractor's operations, except where new Work is required by the Contract.
- r) **First Aid Equipment:** Provide at the site. Also provide continually available trained and qualified personnel to render first aid when needed.
- s) **Emergency Signs:** Provide signs posted at telephones listing telephone numbers of emergency medical services, physicians, ambulance services, and hospitals.

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### **38. MOBILISATION PERIOD**

This clause shall be read in continuation of Clause No 10 (B) (ii) of GCC. The mobilization advance shall be limited up to 5% of value of work order. The mode of release of mobilization advance shall be as follows:-

- (i) 1% shall be released after issue of work order.
- (ii) 2% shall be released after completion of activities listed below.
- (iii) 2% shall be released after successful installation of Batching Plant.

Mobilization period for the Contractor shall be 30 (thirty) days from date of letter of intent. It shall be in phases and the Contractor is obliged to adhere to these timings.

#### **Phase I**

This shall be of 15 (fifteen) days and the Contractor shall carry out following:

- Compound/ Fencing to Site where required as per directives of Engineer.
- Contractor's Site Office (part). Engineer 's Site Office.
- Construction of temporary hutment of labour.
- Arrangement for water supply.
- Arrangement for electric supply.
- Submission of Bar Chart programme for approval by Engineer with details of temporary works, plants, equipment and machinery list.

#### **Phase II**

This shall be of balance 15 (fifteen) days and shall cover the following activities:-

- Establishing full site godown for cement and steel yard.
- Establishing internal water supply for construction activities. Establishing internal electric network for construction activities.
- Submitting for approval a list & appointment of specialized sub contractors intended to be engaged at site with detailed credentials/ profile of the contractors.
- Appointment of Anti-termite sub-contractor.
- Establishing laboratory with testing equipments.
- Submitting proposal for concrete mixes and casting trial cubes.
- Approval of Bar Chart programme by Engineer with details of temporary works, plants, equipment and machinery list.
- Arrival of centering & shuttering material.
- Line out including establishing of grid lines for project and its approval by Architect through Engineer. Line-out shall include the establishing of the critical Capitol Complex line-out and its connections to other proposed roads in Naya Raipur.

### **39. METHOD OF CARRYING OUT THE WORKS**

The Contractor shall, within 15 (fifteen) days of receipt of the Employer's order to commence work under respective clause of General Conditions of Contract

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submit for his approval a detailed programme and statement with drawings and diagrams showing how he proposes to carry out the works based on the tender programme. The statement shall describe the methods to be employed in carrying out the works, the Constructional Plant and temporary works which the Contractor intends to supply or use and shall include a list, classified into trades of labour force envisaged. The programme shall give the estimated dates on which the various sections of the works will commence together with the estimated date of completion and estimated output so that the whole of the works may be completed within the Contract Period.

- a) In addition, the Contractor shall submit to the Engineer drawings and full particulars of Temporary Works he intends to construct at least 8 (eights) days before he intends to commence such works. The Engineer may require modifications to be made if he considers the proposals to be insufficient and the Contractor shall give effect to such modifications at his own cost but shall not be relieved of his responsibility for the sufficiency thereof.
- b) The Contractor shall prepare a detailed survey of existing services on the site which he shall clearly mark up on a drawing for the approval by the relevant service authorities prior to commencement of the works.
- c) The Contractor is to progress the works thoroughly and to take such action as is necessary in order to ensure that the approved programme is strictly adhered to in all its stages. The Contractor shall submit detailed programmes of the various sections of the works as and when required by the Engineer, the Contractor shall take all precautions and cover all contingencies to ensure that adequate spare equipment and materials are available at all times to ensure completion of this work in accordance with the agreed programme.
- d) The acceptance of programmes as submitted by the Contractor or with any modification thereto, in the opinion of Engineer, shall not relieve the Contractor of his responsibility to complete the work within period specified in as per Annexure 'A' unless extension of time limit is expressly sanctioned under respective clause of standard General Conditions of Contract or Special Conditions of Contract.
- e) The Contractor shall prepare the CPM programme on computer and the same to be monitored by proper installation of PC and printer facilities at the site.
- f) The bills shall be on computer and the programme will incorporate the deductions of Mobilisation Advance and other items.

#### **40. CONTRACTOR RESPONSIBLE FOR SUFFICIENCY OF MEANS EMPLOYED**

The Contractor shall take upon himself the full and entire responsibility for the sufficiency of plant, centering, scaffolding, timbering, machinery, tools or implements and generally for all means used for the fulfillment of the Contract. In the event of any of these means proving insufficient, the Contractor is still fully and entirely responsible for the sufficiency of these means notwithstanding any previous approval or recommendation that may have been given by the Engineer.

#### **41. DRAWINGS**

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The Contractor will receive from the Engineer, 2 (two) prints of the tender drawings listed hereof, together or thereafter with any further drawings issued for Road, Water Supply Net Work, Sanitation Electrical, Landscaping Works, etc. Working drawings shall be progressively issued as per the approved construction schedule submitted by the contractor & approved by NRDA.

#### **42. STANDARDS**

In various places throughout this specification and the bills of quantities, reference is made to the standards, specifications and byelaws issued by the Indian Standard Institutions and other similar organizations. These references shall in every case be deemed to include the latest edition or issue of such standards, specifications and byelaws including all revisions, amendments and addendum subsequently issued. Where materials are not specified and standard exists in respect of such materials, then the materials shall in all respects comply with relevant and current I.S.I. In such cases where I.S.I. do not exist, the best manufacturers' specification shall be followed; in absence of all these, Engineer's instruction shall be followed.

#### **43. SUPERVISORY STAFF (As per clause 36 (i) of schedule F of the tender)**

The Contractor shall engage on the work a qualified and experienced Engineers, Supervisor, capable of managing and guiding the work properly as detailed in Cl36(i) of schedule F of the tender Form F-1. This supervisor shall be authorized by the Contractor in writing to receive the orders issued by the Engineer from time to time. The Contractor shall be responsible for carrying out these orders promptly.

#### **44. FIRE PRECAUTIONS**

The Contractor shall comply with fire regulations of the controlling authority in force at the site of the works relating to the precautions to be taken against fire hazards.

#### **45. USE OF SITE**

The Contractor shall not use any portion of the site for purpose not connected with the works without the prior written approval of the Engineer. He shall maintain permanent and site access roads free of spillage and shall not interfere with the flow of traffic. Also same shall apply to terraces and other developed areas. This clause shall be read in conjunction with clause no. 15 of the Special Conditions of Contract.

#### **46. SAFETY ENGINEER**

The Contractor shall employ and depute at site on full time basis a fully qualified Safety Engineer(s) who shall be responsible to ensure observance of safety precautions and measure required to be taken at site. Further he shall make sure stipulations laid down in safety code as provided in GCC.

#### **47. QUALITY ASSURANCE MANUAL AND SAFETY MANUAL**

Successful tenderers will be required to submit Quality Assurance Manual and Safety manual made as per applicable specification for various items of work and get the same approved from Engineer before start of work and the adhere the same during actual execution of work.

##### **i. Quality Assurance Manual (QAM)-**

A quality assurance manual constituting a base document outlining quality policy of the agency, procedures, name of action, compliance, acceptance criteria and documentation etc. Shall be prepared by the successful tenderer and submitted to the Engineer for approval within 15 (fifteen) days from the date of receipt of work order. The QAM shall be prepared in such a way that it follows all the



applicable specifications. The document shall generally cover aspects listed below, but not limited to the same.

**Scope of work**

- a) Planning for items to be executed including method statement and resource deployment both physical and financial.
- b) Identification of all parties involved in QA and their inter-relationship.
- c) Execution plan of Quality System giving reference - standard - frequency and acceptance criteria.
- d) Levels of cross checking/ verification in case of multiple verifications/ controls, including systems of inspection and audit, wherever applicable.
- e) Organization of personnel, responsibilities and lines reporting for QA purpose.
- f) Testing and statistical analysis.
- g) Inspection reports at the end and during defect liability period/ maintenance period.
- h) Items to be covered for maintenance manual,
- i) Check list viz. Forms and formats.

**ii. Inspection of Works at Factory/ Workshop**

For any visits that maybe necessary for the purpose of performance of testing, inspection of factory made goods/ equipments, at a location other than the site ,or Raipur, the actual cost of travel (to & fro airfare/ train A/c 1st class), boarding & lodging, local transport & per diem (per person per day) costs at the rate of Rs. 3000 (Rupees three thousand only) for any visit made by officials from NRDA/ PMC/ Architect/ Consultant (maximum 3 (three) persons per instance), shall be borne by the Contractor. Such visits may be necessary for the inspection of chillers, panels, elevators, transformers, DG sets, fabricated doors, etc. that require inspection prior to shipping from the place of its manufacture. Any other item which is required to be tested before being processed / fabricated in the factory, such visits shall require the prior written approval from the NRDA.

**48. QUALITY ASSURANCE SYSTEM**

A quality assurance procedure covering all aspects of the work shall be adopted for this work to ensure the desired quality. Details of the procedure shall be decided by mutual consultation between the Engineer and the contractor at the start of the works.

- a) The contractor shall submit within the time stipulated by the Engineer in writing, the details of actual methods that would be adopted by the contractor for the execution of any item as required by the Engineer at each of the locations, supported by necessary detailed drawings and sketches including those of the equipment and machinery that would be used, their locations, arrangements for conveying and handling materials etc., and obtain prior approval of Engineer well in advance of starting of such item of work.
- b) The Engineer reserves the right to suggest modifications or make complete changes in the methods proposed by the contractor, whether accepted previously or not, at any stage of work, to obtain the desired accuracy, quality safety and progress of work which shall be binding on the contractor and no

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claim on account of such change in method of execution will be entertained by the Employer so long as Specifications of the items remains unaltered.

- c) The Contractor shall furnish within the period of 15 (fifteen) days a detailed programmed schedule using PERT/ CPM technique in quadruplicate including the date of actual start, the monthly progress expected to be achieved and the anticipated completion date of each major item of work to be done by him, also indicating, plant and machinery and material procurement schedule.
- d) The schedule is to be such as is practicable of achievement towards the completion of the whole work in the time limit and of the particular items, if any, on the due date specified in the contract and shall have the approval of the Engineer. No revised schedule shall be operative without such acceptance in writing. The Engineer is further empowered to ask for more detailed schedule or schedules say weekly for any item or items, in any case of urgency of work as will be directed by him and the contractor shall supply the same as and when asked for.
- e) The contractor shall furnish sufficient plant, equipment and labour as may be necessary to maintain the progress schedule. The working and shift hours for operations to be done under.
- f) Further, the contractor shall submit the progress of work in forms and statements etc. at periodical intervals in the form of progress charts, forms, statements and / or reports as may be approved by the Engineer.
- g) The contractor shall maintain proforma, charts, details regarding machinery, equipment, labour, materials, periodical returns thereof as may be specified by the Engineer.

#### **49. EQUIPMENT MAINTENANCE MANUAL**

The Contractor shall mention the list of machinery procured at site for the work in this manual. This manual shall also reflect the name of the manufacturer, age of machinery and the agency entrusted with the maintenance work of the machinery listed in the manual.

#### **50. MINIMUM PLANTS,EQUIPMENTS AND SHUTTERING**

Sr. No	Particulars	Quantity
1	Computerised and Fully Automatic Concrete batching plant of minimum 15 Cum /hr capacity	1 No. minimum or as required
	Cement Silos for 2 (two) days capacity with direct feeding and batching facility	
	Hoopers for fine and course aggregate	
	Approved Plasticizer dozing facility	
	Software programme compatible to make corrections to batching /mix design.	
2	Concrete Pump of 15 Cum/Hr.	2 Nos.
3	Transit Mixer of 6 Cum capacity	2 Nos.
4	MS concrete Piping system for pumping	1 set per Pump set
5	JCB	2 Nos.
6	Poclain	2 No.
7	Poclain with Rocker Breaker	2 No.

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Sr. No	Particulars	Quantity
8	Vibrators	
A	Electric with low noise	2Nos.
B	Petrol ( Stand by)	2Nos.
C	Needles - 20	4 Nos.
D	Needles - 40	4Nos.
E	Needles - 65	4 No.
9	Bar Bending Machine up to 40mm dia.	2 No.
10	Bar cutting Machine up to 40mm dia.	2 No.
11	Material Hoist	2 Nos.
12	Curing Pumps	4 Nos.
13	Double legged tubular scaffolding System	As per requirement
14	Pan mixer of not less than 0.5 Cum	2 Nos.
15	Plate Vibrators of 1 ton capacity	2 Nos.
16	Minimum shuttering material to be provided by the contractor ( Good quality steel plates inc steel props etc.)	1000sqm
17	Hot Mix Plant ( Batch type with electronic and computer controls and vibratory screens)	Minimum 1 no. with 60t/hr capacity
18	Paver with electronic sensor for automatic level control for bituminous work	Minimum 1 no.: Capable of Paving 5.5m width
19	Paver with electronic sensor for automatic level control for laying WMM	Minimum 1 no.: Capable of Paving 5.5m width
20	Motor grader , 120HP , With 150kw engine output	2 Nos.
21	WMM mixing plant	Minimum 1 no. with 60t/hr capacity
22	Pneumatic tyred Roller ( minimum operating weight not less than 8t )	2 Nos.
23	Vibratory Roller (Minimum 10T operating Wt.)	2 Nos.
24	Tandem Vibratory Roller (Minimum 8T operating Wt.)	1Nos.
25	Bituminous Sprayer	1 No.

Note : The details referred to herein above are only for the purpose of quantitative assessment. The specifications & qualitative aspects of the shuttering material shall be in accordance with the BOQ & Technical specifications. The details are to be provided with in 30days after award of contract.

- 51. SUBMITTALS** Unless otherwise specified or directed by NRDA, the Contractor shall submit to NRDA for his review and approval all Co-ordinated services drawings, shop drawings, samples, materials lists, equipment data, instruction manuals, record documents, manufacturers' equipment manuals, design calculations for proprietary items of work, technical submittals, and other information required by the Contract Documents. Submittals and their contents including deviation shall be properly prepared, identified, and transmitted as provided herein or as the Owner may otherwise direct. Except for record documents and instruction manuals for operation and maintenance, submittals

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including deviation shall be approved before the material or equipment covered by the submittal is delivered to the site. The contractor shall furnish an authority if required from material suppliers.

## **52. PLANT, MACHINERY AND SHUTTERING**

The contractor is required to submit details of plants and machineries to be deployed by him in a Proforma indicating all details such as make, year of manufacture .registration etc be submitted. The details are to be provided with in 30days after award of contract.

## **53. SUB-CONTRACTORS**

All specialised works will be carried out by licensed (where applicable) sub contractors approved by NRDA.

- i. It may be noted that the contractors will have to submit credential of the selected contractors to NRDA for approval.
- ii. It may further be noted that even if the contractor has in house licensed subcontractors for these works, they will have to select and engage contractors with prior approval of NRDA.
- iii. All specialists, merchants, tradesmen and other agency executing any work or supplying and fixing any goods which items have been included in the Schedule of Quantities and/ or Specifications or for Extra/ Substituted items of works, who may be nominated or selected by the Engineer/ Contractor are hereby declared to be Sub-contractors employed by the Contractors. No nominated Sub-contractor shall be employed on or in connection with the works against whom the contractor shall make reasonable objection or (save where the Engineer and contractor shall otherwise agree) who will not enter into a contract provided:
  1. That the nominated sub-contractor shall indemnify the Contractor against the same obligations in respect of the sub-contractor as the contractor is under in respect of this contract.
  2. That the nominated sub-contractor shall indemnify the Contractor against claims in respect of any negligence by the Sub-contractor, his servants or agents or any misuse by him or them or any scaffolding or other plant, the property of the Contractor or under any Workmen's Compensation Act in force.
  3. That the nominated sub-contractor shall submit his bills to the Contractor.
  4. That the Contractor shall make payment to the nominated Sub- Contractor within 3 (three) days of the Contractor's receipt of the payment from NRDA against the Engineer certificates of payment providing that before any Certificate is issued, the Contractor shall upon request, furnish to the Engineer proof that the nominated sub-contractor's accounts included in previous certificates have been duly discharged in default whereof NRDA may pay the nominated Sub-contractors upon a certificate of the Engineer and deduct the amount thereof from any sums due to the Contractor. The exercise of this power shall not create privity of contract as between NRDA and Sub-Contractors.
  5. The Engineer in his absolute discretion may recommend payment to the nominated Sub-Contractor directly by NRDA and deduct the amount thereof from any sums due or which may become due to the Contractor or recover the same amounts from the Contractor.
  6. No Labor contracts shall be permitted.
  7. Prior approval of the Sub-contractor by the NRDA is mandatory.

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8. Required 2 No. of contractors as choice would be of NRDA
9. Further sub-contracting/ sub-letting of the work shall not be permitted.
10. NRDA shall not permit under any circumstances Assigning, Transferring or Subletting of entire work or substantial part of work to be executed under this contract. If the Contractor attempts or assigns, transfers and sublets the entire or substantial work, the contract shall be terminated by the NRDA without prejudice to any right or remedy which shall have accrued or shall accrue thereafter to the NRDA.
11. The Contractor shall not be permitted to give power of attorney for executing the work to any other agency or person on their behalf. The power of attorney for executing the work shall only be given to regular employee of the agency with prior approval of NRDA.

iv. **Works to be Sub-Contracted & Prequalification criteria:-**

The details of work to be subcontracted and PQ criteria shall be governed as mentioned in detailed NIT

v. **ESSENTIAL CONDITIONS FOR ELECTRICAL WORKS:-**

1. The Sub-contractor for carrying out the electrical works under the contract should strictly be in accordance with the above criteria.
2. All above referred works will have to be carried out under the supervision of Engineer.
3. Power supply distribution scheme given in tender document is only for guideline purpose. However, successful agency will be responsible for obtaining necessary sanctions to over all power supply distribution scheme, from CSEB / applicable local authority and Engineer before starting execution of work. No extra charges will be paid for obtaining necessary approvals/ sanctions to power supply distribution scheme sanctioned by concerned power supply authority CSEB / applicable local authority, successful agency will have to take up and complete the work accordingly.
4. Successful agency will have to obtain the required approvals to the total electrical works such as, HT/ LT distribution, Sub-station, Meter rooms, DG sets, etc from CSEB / applicable local authority/ concerned power supply authority, Electrical Inspector, authority or any other statutory body at their own cost before starting execution of the work and the original sanctions obtained should be submitted to NRDA's concerned Electrical Division before execution of the work. Any statutory cost for obtaining the approval will be reimbursed on production of original receipts.
5. It will be the responsibility of the agency to get the energy meters of the DG sets approved/ tested/ sealed from the necessary authorities.
6. The electrical works under the scheme should be carried out strictly in Co-ordination with the concern CSEB / applicable local authority and necessary approvals should be obtained from time to time.
7. Activity Bar Chart and the makes of material should be submitted for electrical works for necessary approvals from the competent authority from NRDA before execution of the work and work should be started only after the approvals.
8. It will be the agency's responsibility to obtain the following listed documents from CSEB / applicable local authority. Electrical Inspector authority and other concerned

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Statutory Body towards completion of the work at their own cost, without which work will not be treated as completed.

- a) Sanction papers for the total external electrification works along with BOQ of material, demand note for supervision charges, if any.
  - b) Charging permission of the installation.
  - c) Inspection report of the various equipments & material supplied under the electrification work certified by CSEB / applicable local authority and NRDA authorities.
  - d) Manufacturers test certificates and guarantee certificates in original for all the equipments and material supplied for execution of electrification work under the scheme.
  - e) As Built drawings as stated Volume I for substation, HT/LT network, meter room, etc. showing all the details and certified by CSEB, Electrical Inspector authority (along with soft copy).
  - f) As Built Drawings as stated Volume I for internal electrification work, area lighting work, water pumps, etc. (along with soft copy)
  - g) Earth test report for the total installation.
  - h) Work completion report from CSEB / applicable local authority for the total electrification work including substation, HT/LT distribution, Meter Room etc. should be submitted.
  - i) Handing over of the total electrification work under the scheme, such as substations, including equipments, HT/LT distribution, meter room with energy meters to CSEB / applicable local authority. The letter in writing for taking over of the installation as above addressed to Engineer should be obtained from CSEB and should be submitted along with details of scheme.
  - j) Separate guarantee, from the electrical agency should be submitted to NRDA against the electrical works carried out under the scheme, for a period of 24 (twenty four) months including defects liability period in order to avoid any inconvenience in connection with releasing and common services under the scheme and also to attend any defects in installation during this period.
  - k) Required electrician/ Helpers are to be deployed round the clock for Operation & Comprehensive Maintenance of total Utility works & installations for a period of 24 (twenty four) months from the date of completion OR taking over of the installation whichever is later.
9. All material & equipments to be supplied under this contract shall be offered for inspection at the manufacturing place. No material shall be supplied by the agency without the clearance from the Engineer.
10. The total electrification work under the scheme will have to be carried out as per the terms & conditions mentioned in various sections of the Tender Document.
11. Electrical works under the contract will not be treated as completed unless and until above listed activities are completed by successful agency.

54. **Subject** work is strictly to be completed within stipulated work completion

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period and in accordance with the activities listed below completely as per the directives from Engineer. The charges and the expenses for completing the following listed activities should be included in the quoted offer and no separate payments against this will be made.

1. Successful agency will have to obtain and submit the Contractor All Risk Insurance Policy (CAR) in original within 1 (one) week from date of work order from Director of Insurance, Government Insurance Fund, Raipur, Chhattisgarh. The Contractors All Risk (CAR) Policy as said above shall be inclusive of insurance coverage under workman's compensation insurance policy for all workmen employed by contractor to complete the works covered under present contract. Further the contractors All Risk Policy period completely as stated in the tender. In case of time period extension (If any), it is essential that, premium of CAR policies should be timely paid by agency in order to ensure the continuity of CAR policy without any break in the same, suitable action will be taken against defaulters as per General Conditions of Contract unless and until the Contractors All Risk Policy as stated in above manner is submitted to the office of Engineer no payments will be released against any work executed.

2. Obtaining necessary scheme sanctions in detail towards execution and completion of subject work in all respect, from concerned CSEB / applicable local authority. This activity includes required co-ordination and follow-up with concerned CSEB / applicable local authority for obtaining necessary scheme sanctions. The scheme sanction should be inclusive of specifications and required layout and other drawings etc. completely as per the requirement.

The payment towards the supervision charges of CSEB / applicable local authority shall be paid directly to CSEB / applicable local authority on behalf and in the name of NRDA by the agency.

The original scheme sanctions along with original certified drawings, specification details, quotations, payment receipt against supervision charges etc. should be submitted to the Engineer.

The supervision charges paid in the name of NRDA as mentioned above shall be reimbursed on submission of original payment receipts.

3. If required, preparation and submission of execution drawing in co ordination with concerned planning authority of NRDA by engaging Govt. approved Surveyor for confirmation and marking of proposed cable routes, location of control pillar, existing services along the proposed route under the present contract as per the sanctioned scheme obtained from CSEB Reports and marked computerized plans duly certified by surveyor in 3 sets of should be submitted after carrying out the details survey as mentioned above.

4. Obtaining necessary road/ soil/ footpath etc. cutting permission for cable trenching from concern authorities like NRDA/ CSEB/applicable local authority/ RMNN/ PWD etc. as applicable along the approved route and submit the approval in original along with the drawings and permission to Engineer.

The charges required for obtaining the approvals and permission as mentioned above should be directly paid on behalf and in the name of NRDA by the agency.

Signature of Contractor.....

Signature of NRDA.....

The charges paid in the name of NRDA as mentioned above shall be reimbursed on submission of original payment receipt to the Engineer

5. Preparation and submission of shop/ execution drawing to Engineer for approvals. Submitting list of Makes of various items and material to be used under present contract for approvals.

The Contractor or his qualified engineer having updated technical knowledge for execution of the subject work should invariably remain present and co-ordinate during every inspection and testing programme at manufacturers works, similarly during every joint site visits and when required.

7. After supply of material at site, all the documents such as delivery challan, excise gate pass, material test report (in original), etc. should be submitted to Engineer for obtaining installation clearance.\*

The complete work under the present contract shall be carried out with required supervision, stage-wise inspection from concerned authority of CSEB / applicable local authority & Electrical Inspector authority in co-ordination with Engineer complete with required power shutdowns. The record of all inspection and shutdowns shall be submitted to Engineer.

8. The execution work of cable trenching/ foundation for poles/foundation of feeder pillar/excavation and trenching in all types of surfaces rocks, soils etc. shall be carried out as per approved route plan by using appropriate tools and machines in close co-ordination with concerned authorities from NRDA, CSEB/ applicable local authority, etc. completely as per the requirement so as to avoid the damages to the existing services.

9. Obtaining clearance certificate from concern authority of NRDA, RNN, PWD, CSEB/ applicable local authority, etc. as applicable, towards completion of re-surfacing work of cable trenches, excavated surfaces and removal of debris and submission of this clearance certificate in this regard obtained from concerned authorities to Engineer.

\* In absence of activity No. 1 & 15 above, the payment towards cable trenches erection and installation will not be released.

10. Arranging and carrying out pre & post testing and commissioning of the completed installation in presence of Engineer, his representative and the representative of any other statutory authorities like CSEB / applicable local authority & Electrical Inspector etc. as required.

11. Excess saving statement as per final execution of work, item wise measurement break up in detail and escalation claim as applicable along with detail calculations and copies of confirmed indices etc. to be submitted to Engineer.

It is mandatory to complete all the activities listed above from Sr.No.1 to 11 for releasing the final payment.

55. Following conditions are the essential conditions of contract for carrying out and completing the subject work in all respect within stipulated time period. The successful agency will be responsible for completing the same as per the directives of Engineer. The charges and expenditure if any required for completing the same should be including in the quoted offer, and no separate payments against this will be made.

Signature of Contractor.....

Signature of NRDA.....



1. The contractor shall visit the site to access the actual quantum of work and period required for completing the same before quoting the offer.
  2. Scheme specifications and quantity of the material to be used for the subject work under the contract and specified in the tender document is only for guideline purpose. However it will be the responsibility of the successful agency to obtain the measurements and specifications in detail of each and every item before starting the execution of work and complete the work in accordance with the approvals, clearances obtained for the same. All cost required for completion of work as per statutory approval, shall deemed to have included in the offer quoted.
  3. The foundation and excavation for feeder pillar and control pillar, grouting of frames in wall/ ground etc, are require to be carried out by the agency, and cost for the same shall be include in the offer quoted.
  4. It will be Agency's responsibility to obtain necessary sanctions and permissions by paying necessary charges towards;
    - a) Obtaining necessary scheme sanctions and permissions for completing the subject work in all respect form any concerned statutory authority.
  5. The successful agency will be completely responsible for accidents occurred if any during the execution of work as well as during 24 (twenty four) months defect liability period under this contract. It will also be the responsibility of agency, for making police complaints against any thefts and accidents etc. under intimation to NRDA.
  6. Charges against following listed activates should be included in the quoted offer itself and no separate payments will be made against same.
    - a) Arranging and carrying out the material inspecting at respective manufactures unit as sated in Annexure - I.
    - b) Arrangements for performing site visits and other connected activities as and when required by Engineer or his representative.
    - c) Carrying out necessary co-ordination and follow up with concern authorities for obtaining necessary sanctions and permissions as required towards completion of work in all respects.
    - d) Appointing Govt. approved surveyor for carrying out site survey and preparation of computerized shop drawing, Execution drawing, As built drawing etc. with soft copy.
    - e) Any other incidental charges required towards completion of work in all respect.
  7. Bills submitted against the executed and completed works at site, will be processed further by Engineer, after necessary scrutiny and verification.
56. The services/ tasks/ works as referred to under clauses shall be suitably applicable to all Utility services executed **by** the contractor, whether specifically mentioned herein above or no.
57. **Safety, Security and Protection of the Environment**

Signature of Contractor.....

Signature of NRDA.....



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 watching, when 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.

58. **HANDING OVER PROCESS:-**

The handing over process shall be based on a performance comprising individual activities. The process shall be approved by the Engineer.

59. **EROSION AND SEDIMENTATION CONTROL**

- i. **General:** Prevent pollution of land, air, and water; control erosion, washout, and surface runoff of earth and stockpiled materials. Preclude sedimentation in general and especially in existing on-site and public storm-water system and public right of way.
- ii. **Procedures:** Perform erosion, sedimentation and temporary storm-water control. Follow procedures stipulated in local laws and regulations and as shown on Sitework drawings.
- iii. **Maintenance:** Maintain controls in place until permanent controls are functioning. Remove when no longer needed.

60. **NOISE AND VIBRATION CONTROL**

Noise and Existing Building Structure Vibration Generated by Construction Procedures, Equipment, Tools, and Operations: Keep to minimum practicable during demolition and removal from building and site, including loading and removing storage containers. Equipment generated noise levels shall not exceed the following in decibels:-

- 1. Concrete mixer: 85
- 2. Concrete pump: 82
- 3. Crane: 83
- 4. Materials elevator:
- 5. Pumps: 76
- 6. Generators: 78
- 7. Compressors: 81
- 8. Pneumatic tools: 86
- 9. Saws: 78
- 10. Vibrators: 76
- 11. Other tools: 85

Signature of Contractor.....

Signature of NRDA.....

- i. Operation of Air Hammers, Compressors, and Reciprocating Equipment: Not permitted inside existing buildings unless specifically approved in writing by Owner.
- ii. Laws: Comply with applicable noise control laws, ordinances, and regulations.
- iii. Acoustical Enclosures: Stationary equipment may be enclosed to produce required sound attenuation subject to continued maintenance of such enclosures to ensure that specified sound levels are not exceeded.
- iv. Violations: Where field sound measurements reveal sound levels exceeding those specified, cease operating such equipment and repair or replace it with equipment that complies with the sound levels specified.
- v. Cutting and Drilling Concrete: Use only rotary or core drilling for holes through concrete. Do not use impact tools to cut or otherwise remove concrete or to install inserts.
- vi. Power-Activated Tools: Not permitted in or immediately adjacent to existing buildings, except with Owner's written approval in each specific case, except where such use is specifically specified.

**61. EXISTING CONDITIONS**

- i. Contractors Examination of Site:-
  - 1. By executing Contracts, Contractor and subcontractors represent that they have:
    - a. Visited the site and made due allowances for difficulties and contingencies;
    - b. Compared Contract documents with existing conditions and informed themselves of conditions to be encountered, including work by others, if any, being performed; and
    - c. Notified Architect of ambiguities, inconsistencies, and errors they have discovered within Contract documents or between Contract documents and existing conditions.
  - 2. Failure to visit the site and become familiar with conditions shall not relieve Contractor or a subcontractor from furnishing materials or equipment or completing the Work in accordance with Contract documents at no additional cost.
  - 3. Contractor or subcontractors will not be given extra payment for Work related to conditions they can determine by examining the site and Contract Documents.
  - 4. Contractor or subcontractors will not be given extra payment for work related to ambiguities, inconsistencies, or errors within Contract documents, or between Contract documents and existing conditions, when such ambiguities, inconsistencies, or errors are known to Contractor or subcontractor before Contract execution unless Contractor or subcontractor has notified Architect in writing of such condition before execution of Agreement Between Owner and Contractor.
- ii. Make use of public property and make arrangements for that use. No extra compensation will be paid due to costs associated with using public property.
- iii. Access by Contractor to portions of Owner's property beyond the actual area of Work under this contract is denied, except where necessary to perform the Work, and then only with specific written approval in each

Signature of Contractor.....

Signature of NRDA.....

case. Refer to other sections for additional requirements.

- iv. Contractor shall accept the site in the condition in which they exist at the time Contractor is given access to begin the Work.
- v. Damage caused by Contractor to existing structures, grounds plants, pavements, utilities, work by others, fixtures, or furnishings, shall be repaired by Contractor and left in as good condition as existed before the damaging, unless such existing work is shown to be removed or replaced by new Work.
- vi. Immediately upon entering the site for purposes of beginning Work, locate general reference points and take such action as is necessary to prevent their destruction; lay out Work and be responsible for lines, elevations, and measurements, and Work executed under this Contract. Exercise proper precautions to verify figures shown on Drawings before laying out Work. See Section "Field Engineering" for additional requirements.
- vii. Contractor and each subcontractor, before starting work, shall verify governing dimensions at the premises, including floor elevations, floor-to-floor heights, and column locations and shall examine adjoining Work on which Contractor's or subcontractor's Work is in any way dependent. No "Extra" or additional compensation will be allowed on account of differences between actual measurements and dimensions shown. Submit differences discovered during the Work to Architect for interpretation before proceeding with associated Work.
- viii. Employment of local labour shall be given priority wherever possible. However,
- ix. this shall not in anyway affect/ dilute the Contractors obligations listed within the Tender document.

## **62. LAMINATION OF DRAWINGS**

All drawings issued to site shall be kept in lamination condition.

### **1. Maintenance of installed equipments ,macheneries and fixtures :**

The Contractor, at the time of bidding, will be responsible to ensure the completeness and adequacy of his Bid Price to fulfill the entire responsibilities for Maintaining the installation of all installed equipments , machineries and fixtures minimum for a period of 1 year from the date of commissioning and imparting training to the workers/staff as asked for maintaining the installations as per IS requirement and exercising.

### **2. Handing Over:**

At the time of handing over after completion of work, all the equipment, spare including standby equipment etc. must be in good working order as were taken over before commencement of defect liability period.

### **3. Penalties for failure to achieve the functional guarantees during Defect liability Period**

In case of failure to deliver the required quality of work, liquidated damages shall be imposed for such failure to meet the performance criteria, as described below. The Employer will be entitled to recover any such damages from the security deposits of the contractor or any other sum due to him. However, the contractor shall be allowed to take up routine / periodical maintenance as per IS guidelines, with prior permission of the Authority.

Signature of Contractor.....

Signature of NRDA.....

- i. Non redressal of any complaint or instruction given in writing by NRDA within 48 hours: Penalty @ Rs. 6000.00 for each such complaint.

**63. ORDER OF PRECEDENCE**

In case of any discrepancy between the items mentioned in the BoQs/Specifications/Drawing, the Order of precedence should be as follows:

- i. Item details as mentioned in the BoQs, read along with the specification shall prevail. However in case of conflict specification shall hold good.
- ii. Drawings.

**64. PAYMENT**

- I. The Contractor, at the time of bidding, will be responsible to ensure the completeness and adequacy of his Bid Price to fulfill the entire responsibilities as described above.

Signature of Tenderer  
Date :

For  
Chief Executive Officer,  
NRDA, Near Mantralaya Mahanadi Dwar,  
Raipur 492 001, Chhattisgarh.  
Date :

Signature of Contractor.....

Signature of NRDA.....

# **SCHEDULE– D**

## **Section-V**

### **List of approved makes**

For the items missing in the list, the relevant IS Code and specification should be binding on the contractor. The contractor should take approval wrt the approved vendor list prior to any procurement from the Engineer in charge.

### APPROVED MAKE LIST FOR CIVIL WORKS

Sr. No.	Item	Approved Make
1	Cement PPC/OPC	Ultratech/Lafarge/Ambuja/ACC/Birla /Century
2	TMT	TATA/SAIL/RINL/Jindal/ Essar
3	Fly ash bricks	Fly ash bricks confirming to IS 12894-1989
4	Water proofing compound	Siko/Foas rock/BASF/MC bauchemie/Dr. Fixit
5	MS Steel (Angle/channel/I beam etc )	Jindal /SAIL/ TATA
6	Aluminium standard tubular sections/ Appropriate Z sections and other section	Jindal/ Hindalco
7	Glass/Mirror	Saint Gobain / Modi /Pilkington
8	Plastic Emulsion Paint	Asian/Berger/Nerolac
9	Synthetic Enamel Paint /Primer	Asian/Berger/Nerolac
10	Wall putty	Birla , JK
11	Spider Fittings, WCP profiles ,Patch Fittings	Dorma/ Dline/Heffle/Hattich
12	Texture Paints (Exterior)	Heritage/ Ultratech/Asian Paints
13	Texture Paints(Interior)	Heritage/Ultratech/Asian Paints
14	GRC Screens/Louvers	Unistone
15	Composite Aluminium Panels	Alucobond/Eurobond
16	Polycarbonate Sheets	G.E. / WILSON
17	Adhesives, Grouts and Sealers	FerrousCrete / Weber (Saint Gobain) / Laticrete / Bal-Endura
18	Water Proofing Admixtures	Dr.Fixit/ Pidilite/Kryton/McBouchair/Forsroch/ BASF

# **SCHEDULE– D**

## **Section – VI**

### **Drawings**

Signature of Contractor.....

Signature of NRDA.....

**LIST OF DRAWINGS**

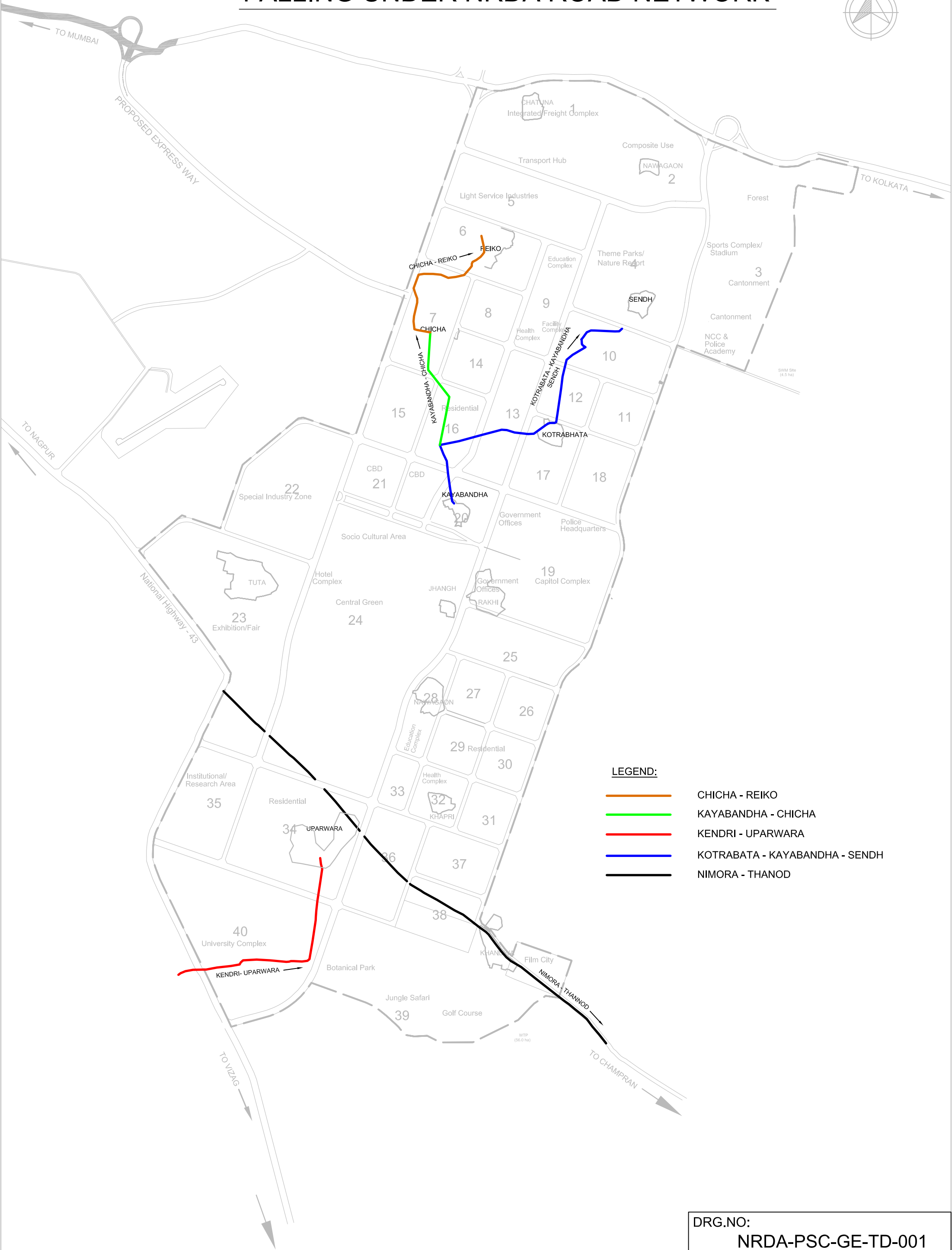
Sr. No	Drawing No	Drawing Title
1	NRDA-PSC-GE-TD-001	Key Plan Showing the Location of the candidate Roads for Repair and Rehabilitation Works.

Signature of Contractor.....

Signature of NRDA.....



# REPAIR AND REHABILITATION OF PWD ROAD FALLING UNDER NRDA ROAD NETWORK



- LEGEND:**
- CHICHA - REIKO
  - KAYABANDHA - CHICHA
  - KENDRI - UPARWARA
  - KOTRABATA - KAYABANDHA - SENDH
  - NIMORA - THANOD

# **SCHEDULE– E**

## **Reference to General Conditions of contract.**

Signature of Contractor.....

Signature of NRDA.....

**SCHEDULE-E****Reference to General Conditions of contract.**

**Name of Work:** Repair and Rehabilitation of PWD Roads which fall within the Jurisdiction of the NRDA in Naya Raipur

Estimated cost of work : Rs. 28.63 Lakhs

(i) Earnest Money INR : Rs 29000

(ii) Performance : 5% of tendered value  
Guarantee

(iii) Security Deposit : 5% of tendered value

Signature of Contractor.....

Signature of NRDA.....

# SCHEDULE- F

## General Rules & Directions

Signature of Contractor.....

Signature of NRDA.....

**SCHEDULE-F****GENERAL RULES & 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	<b>Any Officer Appointed by CEO, NRDA</b>
2(viii)	Accepting Authority	<b>Chief Executive Officer, NRDA</b>
2(x)	Percentage on cost of materials and Labour to cover all overheads and profits:	15 %
2(xi)	Standard Schedule of Rates	<b>CG SoR with Updated Amendments</b>
2(xii)	Department	Naya Raipur Development Authority

**Clause 1**

- |      |   |               |
|------|---|---------------|
| (i)  | Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance | <b>7 days</b> |
| (ii) | Maximum allowable extension beyond the period provided in (i) above                                 | <b>7 days</b> |

**Clause 2**

Signature of Contractor.....

Signature of NRDA.....

Authority for fixing **CEO, NRDA**  
compensation under clause 2

### Clause 2A

Whether Clause 2A shall be applicable **No**

### Clause 5

Number of days from the date of issue **15 days**  
of letter of acceptance for reckoning  
date of start

Mile stone(s) as per table given below:-

***To be submitted by the tendered on award of work***

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 mile stone
1.		NA	
2.		NA	
3.		NA	
4.		NA	
5.		NA	

Time allowed for execution of work **2 months including Rainy Season**

Authority to decide:

Signature of Contractor.....

Signature of NRDA.....

- (i) Extension of time **CEO, NRDA** (Engineer in Charge or Engineer in Charge of Major Component in case of Composite Contracts, as the case may be)
- (ii) Rescheduling of mile stones **Chief Engineer ( Engineering)**

**Clause 6, 6A**

Clause applicable - (6 or 6A) **6A**

**Clause 7**

Gross work to be done together with **Rs 10 Lakhs**  
 net payment /adjustment of advances  
 for material collected, if any, since the  
 last such payment for being eligible to  
 interim payment

**Clause 10A All the materials as per contract.**

1. .... 2. .... 3. ....  
 4. .... 5. .... 6. ....

**Clause 10B(ii)**

Whether Clause 10B (ii) shall be **Applicable subjected to Clause as per Special conditions of contract**  
 applicable

**Clause 10C**

Component of labour expressed as **Applicable**  
 percent of value of work

**Clause 10CA Applicable**

Signature of Contractor.....

Signature of NRDA.....

Sl. No.	Material covered under this clause	Nearest Materials (other than cement, reinforcement bars and the structural steel) for which All India Wholesale Price Index to be followed	Base Price of all Materials covered under clause 10 CA*
1.			
2.			
3.			
4.			

\* Base price of all the materials covered under clause 10 CA is to be mentioned at the time of approval of NIT.

#### Clause 11

Specifications to be followed for execution of work

**Tender specification attached with Tender document, CPWD, MOSRTH, CPHEEO and relevant IS Specifications.**

#### Clause 12

12.2. & 12.3 Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for Road and allied infrastructure work.....

**25%**

12.5 Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for foundation work.....

**25%**

#### Clause 16

Competent Authority for deciding reduced rates.

**Chief Engineer ( Engineering), NRDA**

#### Clause 18

Signature of Contractor.....

Signature of NRDA.....



List of mandatory machinery, tools & plants to be deployed by the contractor at site:-

As per relevant Clause of Special Conditions of Contract

### Clause 36 (i) :Minimum Technical Representative(s) and recovery Rate

Sl. No.	Designation (Principal Technical/ Technical Representative)	Number	Educational and Relevant Experience	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)
9	Site Engineer	1	Graduate in Civil Engg. With Experience of at least 5years/ Dip. In Civil Engg. With 8 years of experience in site supervision of construction projects.	1000/day/head

# DTP Operator should be placed with Engineer in Charge in his office within ten days from the signing of agreement and upto 30 days beyond the date of completion of work. He shall assist the Engineer in charge in day to day activities.

### Clause 42

- (i) (a) Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of C.G.S.O.R Not Applicable
- (ii) Variations permissible on theoretical quantities:
  - (a) Cement
    - For works with estimated cost put to tender not more than Rs. 5 lakh. 3% plus/minus.
    - For works with estimated cost put to tender more than Rs.5 lakh. 2% plus/minus.
  - (b) Bitumen All Works 2.5% plus & only & nil on minus side.
  - (c) Steel Reinforcement and structural steel sections for each diameter, section and category 2% plus/minus

Signature of Contractor.....

Signature of NRDA.....

(d) All other materials.

Nil

**RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION**

Sl. No.	Description of Item	Rates in figures and words at which recovery shall be made from the Contractor	
		Excess beyond permissible variation	Less use beyond permissible variation
1.	Cement	NA	NA
2.	Steel Reinforcement	NA	NA
3.	Structural Sections	NA	NA
4.	Bitumen issued free	NA	NA
5.	Bitumen issued at stipulated fixed price	NA	NA

Signature of Contractor.....

Signature of NRDA.....



**NAYA RAIPUR DEVELOPMENT AUTHORITY**

**Tender document for the Repair and Rehabilitation  
works of PWD Roads which fall within the  
Jurisdiction of NRDA in Naya Raipur.**

**(Following Three-Envelope Tender Procedure)**

**Schedule – A  
Price Tender  
To be submitted in ENVELOPE-3  
Percentage Rate Tender**

**NIT No :** 16 /RPWD / CONR / CE(E) / NRDA / 2012-13, Raipur,

**Dated:** 05.05.2012

**Issued by:** Chief Executive Officer,  
Naya Raipur Development Authority (NRDA)  
Near Mantralaya Mahanadi Dwar  
Raipur 492 001, Chhattisgarh  
Tel: (0771) 4066011, Fax: (0771) 4066188,  
E-mail: ceo@nayarapur.com

## Tender Document Contains

- (a) Only schedule "A" and Section-I of schedule "D" are to be filled & signed by the tenderer
- (b) All the certificates as per pre qualification criteria shall be appended with relevant forms of schedule "D"

### 1. PART ONE (NRDA F-1)-(Attached herewith, to be submit along the tender)

#### Part (A)

- a) Press Notice
- b) Detailed NIT

#### Part (B)

#### a) Schedule-A

##### (i) Cost Abstract

##### (ii) Bill of Quantities

- b) Schedule-B –NIL
- c) Schedule-C –NIL
- d) Schedule-D

#### Section-I..... Technical tender forms

- (i) Letter of Technical Tender
- (ii) Tenderer's Information Sheet
- (iii) Annual Turnover
- (iv) Specific Construction Experience
- (v) Declaration
- (vi) Check list for Technical tender evaluation

#### Section –II .....Scope of work

#### Section –III..... Technical specifications of work

#### Section –IV..... Special Conditions of Contract

#### Section –V..... List of approved makes

#### Section –VI..... Drawings

- e) Schedule-E
- f) Schedule-F

### 2. PART TWO (NRDA F-2/3) )-Standard form (Not Attached herewith, and not to be submitted along the tender) Important note: - Link site <http://nayarapur.com/documents/gcc.pdf>

1. General Guidelines
2. Tender
3. General rules and directions
4. Conditions of contract
5. Clauses of contract
6. Model rules relating to labour, water supply and sanitation in labour camps safety code
7. Sketch of cement Godown
8. Contract forms
  - (a) Draft Format for Performance Security
  - (b) Earnest Money Deposit Form (Bank Guarantee)
  - (c) Format of Contract Agreement
  - (d) Draft Format for Performance Guarantee for Water Proofing and Anti-termite Works
  - (e) Indemnity Bond
  - (f) Indenture Bond
  - (g) Notice for Appointment of Arbitrator
9. Proforma of schedules (Schedule 'A' to Schedule 'F')

Signature of Contractor.....

Signature of NRDA.....

## **Naya Raipur Development Authority (NRDA) Raipur, Chhattisgarh**

### **Document details**

**Name of work : Repair and Rehabilitation works of PWD Roads which fall within the Jurisdiction of NRDA in Naya Raipur**

**Name of Tender:**

### **Details**

- a) Cost of Tender Document : Rs
- b) EMD : Rs

Signature of Tenderer

Date:\_\_\_\_\_

Signature of Contractor.....

Signature of NRDA.....

# **Price Tender**

## **To Be submitted in Enevelope-3 as Price Tender**

**Schedule –A**

**(For Percentage Rate Tenders)**

In respect to percentage rate tenders contractor should quote his separate tender percentage rate above or below or at –par the following schedule of rates:-

**SCHEDULE OF ITEMS**

Sl. No.	Description of Item	Unit	Quantity	Rate in INR	Amount in INR	CGPWD SOR Item No.	Remarks
1	Filling with fresh soil, Making Up loss of Material/irregularities on shoulder to the design level by adding fresh approved soil and compacting it with appropriate equipment.	sqm	10900.00	51.00	555900	10.2	
2	Filling pot-holes and patch Repairs with open-graded premix surfacing , 20mm (Removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per clause 503, back filling the pot holes with hot bituminous material as per clause 511, compacting, trimming and finishing the surface to form a smooth continuous surface all as per clause 3004.2	sqm	45.00	103	4635	10.4	
3	Scarifying existing bituminous surface to a depth of 50mm(scarifying the existing bituminous road surface to a depth of 50mm and disposal of scarified material within all lifts and leads up to 1000meters	sqm	3815.00	16	61040	3.8	
4	<b>Dense Graded Bituminous Macadam</b> (Providing and Laying dense bituminous macadam with 40-60 TPH HMP using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5% by weight of total mix of mix filler, transporting the hot mix to work site, laying with hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No.507 compete in all respects.)						
A	With Mechanical paver finisher						

Sl. No.	Description of Item	Unit	Quantity	Rate in INR	Amount in INR	CGPWD SOR Item No.	Remarks
ii	for Grading II(19 mm nominal size bitumen content 4.5%)	cum	4.20	5779.00	24271.8	5.9	
5	<b>Prime Coat</b> (providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying primer at the rate of 0.85 kg/sqm using mechanical means	sqm	105.00	36.00	3780	5.1	
6	<b>Tack Coat</b> Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom and as per clause 503 of section 500						
	Dry and hungry bituminous surfaces/granular surfaces treated with primes @ 0.30kg/Sqm	sqm	3920.00	13	50960	5.2	
7	<b>Tack Coat</b> providing and applying tack coat with bitumen emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom .						
	Granular Surface treated with primes@ 0.45kg/sqm	sqm	3710.00	20	74200	5.3	
8	<b>Built Up Spray Grout</b> (Providing, Laying and rolling of built-up-spray grout layer over prepared base consisting of a two layer composite construction of compacted crushed coarse aggregates using motor grader for aggregates. key stone chips spreader may be used with application of bituminous binder after each layer, and with key aggregates placed on top of the second layer to serve as a base conforming to line, grades and cross-section specified, the compacted layer thickness being 75mm	sqm	3710.00	217	805070	5.7	



Sl. No.	Description of Item	Unit	Quantity	Rate in INR	Amount in INR	CGPWD SOR Item No.	Remarks
9	<b>Close Graded Premix Surfacing/ Mixed Seal</b> Surfacing (Mechanical Means using HMP of appropriate capacity not less than 60 tonnes /hour. Providing, laying and rolling of close graded premix surfacing material 20mm thickness using penetration grade bitumen to the required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 tonne capacity, and finishing to required level and grade.)						
	with 60/70 grade bitumen						
	Type B(13.2 mm to 0.09mm size aggregates)	sqm	4515.00	113	510195	5.14	
10	<b>Bituminous Concrete</b> (Providing and laying bituminous concrete with 60-90 TPH hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder @ 5.0 to 6.0% of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects)						
	With mechanical paver finisher						
	for Grading II (13 mm nominal size) with bitumen 6.0 %	cum	105	7359	772695	5.11	
<b>Grand Total</b>					<b>2862746.8</b>		

Note: - In case of any discrepancy in this table vis-à-vis the applicable S.O.R. the provisions contained in the applicable S.O.R. shall prevail.

The contractor should quote his separate tender percentage rate.....above or  
.....below or at-par the above schedule of rates.

Contractor

Dated:.....