

Engineering Procurement and Construction  
(EPC) Agreement For

Construction of 4 laning of Rishikesh Bypass from Design Chainage km 529+750 (Near Teenpani Flyover on NH-7) to Design Chainage km 542+420 (Near Kharasrote Bridge), passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km). on EPC mode.

Ministry of Road Transport & Highways  
(MoRT&H)

April 2026

# Table of Contents

<b>Part I</b>	<b>1</b>
<b>Preliminary</b>	<b>1</b>
<b>1 Definitions and Interpretations</b>	<b>4</b>
1.1 Definitions	4
1.2 Interpretation	10
1.3 Measurements and arithmetic conventions	13
1.4 Priority of agreements and errors/discrepancies	13
1.5 Joint and several liability	14
<b>Part II</b>	<b>15</b>
<b>Scope of Project</b>	<b>15</b>
<b>2 Scope of the Project</b>	<b>16</b>
2.1 Scope of the Project	16
<b>3 Obligations of the Authority</b>	<b>17</b>
3.1 Obligations of the Authority	17
3.2 Maintenance obligations prior to the Appointed Date	18
3.3 Environmental Clearances	18
3.4 Deemed Termination upon delay	19
<b>4 Obligations of the Contractor</b>	<b>20</b>
4.1 Obligations of the Contractor	20
4.2 Obligations relating to sub-contracts and any other agreements	22
4.3 Employment of foreign nationals	23
4.4 Contractor's personnel	23
4.5 Advertisement on Project Highway	23
4.6 Contractor's care of the Works	23
4.7 Electricity, water and other services	24
4.8 Unforeseeable difficulties	24
4.9 Co-ordination of the Works	24
4.10 Environmental Measures	24
4.11 Site Data	25
4.12 Sufficiency of Contract Price	25
4.13 Clearance of the Site	25
4.14 Obligations relating to Local Content	25
<b>5 Representations and Warranties</b>	<b>27</b>
5.1 Representations and warranties of the Contractor	27
5.2 Representations and warranties of the Authority	30
5.3 Disclosure	31

6	<b>Disclaimer</b>	<b>32</b>
6.1	Disclaimer	32
<b>Part III</b>		<b>33</b>
<b>Construction and Maintenance</b>		<b>33</b>
7	<b>Performance Security</b>	<b>34</b>
7.1	<b>Performance Security</b>	<b>34</b>
7.2	Extension of Performance Security and Additional Performance	35
7.3	Appropriation of Performance Security	35
7.4	Release of Performance Security	36
7.5	Retention Money	36
8	<b>Right of Way</b>	<b>37</b>
8.1	The Site	37
8.2	Procurement of the Site	37
8.3	Damages for delay in handing over the Site	38
8.4	Site to be free from Encumbrances	40
8.5	Protection of Site from encroachments	40
8.6	Special/ temporary Right of Way	40
8.7	Access to the Authority and the Authority's Engineer	41
8.8	Geological and archaeological finds	41
9	<b>Utilities and Trees</b>	<b>42</b>
9.1	Existing utilities and roads	42
9.2	Shifting of obstructing utilities	42
9.3	New utilities	42
9.4	Felling of trees	43
9.5	Dismantling of structures	43
9.6	Development Period	43
10	<b>Design and Construction of the Project Highway</b>	<b>45</b>
10.1	Obligations prior to commencement of Works	45
10.2	Design and Drawings	46
10.3	Construction of the Project Highway	49
10.4	Maintenance during Construction Period	50
10.5	Extension of time for completion	50
10.6	Incomplete Works	52
10.7	Maintenance Manual	52
10.8	As-Built Records	52
10.9	Contractor's Use of Authority's Documents	52
11	<b>Quality Assurance, Monitoring and Supervision</b>	<b>54</b>
11.1	Quality of Materials and workmanship	54
11.2	Quality control system	54
11.3	Methodology	54

11.4	Inspection and technical audit by the Authority	54
11.5	External technical audit	55
11.6	Inspection of construction records	55
11.7	Monthly progress reports	55
11.8	Inspection	56
11.9	Samples	57
11.10	Tests	57
11.11	Examination of work before covering up	57
11.12	Rejection	57
11.13	Remedial work	58
11.14	Delays during construction	58
11.15	Quality control records and Documents	58
11.16	Video recording	59
11.17	Suspension of unsafe Construction Works	59
11.18	Staff and Labour	59
<b>12</b>	<b>Completion Certificate</b>	<b>63</b>
12.1	Tests on Completion	63
12.2	Completion Certificate	63
12.3	Rescheduling of Tests	64
<b>13</b>	<b>Change of Scope</b>	<b>65</b>
13.1	Change of Scope	65
13.2	Procedure for Change of Scope	65
13.3	Payment for Change of Scope	67
13.4	Restrictions on Change of Scope	67
13.5	Power of the Authority to undertake Works	67
<b>14</b>	<b>Maintenance</b>	<b>69</b>
14.1	Maintenance obligations of the Contractor	69
14.2	Maintenance Requirements	70
14.3	Maintenance Programme	70
14.4	Safety, vehicle breakdowns and accidents	70
14.5	Lane closure	71
14.6	Reduction of payment for non-performance of Maintenance	71
14.7	Authority's right to take remedial measures	71
14.8	Restoration of loss or damage to Project Highway	72
14.9	Overriding powers of the Authority	72
14.10	Taking over Certificate	73
<b>15</b>	<b>Supervision and Monitoring during Maintenance</b>	<b>74</b>
15.1	Inspection by the Contractor	74

15.2	Inspection and payments	74
15.3	Tests	74
15.4	Reports of unusual occurrence	75
<b>16</b>	<b>Traffic Regulation</b>	<b>76</b>
16.1	Traffic regulation by the Contractor	76
<b>17</b>	<b>Defects Liability</b>	<b>77</b>
17.1	Defects Liability Period	77
17.2	Remedying Defects	77
17.3	Cost of remedying Defects	77
17.4	Contractor's failure to rectify Defects	78
17.5	Extension of Defects Liability Period	78
<b>18</b>	<b>Authority's Engineer</b>	<b>79</b>
18.1	Appointment of the Authority's Engineer	79
18.2	Duties and authority of the Authority's Engineer	79
18.3	Delegation by the Authority's Engineer	80
18.4	Instructions of the Authority's Engineer	80
18.5	Determination by the Authority's Engineer	81
18.6	Remuneration of the Authority's Engineer	81
18.7	Termination of the Authority's Engineer	81
<b>Part IV</b>		<b>82</b>
<b>Financial Covenants</b>		<b>82</b>
<b>19</b>	<b>Payments</b>	<b>83</b>
19.1	Contract Price	83
19.2	Advance Payment	83
19.3	Procedure for estimating the payment for the Works	85
19.4	Stage Payment Statement for Works	85
19.5	Stage Payment for Works	86
19.6	Monthly Maintenance Statement of the Project Highway	86
19.7	Payment for Maintenance of the Project Highway	86
19.8	Payment of Damages	87
19.9	Time of payment and interest	87
19.10	Price adjustment for the Works	89
19.11	Restrictions on price adjustment	90
19.12	Price adjustment for Maintenance of Project Highway	91
19.13	Final Payment Statement	91
19.14	Discharge	92

19.15	Final Payment Certificate	92
19.16	Final payment statement for Maintenance	92
19.17	Change in law	93
19.18	Correction of Interim Payment Certificates	93
19.19	Authority's claims	93
19.20	Bonus for early completion	93
<b>20</b>	<b>Insurance</b>	<b>94</b>
20.1	Insurance for Works and Maintenance	94
20.2	Notice to the Authority	95
20.3	Evidence of Insurance Cover	95
20.4	Remedy for failure to insure	95
20.5	Waiver of subrogation	95
20.6	Contractor's waiver	96
20.7	Cross liabilities	96
20.8	Accident or injury to workmen	96
20.9	Insurance against accident to workmen	96
20.10	Application of insurance proceeds	96
20.11	Compliance with policy conditions	97
20.12	General Requirements of Insurance Policies	97
<b>Part V</b>		<b>99</b>
<b>Force Majeure and Termination</b>		<b>99</b>
21	Force Majeure	100
21.1	Force Majeure	100
21.2	Non-Political Event	100
21.3	Indirect Political Event	100
21.4	Political Event	101
21.5	Duty to report Force Majeure Event	101
21.6	Effect of Force Majeure Event on the Agreement	102
21.7	Termination Notice for Force Majeure Event	103
21.8	Termination Payment for Force Majeure Event	103
21.9	Dispute resolution	103
21.10	Excuse from performance of obligations	103
<b>22</b>	<b>Suspension of Contractor's Rights</b>	<b>105</b>
22.1	Suspension upon Contractor Default	105
22.2	Authority to act on behalf of Contractor	105
22.3	Revocation of Suspension	105
22.4	Termination	105
<b>23</b>	<b>Termination</b>	<b>107</b>
23.1	Termination for Contractor Default	107
23.2	Termination for Authority Default	109
23.3	Termination for Authority's convenience	110

23.4	Requirements after Termination	110
23.5	Valuation of Unpaid Works	111
23.6	Termination Payment	111
23.7	Other rights and obligations of the Parties	112
23.8	Survival of rights	112
23.9	Foreclosure with mutual consent	112
<b>Part VI</b>		<b>114</b>
<b>Other Provisions</b>		<b>114</b>
<b>24</b>	<b>Assignment and Charges</b>	<b>115</b>
24.1	Restrictions on assignment and charges	115
24.2	Hypothecation of Materials or Plant	115
<b>25</b>	<b>Liability and Indemnity</b>	<b>116</b>
25.1	General indemnity	116
25.2	Indemnity by the Contractor	116
25.3	Notice and contest of claims	117
25.4	Defence of claims	117
25.5	Survival on Termination	118
<b>26</b>	<b>Dispute Resolution</b>	<b>119</b>
26.1	Dispute Resolution	119
26.2	Conciliation	119
26.3	Arbitration	119
26.4	Adjudication by Regulatory Authority, Tribunal or Commission	120
<b>27</b>	<b>Miscellaneous</b>	<b>121</b>
27.1	Governing law and jurisdiction	121
27.2	Waiver of immunity	121
27.3	Delayed payments	121
27.4	Waiver	121
27.5	Liability for review of Documents and Drawings	122
27.6	Exclusion of implied warranties etc.	122
27.7	Survival	122
27.8	Entire Agreement	122
27.9	Severability	123
27.10	No partnership	123
27.11	Third parties	123
27.12	Successors and assigns	123
27.13	Notices	123
27.14	Language	124
27.15	Counterparts	124
27.16	Confidentiality	124
27.17	Copyright and Intellectual Property rights	124
27.18	Limitation of Liability	125

27.19	Care and Supply of Documents	125
27.20	Authority's Use of Contractor's Documents.	125
27.21	Contractor's Use of Authority's Documents	126
27.22	Access to the Site by Others	126
27.23	Term	126
27.24	Amendment	126
27.25	Representation and Bribes	126
27.26	No Agency	127
<b>Schedules</b>		<b>128</b>
<b>Schedule-A</b>		<b>129</b>
<b>Site of the Project</b>		<b>129</b>
1	The Site	129
Annex-I :	Site	130
Annex-II :	Dates for providing Right of Way of Construction Zone	137
Annex-III :	Alignment Plans	167
Annex-IV :	Environment Clearances	168
<b>Schedule - B</b>		<b>169</b>
<b>Development of the Project Highway</b>		<b>169</b>
1.	Development of the Project Highway	169
2.	[Rehabilitation and augmentation]	169
3.	Specifications and Standards	169
Annex-I :	Description of [Two-Laning]	170
<b>Schedule – C</b>		<b>215</b>
<b>Project Facilities</b>		<b>215</b>
1.	Project Facilities	216
2.	Description of Project Facilities	216
<b>Schedule – D</b>		<b>235</b>
<b>Specifications and Standards</b>		<b>235</b>
1.	Construction	235
2.	Design Standards	235
Annex-I :	Specifications and Standards for Construction	236

<b>Schedule – E</b>	<b>240</b>
<b>Maintenance Requirements</b>	<b>240</b>
1. Maintenance Requirements	240
2. Repair/rectification of Defects and deficiencies	240
3. Other Defects and deficiencies	240
4. Extension of time limit	240
5. Emergency repairs/restoration	240
6. Daily inspection by the Contractor	240
7. Pre-monsoon inspection / Post-monsoon inspection	241
8. Repairs on account of natural calamities	241
Annex-I : Repair/rectification of Defects and deficiencies	242
<b>Schedule – F</b>	<b>269</b>
<b>Applicable Permits</b>	<b>269</b>
1. Applicable Permits	269
<b>Schedule – G</b>	<b>270</b>
Annex-I : Form of Bank Guarantee	270
Annex-II : Form for Guarantee for Advance Payment	273
<b>Schedule – H</b>	<b>276</b>
Contract Price Weightages	276
<b>Schedule – I</b>	<b>303</b>
<b>Drawings</b>	<b>303</b>
1. Drawings	303
2. Additional Drawings	303
<b>Schedule – J</b>	<b>305</b>
<b>Project Completion Schedule</b>	<b>305</b>
1. Project Completion Schedule	305
2. Project Milestone-I	305
3. Project Milestone-II	305
4. Project Milestone-III	305
5. Scheduled Completion Date	305
6. Extension of time	305
<b>Schedule – K</b>	<b>306</b>
<b>Tests on Completion</b>	<b>306</b>

1.	Schedule for Tests	306
2.	Tests	306
3.	Agency for conducting Tests	307
4.	Completion Certificate	307
5.	Authority Engineer will carry out test	307
<b>Schedule – L</b>		<b>308</b>
	Completion Certificate	308
<b>Schedule – M</b>		<b>309</b>
	Payment Reduction for Non-Compliance	309
1.	Payment reduction for non-compliance with the Maintenance Requirements	309
2.	Percentage reductions in lump sum payments on monthly basis	309
<b>Schedule – N</b>		<b>311</b>
<b>Selection of Authority’s Engineer</b>		<b>311</b>
1.	Selection of Authority’s Engineer	311
2.	Terms of Reference	311
3.	Appointment of Government entity as Authority’s Engineer	311
	Annex-I : Terms of Reference for Authority’s Engineer	312
<b>Schedule – O</b>		<b>318</b>
<b>Forms of Payment Statements</b>		<b>318</b>
1.	Stage Payment Statement for Works	318
2.	Monthly Maintenance Payment Statement	318
3.	Contractor’s claim for Damages	318
<b>Schedule – P</b>		<b>319</b>
<b>Insurance</b>		<b>319</b>
1.	Insurance during Construction Period	319
2.	Insurance for Contractor's Defects Liability	319
3.	Insurance against injury to persons and damage to property	319
4.	Insurance to be in joint names	320
<b>Schedule-Q</b>		<b>321</b>
<b>Tests on Completion of Maintenance Period</b>		<b>321</b>
1.	Riding Quality test:	321
2.	Visual and physical test:	321

**Schedule-R**

**322**

**Taking Over Certificate**

**322**

Part I  
Preliminary

## **Engineering, Procurement and Construction Agreement**

THIS AGREEMENT<sup>1</sup> is entered into on this the ..... day of ....., 20.....

Between

**The President of India through the Ministry of Road Transport & Highways, Government of India represented by:**

**Chief Engineer Level-1, National Highways, PWD Uttarakhand, Dehradun** (hereinafter referred to as the “Authority” which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns) of One Part;

And

<insert name of party>,<sup>2</sup> the selected bidder<sup>3</sup> having its registered office at <insert registered office address of the party>, (hereinafter referred to as the “Contractor” which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assigns) of the Other Part.

Whereas:

- A. **The Ministry of Road Transport & Highways, Government of India entrusted Construction of 4 laning of green field alignment of Rishikesh Bypass from Design Chainage km 529+750 (Near Teenpani Flyover on NH-7) to Design Chainage km 542+420 (Near Kharasrote Bridge), passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km). on EPC mode.**
- B. The Authority has resolved to **Construction of 4 laning of Rishikesh Bypass from Design Chainage km 529+750 (Near Teenpani Flyover on NH-7) to Design Chainage km 542+420 (Near Kharasrote Bridge), passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km). on EPC mode** in accordance with the terms and conditions to be set forth in an agreement to be entered into.
- C. The Authority accordingly invited the proposals (the “Request for Proposals” or “RFP”) from the eligible bidders as per the technical and commercial terms and conditions prescribed in the RFP for undertaking the Project.
- D. After evaluation of the bids received, the Authority accepted the bid of the selected bidder and issued its Letter of Acceptance No. <insert details> dated <insert date> (hereinafter called the “LOA”) to the selected bidder for **Construction of 4 laning of Rishikesh Bypass from Design Chainage km 529+750 (Near Teenpani Flyover on NH-7) to Design Chainage km 542+420 (Near Kharasrote Bridge), passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km). on EPC mode** at the Contract Price specified hereinafter, requiring the selected bidder to inter alia:
- (i) to give his consent to enter into this Agreement and the enforceability of the provisions thereof, within 10 (ten) days of the date of issue of LOA;

(ii) submit Performance Security and Additional Performance Security (if any) as per RFP requirements, and

(iii) execute this Agreement within 30 (thirty) days of the date of issue of LOA.

E. The Contractor has fulfilled the requirements specified in Recital (D) above;

NOW, THEREFORE, in consideration of the foregoing and the respective covenants set forth in this Agreement, the sufficiency and adequacy of which is hereby acknowledged, the Authority hereby covenants to pay the Contractor, in consideration of the obligations specified herein, the Contract Price or such other sum as may become payable under the provisions of the Agreement at the times and in the manner specified by the Agreement and intending to be legally bound hereby, the Parties agree as follow.

# Article 1

## Definitions and Interpretations

### 1.1 Definitions

(i) The words and expressions beginning with capital letters and defined in this Agreement shall, unless the context otherwise requires, have the meaning ascribed thereto herein, and the words and expressions defined in the Schedules and used therein shall have the meaning ascribed thereto in the Schedules.

(ii) In this Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively assigned to them:

**“Accounting Year”** means the financial year commencing from the first day of April of any calendar year and ending on the thirty-first day of March of the next calendar year;

**“Advance Payment”** shall have the meaning set forth in Clause 19.2;

**“Affected Party”** shall have the meaning set forth in Clause 21.1;

**“Affiliate”** means, in relation to either Party {and/or Members}, a person who controls, is controlled by, or is under the common control with such Party {or Member} (as used in this definition, the expression “control” means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person, whether by operation of law or by contract or otherwise);

**“Agreement”** means this Agreement, its Recitals, the Schedules hereto and any amendments thereto, or any supplementary agreement made in accordance with the provisions contained in this Agreement;

**“Applicable Laws”** means all laws, brought into force and effect by the GOI or the State Government including rules, regulations and notifications made thereunder, and judgements, decrees, injunctions, writs and orders of any court of record, applicable to this Agreement and the exercise, performance and discharge of the respective rights and obligations of the Parties hereunder, as may be in force and effect during the subsistence of this Agreement;

**“Applicable Permits”** means all clearances, licences, permits, authorisations, no objection certificates, consents, approvals and exemptions required to be obtained or maintained under Applicable Laws in connection with the construction, operation and maintenance of the Project Highway during the subsistence of this Agreement;

**“Appointed Date”** means the date declared by the Authority as the project commencement date with the consent of the contractor, as per the process prescribed in Article 3 and 8 of this Agreement;

**“Arbitration Act”** means the Arbitration and Conciliation Act, 1996, with all its subsequent amendments;

**“Authority”** shall have the meaning attributed thereto in the array of Parties hereinabove as set forth in the Recitals;

**“Authority Default”** shall have the meaning set forth in Clause 23.2;

**“Authority’s Engineer”** shall have the meaning set forth in Clause 18.1;

**“Authority Representative”** means such person or persons as may be authorised in writing by the Authority to act on its behalf under this Agreement and shall include any person or persons having authority to exercise any rights or perform and fulfil any obligations of the Authority under this Agreement;

**“Bank”** means a bank incorporated in India and recognized by the Reserve Bank of India

**“Base Rate”** means the floor rate of interest announced by the State Bank of India for all its lending operations;

**“Base Date”** means the last date of the calendar month, which precedes the Bid Due Date by at least 28 (twenty-eight) days;

**“Bid”** means the documents in their entirety comprised in the bid submitted by the [selected bidder/ Joint venture] in response to the Request for Proposal in accordance with the provisions thereof;

**“Bid Security”** means the bid security provided by the Contractor to the Authority in accordance with the Request for Proposal, and which is to remain in force until substituted by the Performance Security;

**“Change in Law”** means the occurrence of any of the following after the Base Date:

- (a) the enactment of any new Indian law;
- (b) the repeal, modification or re-enactment of any existing Indian law;
- (c) the commencement of any Indian law which has not come into effect until the Base Date; or
- (d) a change in the interpretation or application of any Indian law by a judgement of a court of record which has become final, conclusive and binding, as compared to such interpretation or application by a court of record prior to the Base Date.

**“Change of Scope”** shall have the meaning set forth in Article 13;

**“Change of Scope Notice”** shall have the meaning set forth in Clause 13.2 (i);

**“Change of Scope Request”** shall have the meaning set forth in Clause 13.2(ii);

**“Change of Scope Order”** shall have the meaning set forth in Clause 13.2 (iv);

**“Completion Certificate”** shall have the meaning set forth in Clause 12.2;

**“Construction”** shall have the meaning set forth in Clause 1.2 (f);

**“Construction Period”** means the period commencing from the Appointed Date and ending on the date of the Completion Certificate;

**“Construction Zone”** shall have the meaning set forth in Clause 8.3 (i);

**“Contract Price”** means the amount specified in Clause 19.1 (i);

**“Contractor”** shall have the meaning attributed thereto in the array of Parties hereinabove as set forth in the Recitals;

**“Contractor Default”** shall have the meaning set forth in Clause 23.1;

**“Cure Period”** means the period specified in this Agreement for curing any breach or default of any provision of this Agreement by the Party responsible for such breach or default and shall:

- (a) commence from the date on which a notice is delivered by one Party to the other Party asking the latter to cure the breach or default specified in such notice;
- (b) not relieve any Party from liability to pay Damages or compensation under the provisions of this Agreement; and
- (c) not in any way be extended by any period of Suspension under this Agreement; provided that if the cure of any breach default by the Contractor requires any reasonable action by the Contractor that must be approved by the Authority or the Authority’s Engineer hereunder, the applicable Cure Period shall be extended by the period taken by the Authority or the Authority’s Engineer to accord their approval;

**“Damages”** shall have the meaning set forth in paragraph (w) of Clause 1.2;

**“Defect”** means any defect or deficiency in Construction of the Works or any part thereof, which does not conform with the Specifications and Standards, and in the case of Maintenance, means any Defect or deficiency which is specified in Schedule-E;

**“Defects Liability Period”** shall have the meaning set forth in Clause 17.1;

**“Dispute”** shall have the meaning set forth in Clause 26.1;

**“Dispute Resolution Procedure”** means the procedure for resolution of Disputes set forth in Article 26;

**“Drawings”** means all of the drawings, calculations and documents pertaining to the Project Highway as set forth in Schedule-I, and shall include ‘as built’ drawings of the Project Highway;

**“Document” or “Documentation”** means documentation in printed or written form, or in tapes, discs, drawings, computer programmes, writings, reports, photographs, films, cassettes, or expressed in any other written, electronic, audio or visual form;

**“Emergency”** means a condition or situation that is likely to endanger the safety or security of the individuals on or about the Project Highway, including Users thereof, or which poses an immediate threat of material damage to any of the Project Assets;

**“Encumbrances”** means, in relation to the Project Highway, any encumbrances such as mortgage, charge, pledge, lien, hypothecation, security interest, assignment, privilege or priority of any kind having the effect of security or other such obligations, and shall include any designation of loss to payees or beneficiaries or any similar arrangement under any insurance policy pertaining to the Project Highway, where applicable herein but excluding utilities referred to in Clause 9.1;

**“EPC”** means engineering, procurement and construction;

**“Final Payment Certificate”** shall have the meaning set forth in Clause 19.15;

**“Final Payment Statement”** shall have the meaning set forth in Clause 19.13;

**“Force Majeure” or “Force Majeure Event”** shall have the meaning ascribed to it in Clause 21.1;

**“GAD” or “General Arrangement Drawings”** shall have the meaning set forth in Clause 3.1 (iii) (b);

**“GOI” or “Government”** means the Government of India;

**“Good Industry Practice”** means the practices, methods, techniques, designs, standards, skills, diligence, efficiency, reliability and prudence which are generally and reasonably expected from a reasonably skilled and experienced contractor engaged in the same type of undertaking as envisaged under this Agreement and which would be expected to result in the performance of its obligations by the Contractor in accordance with this Agreement, Applicable Laws and Applicable Permits in reliable, safe, economical and efficient manner;

**“Government Instrumentality”** means any department, division or sub- division of the Government or the State Government and includes any commission, board, authority, agency or municipal and other local authority or statutory body including panchayat under the control of the Government or the State Government, as the case may be, and having jurisdiction over all or any part of the Project Highway or the performance of all or any of the services or obligations of the Contractor under or pursuant to this Agreement;

**“Handover Memorandum”** shall have the meaning set forth in Clause 8.2;

**“IRC”** means the Indian Roads Congress;

**“Indemnified Party”** means the Party entitled to the benefit of an indemnity pursuant to Article 25;

**“Indemnifying Party”** means the Party obligated to indemnify the other Party pursuant to Article 25;

**“Indirect Political Event”** shall have the meaning set forth in Clause 21.3;

**“Insurance Cover”** means the aggregate of the maximum sums insured under the insurance taken out by the Contractor pursuant to Article 20, and includes all insurances required to be taken out by the Contractor under Clauses 20.1 and 20.9 but not actually taken, and when used in the context of any act or event, it shall mean the aggregate of the maximum sums insured and payable or deemed to be insured and payable in relation to such act or event;

**“Intellectual Property”** means all patents, trademarks, service marks, logos, get-up, trade names, internet domain names, rights in designs, blue prints, programmes and manuals, drawings, copyright (including rights in computer software), database rights, semi-conductor, topography rights, utility models, rights in know-how and other intellectual property rights, in each case whether registered or unregistered and including applications for registration, and all rights or forms of protection having equivalent or similar effect anywhere in the world;

**“Interim Payment Certificate” or “IPC”** means the interim payment certificate issued by the Authority’s Engineer for payment to the Contractor in respect of Contractor’s claims for payment raised in accordance with the provisions of this Agreement;

**“Joint Venture”** means the group of entities which have come together for implementation of this Project;

**“Lead Member”** shall, in the case of a joint venture, mean the member of such joint venture who shall have the authority to bind the contractor and each member of the Joint venture; and shall be deemed to be the Contractor for the purposes of this Agreement; the Lead Member shall itself undertake and perform at least 51% (fifty one per cent) of the total length of the Project Highway;

**“LOA” or “Letter of Acceptance”** means the letter of acceptance issued by the Authority as referred to in Recital (D);

**“Maintenance”** means the maintenance of the Project Highway as set forth in Article 14 for the period specified therein;

**“Maintenance Inspection Report”** shall have the meaning set forth in Clause 15.2;

**“Maintenance Manual”** shall have the meaning ascribed to it in Clause 10.7; **“Maintenance Programme”** shall have the meaning set forth in Clause 14.3; **“Maintenance Period”** shall have the meaning set forth in Clause 14.1;

**“Maintenance Requirements”** shall have the meaning set forth in Clause 14.2;

**“Major Bridge”** means a bridge having a total length of more than 60 (sixty) metres between the inner faces of the dirt walls as specified in IRC:5;

**“Manual”** shall mean the Manual of Standards and Specifications for Project Highways;

**“Material Adverse Effect”** means a material adverse effect of any act or event on the ability of either Party to perform any of its obligations under and in accordance with the provisions of this Agreement and which act or event causes a material financial burden or loss to either Party;

**“Materials”** comprise of all the supplies used by the Contractor used in the Works or for the maintenance of the Project Highway;

**“Monthly Maintenance”** Statement shall have the meaning set forth in Clause 19.6;

**“MORTH”** means the Ministry of Road Transport and Highways or any substitute thereof dealing with Highways;

**“Non-Political Event”** shall have the meaning set forth in Clause 21.2;

**“Parties”** means the parties to this Agreement collectively and “Party” shall mean any of the parties to this Agreement individually;

**“Performance Security” and “Additional Performance Security”** shall have the meaning set forth in Clause 7.1;

**“Plant”** means the apparatus and machinery intended to form or forming part of the works of the Works;

**“Political Event”** shall have the meaning set forth in Clause 21.4;

**“Programme”** shall have the meaning set forth in Clause 10.1(iii);

**“Project”** means the construction and maintenance of the Project Highway in accordance with the provisions of this Agreement, and includes all works, services and equipment relating to or in respect of the Scope of the Project;

**“Project Assets”** means all physical and other assets relating to (a) tangible assets such as civil works and equipment including foundations, embankments, pavements, road surface, interchanges, bridges, culverts, road over-bridges, drainage works, traffic signals, sign boards, kilometre-stones, [toll plaza(s)], electrical systems, communication systems, rest areas, relief centres, maintenance depots and administrative offices; and (b) Project Facilities situated on the Site;

**“Project Completion Date”** means the date on which the Completion Certificate is issued;

**“Project Completion Schedule”** means the progressive Project Milestones set forth in Schedule-J for completion of the Project Highway on or before the Scheduled Completion Date;

**“Project Facilities”** means all the amenities and facilities situated on the Site, as described in Schedule-C;

**“Project Highway”** means the Site comprising the existing road {, proposed bypasses and tunnels} forming part of **Construction of 4 laning of Rishikesh Bypass from Design Chainage km 529+750 (Near Teenpani Flyover on NH-7) to Design Chainage km 542+420 (Near Kharasrote Bridge), passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km). on EPC mode** all Project Assets, and its subsequent development and augmentation in accordance with this Agreement;

**“Project Milestone”** means the project milestone set forth in Schedule-J;

**“Proof Consultant”** shall have the meaning set forth in Clause 10.2;

**“Quality Assurance Plan” or “QAP”** shall have the meaning set forth in Clause 11.2;

**“Re.”, “Rs.” or “Rupees” or “Indian Rupees” or “INR”** means the lawful currency of the Republic of India;

**“Request for Proposals” or “RFP”** shall have the meaning set forth in Recital ‘C’;

**“Retention Money”** shall have the meaning set forth in Clause 7.5;

**“Right of Way”** means and refers to the total land required and acquired for the project, both in its width and length, together with all way leaves, easements, unrestricted access and other rights of way, howsoever described, necessary for construction and maintenance of the Project Highway in accordance with this Agreement;

**“Safety Consultant”** shall have the meaning set forth in Clause 10.1;

**“Scheduled Completion Date”** shall be the date set forth in Clause 10.3;

**“Scheduled Construction Period”** means the period commencing from the Appointed Date and ending on Scheduled Completion Date;

**“Scope of the Project”** shall have the meaning set forth in Clause 2.1;

**“Section”** means a part of the Project Highway;

**“Site”** shall have the meaning set forth in Clause 8.1;

**“Specifications and Standards”** means the specifications and standards relating to the quality, quantity, capacity and other requirements for the Project Highway, as set forth in Schedule-D, and any modifications thereof, or additions thereto, as included in the design and engineering for the Project Highway submitted by the Contractor to, and expressly approved by, the Authority;

**“Stage Payment Statement”** shall have the meaning set forth in Clause 19.4;

**“Structures”** means an elevated road or a flyover, as the case may be;

**“Sub-contractor”** means any person or persons to whom a part of the Works or the Maintenance has been subcontracted by the Contractor and the permitted legal successors in title to such person, but not an assignee to such person;

**“Suspension”** shall have the meaning set forth in Article 22;

**“Taking Over Certificate”** shall have the meaning set forth in Clause 14.10;

**“Taxes”** means any Indian taxes including GST, excise duties, customs duties, value added tax, sales tax, local taxes, cess and any impost or surcharge of like nature (whether Central, State or local) on the goods, Materials, equipment and services incorporated in and forming part of the Project Highway charged, levied or imposed by any Government Instrumentality, but excluding any interest, penalties and other sums in relation thereto imposed on any account whatsoever. For the avoidance of doubt, Taxes shall not include taxes on corporate income;

**“Termination”** means the expiry or termination of this Agreement;

**“Termination Notice”** means the communication issued in accordance with this Agreement by one Party to the other Party terminating this Agreement;

**“Termination Payment”** means the amount payable by either Party to the other upon Termination in accordance with Article 23;

**“Terms of Reference” or “TOR”** shall have the meaning set forth in Clause 18.2;

**“Tests”** means the tests set forth in Schedule-K to determine the completion of Works in accordance with the provisions of this Agreement;

**“Time Extension”** shall have the meaning set forth in Clause 10.5;

**“User”** means a person who travels or intends to travel on the Project Highway or any part thereof in/on any vehicle;

**“Valuation of Unpaid works”** shall have the meaning set forth in Clause 23.5;

**“Works”** means all works including survey and investigation, design, engineering, procurement, construction, Plant, Materials, maintenance, temporary works and other things necessary to complete the Project Highway in accordance with this Agreement; and

**“WPI”** means the wholesale price index for various commodities as published by the Ministry of Commerce and Industry, GOI and shall include any index which substitutes the WPI, and any reference to WPI shall, unless the context otherwise requires, be construed as a reference to the WPI published for the period ending with the preceding month.

## **1.2 Interpretation**

**(i) In this Agreement, unless the context otherwise requires,**

- (a) references to any legislation or any provision thereof shall include amendment or re-enactment or consolidation of such legislation or any provision thereof so far as such amendment or re-enactment or consolidation applies or is capable of applying to any transaction entered into hereunder;
- (b) references to laws of India or Indian law or regulation having the force of law shall include the laws, acts, ordinances, rules, regulations, bye laws or notifications which have the force of law in the territory of India and as from time to time may be amended, modified, supplemented, extended or re-enacted;
- (c) references to a “person” and words denoting a natural person shall be construed as a reference to any individual, firm, company, corporation, society, trust, government, state or agency of a state or any association or partnership (whether or not having separate legal personality) of two or more of the above and shall include successors and assigns;
- (d) the table of contents, headings or sub-headings in this Agreement are for convenience of reference only and shall not be used in, and shall not affect, the construction or interpretation of this Agreement;
- (e) the words “include” and “including” are to be construed without limitation and shall be deemed to be followed by “without limitation” or “but not limited to” whether or not they are followed by such phrases;
- (f) references to “construction” or “building” include, unless the context otherwise requires, survey and investigation, design, developing, engineering, procurement, supply of plant, materials, equipment, labour, delivery, transportation, installation, processing, fabrication, testing, and commissioning of the Project Highway, including maintenance during the Construction Period, removing of defects, if any, and other activities incidental to the construction and “construct” or “build” shall be construed accordingly;
- (g) references to “development” include, unless the context otherwise requires, construction, renovation, refurbishing, augmentation, up-gradation and other activities incidental thereto during the Construction Period, and “develop” shall be construed accordingly;
- (h) any reference to any period of time shall mean a reference to that according to Indian standard time;
- (i) any reference to day shall mean a reference to a calendar day;
- (j) references to a “business day” shall be construed as a reference to a day (other than a Sunday) on which banks in Delhi are generally open for business;
- (k) any reference to month shall mean a reference to a calendar month as per the Gregorian calendar;
- (l) references to any date, period or Project Milestone shall mean and include such date, period or Project Milestone as may be extended pursuant to this Agreement;

- (m) any reference to any period commencing “from” a specified day or date and “till” or “until” a specified day or date shall include both such days or dates; provided that if the last day of any period computed under this Agreement is not a business day, then the period shall run until the end of the next business day;
- (n) the words importing singular shall include plural and vice versa;
- (o) references to any gender shall include the other and the neutral gender;
- (p) “lakh” means a hundred thousand (100,000) and “crore” means ten million (10,000,000);
- (q) “indebtedness” shall be construed so as to include any obligation (whether incurred as principal or surety) for the payment or repayment of money, whether present or future, actual or contingent;
- (r) references to the “winding-up”, “dissolution”, “insolvency”, or “reorganisation” of a company or corporation shall be construed so as to include any equivalent or analogous proceedings under the law of the jurisdiction in which such company or corporation is incorporated or any jurisdiction in which such company or corporation carries on business including the seeking of liquidation, winding-up, reorganisation, dissolution, arrangement, protection or relief of debtors;
- (s) save and except as otherwise provided in this Agreement, any reference, at any time, to any agreement, deed, instrument, licence or document of any description shall be construed as reference to that agreement, deed, instrument, licence or other document as amended, varied, supplemented, modified or suspended at the time of such reference; provided that this Clause shall not operate so as to increase liabilities or obligations of the Authority hereunder or pursuant hereto in any manner whatsoever;
- (t) any agreement, consent, approval, authorisation, notice, communication, information or report required under or pursuant to this Agreement from or by any Party or the Authority’s Engineer shall be valid and effective only if it is in writing under the hand of a duly authorised representative of such Party or the Authority’s Engineer, as the case may be, in this behalf and not otherwise;
- (u) the Schedules and Recitals to this Agreement form an integral part of this Agreement and will be in full force and effect as though they were expressly set out in the body of this Agreement;
- (v) references to Recitals, Articles, Clauses, Sub-clauses or Schedules in this Agreement shall, except where the context otherwise requires, mean references to Recitals, Articles, Clauses, Sub-clauses and Schedules of or to this Agreement, and references to a Paragraph shall, subject to any contrary indication, be construed as a reference to a Paragraph of this Agreement or of the Schedule in which such reference appears;
- (w) the damages payable by either Party to the other of them, as set forth in this Agreement, whether on per diem basis or otherwise, are mutually agreed genuine pre-estimated loss and damage likely to be suffered and incurred by the Party entitled to

receive the same and are not by way of penalty or liquidated damages (the “Damages”); and

- (x) time shall be of the essence in the performance of the Parties’ respective obligations. If any time period specified herein is extended for the reasons specified in the Agreement, such extended time shall also be of the essence.
- (ii) Unless expressly provided otherwise in this Agreement, any Documentation required to be provided or furnished by the Contractor to the Authority shall be provided free of cost and in three copies, and if the Authority is required to return any such Documentation with its comments and/or approval, it shall be entitled to retain two copies thereof.
- (iii) The rule of construction, if any, that a contract should be interpreted against the parties responsible for the drafting and preparation thereof, shall not apply.
- (iv) Any word or expression used in this Agreement shall, unless otherwise defined or construed in this Agreement, bear its ordinary English meaning and, for these purposes, the General Clauses Act, 1897 shall not apply.

### **1.3 Measurements and arithmetic conventions**

All measurements and calculations shall be in the metric system and calculations done to 2 (two) decimal places, with the third digit of 5 (five) or above being rounded up and below 5 (five) being rounded down.

### **1.4 Priority of agreements and errors/discrepancies**

- (i) This Agreement, and all other agreements and documents forming part of or referred to in this Agreement are to be taken as mutually explanatory and, unless otherwise expressly provided elsewhere in this Agreement, the priority of this Agreement and other documents and agreements forming part hereof or referred to herein shall, in the event of any conflict between them, be in the following order:
  - (a) this Agreement; and
  - (b) all other agreements and documents forming part hereof or referred to herein; i.e. this Agreement at (a) above shall prevail over the agreements and documents at (b).
- (ii) Subject to the provisions of Clause 1.4 (i), in case of ambiguities or discrepancies within this Agreement, the following shall apply:
  - (a) between two or more Clauses of this Agreement, the provisions of a specific Clause relevant to the issue under consideration shall prevail over those in other Clauses;
  - (b) between the Clauses of this Agreement and the Schedules, the Clauses shall prevail and between Schedules and Annexes, the Schedules shall prevail;
  - (c) between any two Schedules, the Schedule relevant to the issue shall prevail;
  - (d) between the written description on the Drawings and the Specifications and Standards, the latter shall prevail;

- (e) between the dimension scaled from the Drawing and its specific written dimension, the latter shall prevail; and
- (f) between any value written in numerals and that in words, the latter shall prevail.

### **1.5 Joint and several liability**

- (i) If the Contractor has formed a Joint Venture of two or more persons for implementing the Project:
  - (a) these persons shall, without prejudice to the provisions of this Agreement or any other agreement, be deemed to be jointly and severally liable to the Authority for the performance of the Agreement; and
  - (b) the Contractor shall ensure that no change in the composition of the Joint Venture is effected without the prior consent of the Authority.
- (ii) Without prejudice to the joint and several liability of all the members of the Joint Venture, the Lead Member shall represent all the members of the Joint Venture and shall always be liable and responsible for discharging the functions and obligations of the Contractor. The Contractor shall ensure that each member of the Joint Venture shall be bound by any decision, communication, notice, action or inaction of the Lead Member on any matter related to this Agreement and the Authority shall be entitled to rely upon any such action, decision or communication of the Lead Member. The Authority shall have the right to release payments solely to the Lead Member and shall not in any manner be responsible or be held liable for the inter se allocation of payments among members of the Joint venture.<sup>6</sup>

<sup>6</sup>This Clause 1.5 may be omitted if the Contractor is not a Joint venture. Even if the Contractor is a Joint venture, the Authority may, at its discretion, delete this provision.

Part II  
Scope of Project

## **Article 2**

### **Scope of the Project**

#### **2.1 Scope of the Project**

Under this Agreement, the scope of the Project (the "Scope of the Project") shall mean and include:

- (a) construction of the Project Highway on the Site set forth in Schedule- A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D;
- (b) maintenance of the Project Highway in accordance with the provisions of this Agreement and in conformity with the requirements set forth in Schedule-E; and
- (c) performance and fulfilment of all other obligations of the Contractor in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Contractor under this Agreement.

## **Article 3**

### **Obligations of the Authority**

#### **3.1 Obligations of the Authority**

- (i) The Authority shall, at its own cost and expense, undertake, comply with and perform all its obligations set out in this Agreement or arising hereunder.
- (ii) The Authority shall be responsible for the correctness of the Scope of the Project, Project Facilities, Specifications and Standards and the criteria for testing of the completed Works.
- (iii) The Authority shall, upon submission of the Performance Security as per the RFP by the Contractor, shall provide to the Contractor:
  - (a) No less than 90% (ninety per cent) of the required Right of Way of the Construction Zone of total length of the Project Highway within a period of 30 (thirty) days from the date of this Agreement, which shall be in contiguous stretches of length not less than 5 (five) kilometre.
  - (b) approval of the general arrangement drawings (the "GAD") from railway authorities to enable the Contractor to construct road over- bridges/ under-bridges at level crossings on the Project Highway in accordance with the Specifications and Standards, and subject to the terms and conditions specified in such approval, within a period of 60 (sixty) days from the Appointed Date, and reimbursement of all the costs and expenses paid by the Contractor to the railway authorities for and in respect of the road over- bridges/ under bridges; and<sup>7</sup>
  - (c) Environmental clearances for the project are not required.
- (iv) Delay in providing the Right of Way or approval of GAD by railway authorities, as the case may be, in accordance with the provisions of Clause 3.1 (iii) shall entitle the Contractor to Damages in a sum calculated in accordance with the provisions of Clause 8.3 of this Agreement and Time Extension in accordance with the provisions of Clause 10.5 of this Agreement. For the avoidance of doubt, the Parties agree that the Damages for delay in approval of GAD by the railway authorities for a particular road over-bridge/ under-bridge shall be deemed to be equal to the Damages payable under the provisions of Clause 8.3 for delay in providing Right of Way for a length of 2 (two) kilometre for each such road over-bridge/ under-bridge.
- (v) Notwithstanding anything to the contrary contained in this Agreement, the Parties expressly agree that the aggregate Damages payable under Clauses 3.1 (iv), 8.3 and 9.5 shall not exceed 1% (one per cent) of the Contract Price. For the avoidance of doubt, the Damages payable by the Authority under the aforesaid Clauses shall not be additive if they arise concurrently from more than one cause but relate to the same part of the Project Highway.

Both the parties agree that payment of such Damages shall be full and final settlement of all claims of the Contractor and such compensation shall be the sole remedy against delays of the Authority and both parties further agree that the payment of Damages

shall be the final cure for the Contractor against delays of the Authority, without recourse to any other payments.

- (vi) The Authority agrees to provide support to the Contractor and undertakes to observe, comply with and perform, subject to and in accordance with the provisions of this Agreement and the Applicable Laws, the following:
- (a) upon written request from the Contractor, and subject to the Contractor complying with Applicable Laws, provide reasonable support to the Contractor in procuring Applicable Permits required from any Government Instrumentality for implementation of the Project;
  - (b) upon written request from the Contractor, provide reasonable assistance to the Contractor in obtaining access to all necessary infrastructure facilities and utilities, including water and electricity at rates and on terms no less favourable than those generally available to commercial customers receiving substantially equivalent services;
  - (c) procure that no barriers that would have a material adverse effect on the works are erected or placed on or about the Project Highway by any Government Instrumentality or persons claiming through or under it, except for reasons of Emergency, national security, law and order or collection of inter-state taxes;
  - (d) not do or omit to do any act, deed or thing which may in any manner violate any provisions of this Agreement;
  - (e) support, cooperate with and facilitate the Contractor in the implementation of the Project in accordance with the provisions of this Agreement; and
  - (f) upon written request from the Contractor and subject to the provisions of Clause 4.3, provide reasonable assistance to the Contractor and any expatriate personnel of the Contractor or its Sub-contractors to obtain the applicable visas and the requisite work permits for the purposes of discharge by the Contractor or its Sub-contractors of their obligations under this Agreement and the agreements with the Sub-contractors.

### **3.2 Maintenance obligations prior to the Appointed Date**

The Authority shall, prior to the Appointed Date, maintain the Project Highway, at its own cost and expense, so that its traffic worthiness and safety are at no time materially inferior as compared to its condition 10 (ten) days prior to the last date for submission of the Bid, and in the event of any material deterioration or damage other than normal wear and tear, undertake repair thereof. For the avoidance of doubt, the Authority shall undertake only routine maintenance prior to the Appointed Date, and it shall undertake special repairs only in the event of excessive deterioration or damage caused due to unforeseen events such as floods or earthquake.

### **3.3 Environmental Clearances**

Environmental clearances for the Project Highway are not required. The Authority represents and warrants that the forest clearances required for construction of the Project shall be procured by the Authority prior to the date of issue of LOA.

### **3.4 Deemed Termination upon delay**

Without prejudice to the provisions of Clause 8.3, and subject to the provisions of Clause 7.3, the Parties expressly agree that in the event the Appointed Date does not occur, for any reason whatsoever, within 90 days of signing of the Agreement and submission of the full Performance Security by the Contractor, the Agreement shall be deemed to have been terminated. The Authority shall pay damages to the Contractor equivalent to 1% of the Contract Price (3% in case of standalone bridge projects). All other rights, privileges, claims and entitlements of the Contractor under or arising out of this Agreement shall be deemed to have been waived by, and to have ceased. The Contractor shall hand over all information in relation to the Highway, including but not limited to any data, designs, drawings, structures, information, plans, etc. prepared by them for the Highway, to the Authority.

## **Article 4**

### **Obligations of the Contractor**

#### **4.1 Obligations of the Contractor**

- (i) Subject to and on the terms and conditions of this Agreement, the Contractor shall undertake the survey, investigation, design, engineering, procurement, construction, and maintenance of the Project Highway and observe, fulfil, comply with and perform all its obligations set out in this Agreement or arising hereunder.
- (ii) The Contractor shall comply with all Applicable Laws and Applicable Permits (including renewals as required) in the performance of its obligations under this Agreement.
- (iii) Subject to the provisions of Clauses 4.1 (i) and 4.1 (ii), the Contractor shall discharge its obligations in accordance with Good Industry Practice and as a reasonable and prudent person.
- (iv) The Contractor shall remedy any and all loss, defects, or damage to the Project Highway from the Appointed Date until the end of the Construction Period at the Contractor's cost, save and except to the extent that any such loss, defect, or damage shall have arisen from any wilful default or neglect of the Authority.
- (v) The Contractor shall remedy any and all loss, defect or damage to the Project Highway during the Defects Liability Period at the Contractor's cost to the extent that such loss, defect or damage shall have arisen out of the reasons specified in Clause 17.3.
- (vi) The Contractor shall remedy any and all loss or damage to the Project Highway during the Maintenance Period at the Contractor's cost, including those stated in Clause 14.1 (ii), save and except to the extent that any such loss or damage shall have arisen on account of any wilful default or neglect of the Authority or on account of a Force Majeure Event.
- (vii) The Contractor shall, at its own cost and expense, in addition to and not in derogation of its obligations elsewhere set out in this Agreement:
  - (a) make, or cause to be made, necessary applications to the relevant Government Instrumentalities with such particulars and details as may be required for obtaining Applicable Permits set forth in Schedule-F and obtain and keep in force and effect such Applicable Permits in conformity with the Applicable Laws;
  - (b) procure, as required, the appropriate proprietary rights, licences, agreements and permissions for Materials, methods, processes and systems used or incorporated into the Project Highway;
  - (c) make reasonable efforts to maintain harmony and good industrial relations among the personnel employed by it or its Sub-contractors in connection with the performance of its obligations under this Agreement;
  - (d) ensure and procure that its Sub-contractors comply with all Applicable Permits and Applicable Laws in the performance by them of any of the Contractor's obligations under this Agreement;

- (e) not do or omit to do any act, deed or thing which may in any manner violate any provisions of this Agreement;
  - (f) support, cooperate with and facilitate the Authority in the implementation and operation of the Project in accordance with the provisions of this Agreement;
  - (g) ensure that the Contractor and its Sub-contractors comply with the safety and welfare measures for labour in accordance with the Applicable Laws and Good Industry Practice;
  - (h) keep, on Site, a copy of this Agreement, publications named in this Agreement, the Drawings, Documents relating to the Project, and Change of Scope orders and other communications given under this Agreement. The Authority's Engineer and its authorised personnel shall have the right of access to all these documents at all reasonable times;
  - (i) cooperate with other contractors employed by the Authority and personnel of any public authority; and
  - (j) not interfere unnecessarily or improperly with the convenience of the public, or the access to and use and occupation of all roads and footpaths, irrespective of whether they are public or in the possession of the Authority or of others.
- (viii) The Contractor shall undertake all necessary superintendence to plan, arrange, direct, manage, inspect and test the Works. The Contractor shall provide all necessary superintendence of the Works for the proper fulfilling of the Contractor's obligations under the Agreement. Such superintendence shall be given by competent person having adequate knowledge of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents) for the satisfactory and safe execution of the Works.
- (ix) The Contractor shall obtain and maintain a project related bank account operational at site where all transactions related to the payment of work will be done. The Contractor shall submit a monthly account statement and a detailed report on utilization of funds transferred to this project related bank account to Authority's Engineer. Notwithstanding anything contrary to this agreement, the authority, in the interest and to ensure timely completion of the work, reserves the right to audit such bank accounts to ensure that there is no diversion of funds from this project specific account to any other project being implemented by the Contractor.
- (x) The Contractor shall provide the documents of the Contractor specified in the Agreement, and all Contractors' personnel; Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for the execution, completion of Works and remedying defects.
- (xi) The Contractor shall perform the Works in conformity with the Project requirements and other requirements and standards prescribed under or pursuant to the Agreement.
- (xii) The Contractor shall carry out such work incidental and contingent to the original Scope of the Project to comply with Good Industry Practices.

- (xiii) The Contractor shall maintain required staff and necessary Contractor's equipment and materials within the reach of the Site during the Defects Liability Period so that any defects arising are promptly attended.

#### **4.2 Obligations relating to sub-contracts and any other agreements**

- (i) The Contractor, whether Joint Venture or sole, shall not sub-contract any Works in more than 49% (forty nine per cent) of the Contract Price and shall carry out Works directly under its own supervision and through its own personnel and equipment in at least 51% (fifty one per cent) of the Contract Price. Further, in case the Contractor is a Joint Venture, then the Lead Member shall carry out Works directly through its own resources (men, material and machines etc.) in at least 51% (fifty one per cent) of total length of the Project Highway. Provided, however, that in respect of the Works carried out directly by the Contractor, it may enter into contracts for the supply and installation of Materials, Plant, equipment, road furniture, safety devices and labour, as the case may be, for such Works. For the avoidance of doubt, the Parties agree that the Contractor may sub-divide the aforesaid length of 51% (fifty one per cent) in no more than 5 (five) sections of the Project Highway. The Parties further agree that all obligations and liabilities under this Agreement for the entire project Highway shall at all times remain with the Contractor.
- (ii) In the event any sub-contract for Works, or the aggregate of such sub-contracts with any Sub-contractor, exceeds 5% (five percent) of the Contract Price, the Contractor shall communicate the name and particulars, including the relevant experience of the Sub-contractor, to the Authority prior to entering into any such sub-contract. The Authority shall examine the particulars of the Sub-contractor from the national security and public interest perspective and may require the Contractor, no later than 15 (fifteen) business days from the date of receiving the communication from the Contractor, not to proceed with the sub-contract, and the Contractor shall comply therewith.
- (iii) In the event any sub-contract referred to in Clause 4.2 (ii) relates to a Sub-contractor who has, over the preceding 3 (three) years, not undertaken at least one work of a similar nature with a contract value exceeding 40% (forty per cent) of the value of the sub-contract to be awarded hereunder, and received payments in respect thereof for an amount equal to at least such 40% (forty per cent), the Authority may, no later than 15 (fifteen) business days from the date of receiving the communication from the Contractor, require the Contractor not to proceed with such sub-contract, and the Contractor shall comply therewith without delay or demur.
- (iv) It is expressly agreed that the Contractor shall, at all times, be responsible and liable for all its obligations under this Agreement notwithstanding anything contained in the agreements with its Sub-contractors or any other agreement that may be entered into by the Contractor, and no default under any such agreement shall excuse the Contractor from its obligations or liability under this Agreement. However, in case of non-compliance of the Contractor towards his obligations for payments to the approved Sub-contractor(s), which is likely to affect the progress of works, the authority reserves the right to intervene and direct the Contractor to release such

outstanding payments to approved Sub-contractor(s) out of the payments due for the completed Works in the interest of work.

#### **4.3 Employment of foreign nationals**

The Contractor acknowledges, agrees and undertakes that employment of foreign personnel by the Contractor and/or its Sub-contractors and their sub- contractors shall be subject to grant of requisite regulatory permits and approvals including employment/ residential visas and work permits, if any required, and the obligation to apply for and obtain the same shall always rest with the Contractor. Notwithstanding anything to the contrary contained in this Agreement, refusal of or inability to obtain any such permits and approvals by the Contractor or any of its Sub- contractors or their sub-contractors shall not constitute a Force Majeure Event, and shall not in any manner excuse the Contractor from the performance and discharge it of its obligations and liabilities under this Agreement, and the Contractor's liabilities hereunder shall remain unaffected by such failure, refusal or inability.

#### **4.4 Contractor's personnel**

- (i) The Contractor shall ensure that the personnel engaged by it or by its Sub- contractors in the performance of its obligations under this Agreement are at all times appropriately and adequately qualified, skilled and experienced in their respective functions in conformity with Good Industry Practice. The Contractor will try to hire at least 10% (ten percent) trained workmen as per the National Skills Qualifications Framework. If necessary, the requisite workmen may be got trained by the Contractor at his cost through authorized training centres of the Directorate General of Training (DGT). The Contractor will organize training at project site/ sites for the trainees as and when required as per the training schedule finalized in consultation with the training centres. The trainees shall be paid stipend by the Contractor (subject to a maximum of Rs. 15,000/- per person) on the basis of minimum wages to compensate for loss of income during the training period.
- (ii) The Authority's Engineer may, for reasons to be specified in writing, direct the Contractor to remove any member of the Contractor's or Sub-contractor's personnel. Provided that any such direction issued by the Authority's Engineer shall specify the reasons for the removal of such person.
- (iii) The Contractor shall on receiving such a direction from the Authority's Engineer order for the removal of such person or persons with immediate effect. It shall be the duty of the Contractor to ensure that such persons are evicted from the Site within 10 (ten) days of any such direction being issued in pursuance of Clause 4.4 (ii). The Contractor shall further ensure that such persons have no further connection with the Works or Maintenance under this Agreement. The Contractor shall then appoint (or cause to be appointed) a replacement.

#### **4.5 Advertisement on Project Highway**

The Project Highway or any part thereof shall not be used in any manner to advertise any commercial product or services.

#### **4.6 Contractor's care of the Works**

The Contractor shall bear full risk in, and take full responsibility for, the care of the Works, and of the Materials, goods and equipment for incorporation therein, from the Appointed Date until the date of Completion Certificate, save and except to the extent that any such loss or damage shall have arisen from any wilful default or gross neglect of the Authority.

#### **4.7 Electricity, water and other services**

The Contractor shall be responsible for procuring of all utilities as may be required, including without limitation, adequate power, water and other services.

#### **4.8 Unforeseeable difficulties**

Except as otherwise stated in the Agreement:

- (a) the Contractor accepts complete responsibility for having foreseen all difficulties and costs of successfully completing the Works;
- (b) the Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs; and
- (c) the Scheduled Completion Date shall not be adjusted to take account of any unforeseen difficulties or costs.

#### **4.9 Co-ordination of the Works**

- (i) The Contractor acknowledges that in addition to the Agreement, it is also aware of terms of the other Project contracts and other agreements the Authority has negotiated and entered into for performance of its obligations under the Agreement (copies of other contracts and other agreements are made available to the Contractor from time to time) and that the Contractor is fully aware of the consequences to the Authority which would or are likely to result from a breach by the Contractor of its obligations under the Agreement. In the event the actions of the Contractor result in the breach by the Authority of any or all of the other Project contracts and such breach imposes any liability on the Authority, the Contractor shall: (a) undertake all steps as may be possible to mitigate or neutralize the liability that has arisen, and (b) indemnify the Authority against any such liability and compensate the Authority to that extent.
- (ii) The Contractor shall be responsible for the co-ordination and proper provision of the Works, including co-ordination of other Contractors or Sub-contractors for the Project. The Contractor shall co-operate with the Authority in the co-ordination of the Works with the works under the other Project contracts. The Contractor shall provide all reasonable support for carrying out their work to:
  - (a) any other contractors employed by the Authority;
  - (b) the workmen of the Authority;
  - (c) the workmen of any Governmental Instrumentality who may be employed in the execution of work on or near the Site; and
  - (d) such other persons as is required in the opinion of the Authority for successful completion of the Project.

#### **4.10 Environmental Measures**

- (i) The Contractor agrees to conduct its activities in connection with the Agreement in such a manner so as to comply with the environmental requirements which includes, inter alia, all the conditions required to be satisfied under the environmental clearances and applicable law, and assumes full responsibility for measures which are required to be taken to ensure such compliance.

#### **4.11 Site Data**

- (i) The Contractor shall be deemed to have inspected and examined the Site and its surroundings and to have satisfied himself before entering into the Agreement in all material respects including but not limited to:
  - (a) the form and nature of the Site (including, inter-alia, the surface and sub- surface conditions and geo-technical factors);
  - (b) the hydrological and climatic conditions;
  - (c) the extent and nature of the works already completed and Materials necessary for the execution and completion of the Works and the remedying of any defects that includes already executed part also.
  - (d) the suitability and the adequacy of the Site for the execution of the Works;
  - (e) the means of access to the Site and the accommodation the Contractor may require;
  - (f) arranging permits as required as per [.] of the Agreement. (g) the requirements of operation and maintenance; and
  - (h) all other factors and circumstances affecting the Contractor's rights and obligations under the Agreement, the Contract Price and Time for Completion.

#### **4.12 Sufficiency of Contract Price**

The Contractor shall have satisfied itself as to the correctness and sufficiency of the Contract Price. The Contract Price shall cover all its obligations under the Agreement, in addition to all risks the Contractor has agreed to undertake under the Agreement, including those associated with the performance of its obligations under the Agreement and all things necessary for the provision of the Works in a manner satisfactory to the Authority and in accordance with this Agreement.

#### **4.13 Clearance of the Site**

During the provision of the Works, and as a pre-condition to the issue of the Taking- Over Certificate, the Contractor shall clear away and remove from the Site, all Contractor's equipment, surplus material, wreckage, rubbish and temporary Works, and shall keep the Site free from all unnecessary obstructions, and shall not store or dispose of any Contractor's equipment or surplus materials on the Site. The Contractor shall promptly clear away and remove from the Site any wreckage, rubbish or temporary Works no longer required and leave the Site and the Works in a clean and safe condition to the sole satisfaction of the Authority.

#### **4.14 Obligations relating to Local Content**

The Contractor [Class I Local Supplier/ Class II Local Supplier/Non Local Supplier] undertakes to ensure minimum Local Content in the Project Highway of at least [50%/20%] duly complying with the provisions of Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, Government of India Order No. P-45021/2/2017-PP (BE-II) dated September 16,2020, as amended or modified till Bid Due Date and the provisions under Rule 144 (xi) of GFR, 2017.

## **Article 5**

### **Representations and Warranties**

#### **5.1 Representations and warranties of the Contractor**

- (i) The Contractor represents and warrants to the Authority that:
  - (a) it is duly organised and validly existing under the laws of India, and has full power and authority to execute and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;
  - (b) it has taken all necessary corporate and/or other actions under Applicable Laws to authorise the execution and delivery of this Agreement and to validly exercise its rights and perform its obligations under this Agreement;
  - (c) this Agreement constitutes its legal, valid and binding obligation, enforceable against it in accordance with the terms hereof, and its obligations under this Agreement will be legally valid, binding and enforceable against it in accordance with the terms hereof;
  - (d) it is subject to the laws of India, and hereby expressly and irrevocably waives any immunity in any jurisdiction in respect of this Agreement or matters arising thereunder including any obligation, liability or responsibility hereunder;
  - (e) the information furnished in the Bid, Request for Qualification and Request for Proposals or otherwise and as updated on or before the date of this Agreement is true and accurate in all respects as on the date of this Agreement;
  - (f) the execution, delivery and performance of this Agreement will not conflict with, or result in the breach of, or constitute a default under, or accelerate performance required by any of the terms of its memorandum and articles of association or any Applicable Laws or any covenant, contract, agreement, arrangement, understanding, decree or order to which it is a party or by which it or any of its properties or assets is bound or affected;
  - (g) there are no actions, suits, proceedings, or investigations pending or, to its knowledge, threatened against it at law or in equity before any court or before any other judicial, quasi-judicial or other authority, the outcome of which may result in the breach of this Agreement or which individually or in the aggregate may result in any material impairment of its ability to perform any of its obligations under this Agreement;
  - (h) it has no knowledge of any violation or default with respect to any order, writ, injunction or decree of any court or any legally binding order of any Government Instrumentality which may result in any material adverse effect on its ability to perform its obligations under this Agreement and no fact or circumstance exists which may give rise to such proceedings that would adversely affect the performance of its obligations under this Agreement;
  - (i) it has complied with Applicable Laws in all material respects and has not been subject to any fines, penalties, injunctive relief or any other civil or criminal

liabilities which in the aggregate have or may have a material adverse effect on its ability to perform its obligations under this Agreement;

- (j) no representation or warranty by it contained herein or in any other document furnished by it to the Authority or to any Government Instrumentality in relation to Applicable Permits contains or will contain any untrue or misleading statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading;
  - (k) no sums, in cash or kind, have been paid or will be paid, by it or on its behalf, to any person by way of fees, commission or otherwise for securing the contract or entering into this Agreement or for influencing or attempting to influence any officer or employee of the Authority in connection therewith;
  - (l) nothing contained in this Agreement shall create any contractual relationship or obligation between the Authority and any Sub- contractors, designers, consultants or agents of the Contractor;
  - (m) it is adequately financed has the requisite knowledge, expertise, technical know-how, experience, resources, infrastructure, licenses, patents, copy rights, for designing, supplying/ procuring the goods and materials, and for providing the installation and construction services required for completing the construction of the Project Facilities; and
- (ii) it represents the Authority that:
- (a) it owns or has the right to use all “Intellectual Property” necessary to perform the contractual obligations and to carry on the Works without conflict with the right of others;
  - (b) All intellectual property rights necessary to perform the contractual obligations and to carry on the Works are in full force and effect and are vested in, and beneficially owned by the Contractor, and are free from encumbrances.
  - (c) None of the intellectual property rights is being used, claimed, or posed or attacked by any other person, nor does the use of such intellectual property rights or any part of them infringe the intellectual property rights owned or enjoyed by any third party.
  - (d) None of the intellectual property rights owned or used by the Contractor is the subject of any claim, opposition, attack, assertion or other arrangement of whatsoever nature which does or may impinge upon their use, validity, enforceability or ownership by the Parties, and there are no grounds or other circumstances which may give rise to the same.
  - (e) No licenses or registered user or other rights have been granted or agreed to be granted to any third party in respect of such intellectual property rights.
  - (f) No act has been done or has been omitted to be done to entitle any authority or person to cancel, forfeit or modify any intellectual property rights.

- (g) The Contractor shall notify the Authority of any adverse use of the intellectual property rights or confusingly or deceptively similar to the intellectual property rights.
- (h) The Contractor shall recognize the Authority's ownership and title to the intellectual property rights and shall not at any time, either directly or indirectly, put to issue the validity or ownership of the intellectual property rights and it will not do any act or thing, either directly or indirectly, which in anyway impairs the validity and ownership of the intellectual property rights.
- (i) The Contractor shall, promptly execute, acknowledge and deliver all documents which are requested by Authority to record with appropriate governmental agencies and authorities the fact that the Authority has the right to the use of the said intellectual property rights.
- (j) The Contractor shall not, for any reason, object to, or interfere in any way with the ownership, registration or use of the intellectual property rights by the Authority (or its licensee or assigns) for any purpose whatsoever.
- (iii) The Contractor is fully aware that the Agreement is inter linked with the other Project contracts and the non-performance or deficient performance or default by the Contractor and/or any of the Contractor's personnel or Subcontractors under one among the said contracts will have bearing on the other contracts and the evaluation of the Contractor's performance under the Agreement and the Project itself.
- (iv) If at any time during the Defects Liability Period any item of the Works or Project Facilities or any part thereof, do not conform to the Authority requirements and Specifications and Standards, on being so notified by the Authority, the Contractor shall promptly rectify/remedy such nonconformity to the satisfaction of the Authority solely at the Contractor's expense; failing which the Authority may reject or revoke Taking-Over Certificate, and the Authority may proceed to correct the Contractor's nonconforming Work by the most expeditious means available, the costs of which shall be to the Contractor's account; or the Authority may retain the non-conforming Work and an equitable adjustment reducing the total Contract Price to reflect the diminished value of such non-conforming Work will be made by written amendment.
- (v) In addition to the other warranties, the Contractor represents and warrants as follows:
  - (a) The Contractor has (or, if the technology does not currently exist, will have granted at the time of passing to The Employer) in and to the technology used in the equipment, materials, goods, Works, Contractor's documents, Drawings and Manuals ("Technology") -
    - i. all right, title and interest free of any lien, claim or restriction; and
    - ii. right to grant to the Authority the right to use the Technology for the purpose of this contract, free of any lien, claim or restriction and on the terms of license as required.
  - (b) The Contractor has granted (or, if the technology does not currently exist, will grant at the time of passing to the Authority the property and title in and to the

equipment, materials, goods, Works, spares, Contractor's documents, Drawings and Manuals in which it is used) to the Authority the right to use the Technology, free of any lien, claim or restriction.

- (vi) In addition to the other Warranties, the Contractor represents and warrants as follows:
  - (a) No Technology contains any worm (i.e., a program that travels from one computer to another computer but does not attach itself to the operating system of the computer it enters), virus (i.e., a program that travels from one computer to another computer that attaches itself to the operating system it enters) or self-destruct capability.
  - (b) The Technology will not abnormally end or provide invalid or incorrect results as a result of date-dependent data.
  - (c) The Technology can accurately recognize, manage, accommodate, and manipulate date-dependent data, including single and multi-century formulas and leap years.
- (vii) No criminal proceedings instituted against any of the employees or Directors of the Contractor.
- (viii) Till date the services of the Contractor has not been terminated by any person for any breach or non-performance or negligence by the Contractor.

## **5.2 Representations and warranties of the Authority**

The Authority represents and warrants to the Contractor that:

- (a) it has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated herein and that it has taken all actions necessary to execute this Agreement, exercise its rights and perform its obligations, under this Agreement;
- (b) it has taken all necessary actions under the Applicable Laws to authorise the execution, delivery and performance of this Agreement;
- (c) it has the financial standing and capacity to perform its obligations under this Agreement;
- (d) this Agreement constitutes a legal, valid and binding obligation enforceable against it in accordance with the terms hereof;
- (e) it has no knowledge of any violation or default with respect to any order, writ, injunction or any decree of any court or any legally binding order of any Government Instrumentality which may result in any material adverse effect on the Authority's ability to perform its obligations under this Agreement;
- (f) it has complied with Applicable Laws in all material respects;
- (g) it has good and valid right to the Site and has the power and authority to grant the Right of Way in respect thereof to the Contractor; and
- (h) it has procured Right of Way and environment clearances such that the Contractor can commence construction forthwith on 90% (ninety per cent) of the total length of the Project Highway.

### **5.3 Disclosure**

In the event that any occurrence or circumstance comes to the attention of either Party that renders any of its aforesaid representations or warranties untrue or incorrect, such Party shall immediately notify the other Party of the same. Such notification shall not have the effect of remedying any breach of the representation or warranty that has been found to be untrue or incorrect nor shall it adversely affect or waive any obligation of either Party under this Agreement.

## **Article 6**

### **Disclaimer**

#### **6.1 Disclaimer**

- (i) The Contractor acknowledges that prior to the execution of this Agreement, the Contractor has, after a complete and careful examination, made an independent evaluation of the Request for Proposal, Scope of the Project, Specifications and Standards of design, construction and maintenance, Site, local conditions, physical qualities of ground, subsoil and geology, traffic volumes, suitability and availability of access routes to the Site and all information provided by the Authority or obtained, procured or gathered otherwise, and has determined to its satisfaction the accuracy or otherwise thereof and the nature and extent of difficulties, risks and hazards as are likely to arise or may be faced by it in the course of performance of its obligations hereunder. Save as provided in Clause 3.1 and Clause 5.2, the Authority makes no representation whatsoever, express, implicit or otherwise, regarding the accuracy, adequacy, correctness, reliability and/or completeness of any assessment, assumptions, statement or information provided by it and the Contractor confirms that it shall have no claim whatsoever against the Authority in this regard.
- (ii) The Contractor acknowledges and hereby accepts to have satisfied itself as to the correctness and sufficiency of the Contract Price.
- (iii) The Contractor acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth in Clause 6.1 (i) above and hereby acknowledges and agrees that the Authority shall not be liable for the same in any manner whatsoever to the Contractor, or any person claiming through or under any of them, and shall not lead to any adjustment of Contract Price or Scheduled Completion Date.
- (iv) The Parties agree that any mistake or error in or relating to any of the matters set forth in Clause 6.1 (i) above shall not vitiate this Agreement, or render it voidable.
- (v) In the event that either Party becomes aware of any mistake or error relating to any of the matters set forth in Clause 6.1 (i) above, that Party shall immediately notify the other Party, specifying the mistake or error.
- (vi) Except as otherwise provided in this Agreement, all risks relating to the Project shall be borne by the Contractor; and the Authority shall not be liable in any manner for such risks or the consequences thereof.

**Part III**  
**Construction and Maintenance**

## Article 7

### Performance Security

#### 7.1 Performance Security

- (i) (A) Within 30 (thirty) days of receipt of Letter of Acceptance, the selected Bidder shall furnish to the Authority in the form of Insurance Surety Bond in form set forth in Annex III of Schedule-G, Account Payee Demand Draft, Banker's Cheque or irrevocable and unconditional e-Bank Guarantee / Physical Bank Guarantee from a Bank in the form set forth in Annex-I of Schedule-G (the "Performance Security") for an amount equal to 3% (three percent) of its Bid Price. In case of bids mentioned below, the Selected Bidder, along with the Performance Security, shall also furnish to the Authority in the form of Insurance Surety Bond (in the same form given at Annex III of Schedule-G), Account Payee Demand Draft, Banker's Cheque or irrevocable and unconditional e-Bank Guarantee / Physical Bank Guarantee from a Bank in the same form given at Annex-I Schedule-G towards an Additional Performance Security (the "Additional Performance Security") for an amount calculated as under:
- (a) where the bid price is below 10% but not below 20% of the project cost put to bid, the additional performance guarantee/security percentage shall be incremented by 0.1% for every percentage of bid price below 10% of the project cost put to bid starting at 11% with the additional bid performance guarantee being 0.1% and this additional performance guarantee percentage shall be applied on the bid price;
  - (b) where the bid price is 20% or more below of the project cost put to bid, the additional performance guarantee percentage shall be incremented by 0.2% for every percentage of bid price below 20% of the project cost put to bid in addition to 1% of the bid price and this additional performance guarantee percentage shall be applied on the bid price;
  - (c) The additional performance guarantee percentage shall be rounded off to the next lower percentage based on whether the decimal point of the percentage of bid price is below 0.5% or next higher percentage based on whether the decimal point of the percentage of bid price is 0.5% or more.
  - (d) The additional performance security shall be treated as part of the performance security.
  - (e) In respect of projects under road wing Additional Performance Security shall be taken with approval from DG (RD) & SS, MoRTH.
- (B) The Performance Security shall be valid until 60(sixty) days after the Defects Liability Period. The Additional Performance Security shall be valid until 28 (twenty-eight) days after Project Completion Date.
- (ii) The Selected Bidder has the option to provide 50% of the Performance Security and 50% of the Additional Performance Security, if any, within 30 (thirty) days of receipt of Letter of Acceptance, in any case before signing of the Contract Agreement and the remaining Performance Security shall be submitted within 30 days of signing of this agreement.

- (iii) In the event the Selected Bidder fails to provide the remaining Performance Security and Additional Performance Security, if any, as prescribed herein, it may seek extension of time for a further period upto 60 days by paying the Damages upfront along with the request letter seeking the extension. The Damages shall be the sum calculated at the rate of 0.01% (zero point zero one per cent) of the Bid Price offered by the Selected Bidder for each day until the Performance Security and Additional Performance Security, if any, is provided in full as prescribed herein. The damages at full rate as given above shall be applicable even if a part of the Performance Security and Additional Performance Security, if any, is provided.
- (iv) For avoidance of any doubt, in case of failure of submission of Performance Security and Additional Performance Security, if any, within the additional 60 days' time period, the award shall be deemed to be cancelled/ withdrawn and the Bid Security shall be encashed and the proceeds thereof appropriated by the Authority. Thereupon all rights, privileges, claims and entitlements of the Contractor under or arising out of the Award shall be deemed to have been waived by, and to have ceased with the concurrence of the Contractor, and the Award shall be deemed to have been withdrawn by the Authority

## **7.2 Extension of Performance Security and Additional Performance Security**

The Contractor may initially provide the Performance Security for a period of 2 (two) years; provided that it shall procure the extension of the validity of the Performance Security, as necessary, at least 2 (two) months prior to the date of expiry thereof. Upon the Contractor providing an extended Performance Security, the previous Performance Security shall be deemed to be released and the Authority shall return the same to the Contractor within a period of 7 (seven) business days from the date of submission of the extended Performance Security.

## **7.3 Appropriation of Performance Security**

- (i) Upon occurrence of a Contractor's Default, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to encash and appropriate the relevant amounts from the Performance Security as Damages for such Contractor's Default.
- (ii) Upon such encashment and appropriation from the Performance Security, the Contractor shall, within 30 (thirty) days thereof, replenish, in case of partial appropriation, to its original level the Performance Security, and in case of appropriation of the entire Performance Security provide a fresh Performance Security, as the case may be, and the Contractor shall, within the time so granted, replenish or furnish fresh Performance Security as aforesaid failing which the Authority shall be entitled to terminate the Agreement in accordance with Article 23. Upon replenishment or furnishing of a fresh Performance Security, as the case may be, as aforesaid, the Contractor shall be entitled to an additional Cure Period of 30 (thirty) days for remedying the Contractor's Default, and in the event of the Contractor not curing its default within such Cure Period, the Authority shall be entitled to encash and appropriate such Performance Security as Damages, and to terminate this Agreement in accordance with Article 23.

#### **7.4 Release of Performance Security**

- (i) The Authority shall return the Performance Security to the Contractor within 60 (sixty) days of the expiry of the Maintenance Period or the Defects Liability Period, whichever is later, under this Agreement. Notwithstanding the aforesaid, the Parties agree that the Authority shall not be obliged to release the Performance Security until all Defects identified during the Defects Liability Period have been rectified.
- (ii) The Authority shall return the Additional Performance Security to the contractor within 28 days from the date of issue of completion certificate under article 12 of this agreement.
- (iii) The Authority shall be liable to pay interest @ 9% (nine per cent) per annum for any delay in the return of Performance Security and Additional Performance Security, if any, beyond the period prescribed above for the period of delay.

#### **7.5 Retention Money**

- (i) From every payment for Works due to the Contractor in accordance with the provisions of Clause 19.5, the Authority shall deduct 6% (six per cent) thereof as guarantee money for performance of the obligations of the Contractor during the Construction Period (the "Retention Money") subject to the condition that the maximum amount of Retention Money shall not exceed 5% (five per cent) of the Contract Price.
- (ii) Upon occurrence of a Contractor's Default, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to appropriate the relevant amounts from the Retention Money as Damages for such Contractor's Default.
- (iii) Within 15 (fifteen) days of the date of issue of the Completion Certificate, the Authority shall refund the balance of Retention Money remaining with the Authority after adjusting the amounts appropriated under the provisions of Clause 7.5 (ii).
- (iv) The Parties agree that in the event of Termination of this Agreement, the Retention Money specified in this Clause 7.5 shall be treated as if they are Performance Security and shall be reckoned as such for the purposes of Termination Payment under Clause 23.6.

## **Article 8**

### **Right of Way**

#### **8.1 The Site**

The site of the Project Highway (the "Site") shall comprise the site described in Schedule-A in respect of which the Right of Way shall be provided by the Authority to the Contractor. The Authority shall be responsible for:

- (a) acquiring and providing Right of Way on the Site in accordance with the alignment finalised by the Authority, free from all encroachments and encumbrances, and free access thereto for the execution of this Agreement; and
- (b) obtaining licences and permits for environment clearance for the Project Highway.

#### **8.2 Procurement of the Site**

- (i) The Authority Representative, the Contractor and Authority's Engineer shall, within 10 (ten) days of the date of this Agreement, inspect the Site and prepare a detailed memorandum containing an inventory of the Site including the vacant and unencumbered land, buildings, structures, road works, trees and any other immovable property on or attached to the Site (hereinafter referred to as the "Handover Memorandum"). Subject to the provisions of Clause 8.2 (iii), the Handover Memorandum shall have appended thereto an appendix (the "Appendix") specifying in reasonable detail those parts of the Site to which vacant access and Right of Way has not been given to the Contractor along with details of hindrances in the Construction Zone. For sake of clarity the Handover Memorandum shall clearly specify the parts of Site where work can be executed. Signing of the Handover Memorandum, in three counterparts (each of which shall constitute an original), by the authorized representatives of the Authority, Contractor and Authority's Engineer shall be deemed to constitute a valid evidence of giving the Right of Way to the Contractor for discharging its obligations under and in accordance with the provisions of this Agreement and for no other purpose whatsoever.
- (ii) Whenever the Authority is ready to hand over any part or parts of the Site included in the Appendix, it shall inform the Contractor, by notice, of the proposed date and time such of hand over. The Authority Representative and the Contractor shall, on the date so notified, inspect the specified parts of the Site, and prepare a memorandum containing an inventory of the vacant and unencumbered land, buildings, structures, road works, trees and any other immovable property on or attached to the Site so handed over. The signing of the memorandum, in three (3) counterparts (each of which shall constitute an original), by the authorised representatives of the Parties shall be deemed to constitute a valid evidence of giving the relevant Right of Way to the Contractor.

If the contractor fails to join for site inspection or disputes the parts of the site available for work, the Authority's Engineer shall decide the parts of the site where work can be executed and notify to both the parties within 3 days of the proposed date of inspection. The parties agree that such notification of the Authority's Engineer as mentioned hereinabove shall be final and binding on the parties.

- (iii) The Authority shall provide the Right of Way to the Contractor in respect of all land included in the Appendix by the date specified in Schedule-A for those parts of the Site referred to therein, and in the event of delay for any reason other than Force Majeure or breach of this Agreement by the Contractor, it shall pay to the Contractor, Damages in a sum calculated in accordance with Clause 8.3. The Contractor agrees that it shall not be entitled to claim any other damages on account of any such delay by the Authority.
- (iv) Notwithstanding anything to the contrary contained in this Clause 8.2, the Authority shall specify the parts of the Site, if any, for which Right of Way shall be provided to the Contractor on the dates specified in Schedule-A. Such parts shall also be included in the Appendix prepared in pursuance of Clause 8.2 (i).
- (v) The Authority further acknowledges and agrees that prior to the Appointed Date, it shall have procured issuance of the statutory notification under Applicable Laws for vesting of all the land comprising the Project in the Authority and has taken possession of area for Construction Zone for at least 90% (ninety per cent) of the total length of the Project Highway. The Parties also acknowledge and agree that the conditions specified in this Clause 8.2 (iii) shall not be modified or waived by either Party.
- (vi) For the avoidance of doubt, the Parties expressly agree that the Appendix shall in no event contain sections of the Project Highway the cumulative length of which exceeds 10% (ten percent) of the total length of the Project Highway.
- (vii) Pursuant to signing of Handover Memorandum under clause 8.2 (i), Contractor shall submit to the Authority's Engineer, a monthly land possession report till expiry of 180 (one hundred and eighty) days from Appointed Date, in respect of those parts of the site to which vacant access and right of way was not given to the contractor and included in Appendix to the memorandum signed under clause 8.2 (i), duly specifying the part of the site, if any, for which the right of way is yet to be handed over.

### 8.3 Damages for delay in handing over the Site

- (i) In the event the Right of Way to any part of the Site is not provided by the Authority on or before the date(s) specified in Clause 8.2 for any reason other than Force Majeure or breach of this Agreement by the Contractor, the Authority shall pay Damages to the Contractor a sum calculated in accordance with the following formula for and in respect of those parts of the Site to which the Right of Way has not been provided:

$$\text{Amount of Damages in Rs. per day per metre} = 0.05 \times C \times \frac{1}{L} \times \frac{1}{N}$$

Where,

C = the Contract Price;

L = length of the Project Highway in metres; and

N = Completion period in days (Appointed Date to Scheduled Completion Date)

In the event that any Damages are due and payable to the Contractor under the provisions of this Clause 8.3 (i) for delay in providing the Right of Way, the Contractor shall, subject to the provisions of Clause 10.5, be entitled to Time Extension equal to the period for

which the Damages have become due and payable under this Clause 8.3 (i), save and except that:

- (a) if any delays involve time overlaps, the overlaps shall not be additive; and
- (b) such Time Extension shall be restricted only to the Works which are affected by the delay in providing the Right of Way.

For the avoidance of doubt, the Parties expressly agree that the Damages specified hereunder and the Time Extension specified in Clause 10.5 shall be restricted only to failure of the Authority to provide the Right of Way for and in respect of the "Construction Zone" which shall comprise the following components:

- Main in carriageway
  - Median (for 4 lane carriageway or more) Paved and earthen shoulders
  - Area for Structures including ROBs/RUBs.
  - Safety measures including Roadside Drains and Furniture.
  - A parallel working space for accommodating slopes/retaining structures etc.
- (ii) Notwithstanding anything to the contrary contained in this Agreement, the Contractor expressly agrees that Works on all parts of the Site for which Right of Way of Construction Zone is granted on the Appointed Date, or with respect to the parts of the Site provided in Schedule-A, no later than the date(s) specified therein, as the case may be, shall be completed before the Scheduled Completion Date and shall not qualify for any Time Extension under the provisions of Clause 8.3 (iii).
- (iii) (a) Notwithstanding anything to the contrary contained in this Agreement, unless covered under the deemed de-scoping in terms of sub-clause 8.3 (iii) (b), the Authority may at any time withdraw any Works forming part of this Agreement, subject to such Works not exceeding an aggregate value, such value to be determined in accordance with Schedule-H, equal to 10 (ten) percent of the Contract Price.
- (b) Provided that if any Works cannot be undertaken within the municipal limits of a town or within any area falling in a reserved forest or wildlife sanctuary or the stretches where vacant access and Right of Way could not be handed over, as the case may be, because the requisite clearances or approvals or affected land parcels for commencing construction of Works therein have not been given within 180 (one hundred and eighty) days of the Appointed date, the affected Works shall be deemed to be withdrawn under the provisions of this Clause 8.3.3. Such Works shall not be computed for the purposes of the aforesaid ceiling of 10% (ten per cent) hereunder.
- (c) Provided further that in case such stretches (as mentioned in Sub-Clause (b) above) can be handed over to the Contractor before the expiry of the original Scheduled Construction Period of the Project Highway, and the Contractor agrees to take up the work, the same may be allowed to be executed by him with corresponding Extension of Time, subject to the condition that the Contractor shall not be entitled to raise any claims on account of prolongation costs in this behalf.

- (iv) In the event of withdrawal of Works under Clause 8.3 (iii) (a), the Contract Price shall be reduced by an amount equal to the percent of the value of the works withdrawn as mentioned in the table below and the Contractor shall not be entitled to any other compensation of Damages for the withdrawal of works

<b>Value of the Works withdrawn</b>	<b>Percentage of value of works to be reduced from Contract Price</b>
UptoRs. 100 Crore	90%
More than Rs. 100 Crore	Rs. 90 Crore plus 95% of the amount greater than Rs. 100 Crore

Provided that if any Works are withdrawn after commencement of the Construction of such works, the Authority shall pay to the Contractor 110% (one hundred and ten per cent) of the fair value of the work done, as assessed by the Authority Engineer.

The parties expressly agree that the value of the Works withdrawn shall be determined from the details available in Schedule-H. In the event that it is impossible to determine the value from Schedule-H, then the value shall be determined in accordance with the provisions of Clause 13.2(iii).

#### **8.4 Site to be free from Encumbrances**

Subject to the provisions of Clause 8.2, the Site shall be made available by the Authority to the Contractor pursuant hereto free from all Encumbrances and occupations and without the Contractor being required to make any payment to the Authority because of any costs, compensation, expenses and charges for the acquisition and use of such Site for the duration of the Project Completion Schedule. For the avoidance of doubt, it is agreed that the existing rights of way, easements, privileges, liberties and appurtenances to the Site shall not be deemed to be Encumbrances. It is further agreed that, unless otherwise specified in this Agreement, the Contractor accepts and undertakes to bear any and all risks arising out of the inadequacy or physical condition of the Site.

#### **8.5 Protection of Site from encroachments**

On and after signing the memorandum and/or subsequent memorandum referred to in Clause 8.2, and until the issue of the Completion Certificate, the Contractor shall maintain a round-the-clock vigil over the Site and shall ensure and procure that no encroachment takes place thereon. During the Construction Period, the Contractor shall protect the Site from any and all occupations, encroachments or Encumbrances, and shall not place or create nor permit any Sub-contractor or other person claiming through or under the Agreement to place or create any Encumbrance or security threat over all or any part of the Site or the Project Assets, or on any rights of the Contractor therein or under this Agreement, save and except as otherwise expressly set forth in this Agreement. In the event of any encroachment or occupation on any part of the Site, the Contractor shall report such encroachment or occupation forthwith to the Authority and undertake its removal at its own cost and expenses.

#### **8.6 Special/ temporary Right of Way**

The Contractor shall bear all costs and charges for any special or temporary right of way required by it in connection with access to the Site. The Contractor shall obtain at its cost such facilities on or outside the Site as may be required by it for the purposes of the Project Highway and the performance of its obligations under this Agreement.

#### **8.7 Access to the Authority and the Authority's Engineer**

- (i) The Right of Way given to the Contractor hereunder shall always be subject to the right of access of the Authority and the Authority's Engineer and their employees and agents for inspection, viewing and exercise of their rights and performance of their obligations under this Agreement.
- (ii) The Contractor shall ensure, subject to all relevant safety procedures, that the Authority has un-restricted access to the Site during any emergency situation, as decided by the Authority's Engineer.

#### **8.8 Geological and archaeological finds**

It is expressly agreed that mining, geological or archaeological rights do not form part of this Agreement with the Contractor for the Works, and the Contractor hereby acknowledges that it shall not have any mining rights or interest in the underlying minerals, fossils, antiquities, structures or other remnants or things either of particular geological or archaeological interest and that such rights, interest and property on or under the Site shall vest in and belong to the Authority or the concerned Government Instrumentality. The Contractor shall take all reasonable precautions to prevent its workmen or any other person from removing or damaging such interest or property and shall inform the Authority forthwith of the discovery thereof and comply with such instructions as the concerned Government Instrumentality may reasonably give for the removal of such property. For the avoidance of doubt, it is agreed that any reasonable expenses incurred by the Contractor hereunder shall be reimbursed by the Authority. It is also agreed that the Authority shall procure that the instructions hereunder are issued by the concerned Government Instrumentality within a reasonable period.

## **Article 9**

### **Utilities and Trees**

#### **9.1 Existing utilities and roads**

Notwithstanding anything to the contrary contained herein, it shall be the responsibility of the Contractor to ensure that the respective entities owning the existing roads, right of way, level crossings, structures, or utilities on, under or above the Site are enabled by it to keep them in continuous satisfactory use, if necessary, by providing suitable temporary diversions with the authority of the controlling body of that road, right of way or utility.

#### **9.2 Shifting of obstructing utilities**

The contractor shall, subject to Applicable Laws and with assistance of the Authority, undertake shifting of any utility (including electric lines, water pipes and telephone cables etc.), to an appropriate location or alignment, if such utility or obstruction adversely affected the execution of works or maintenance of the project Highway in accordance with this Agreement, as per the scope given in Schedule B and in accordance with applicable standards and specifications of concerned utility owning entity. The cost of shifting of such utilities indicated in Schedule B is payable to the Contractor as per Schedule H. The Authority will provide assistance to the Contractor for obtaining the estimates for shifting of such utilities from the entity owning such electric lines, water pipes or telephone cables, as the case may be. The Contractor shall execute such utility shifting works under the supervision of utility owning agency and Authority Engineer (AE) in accordance with the provision of agreement. The supervision charges may be paid by the Authority to the Utility Owning Entity. In the event of any delay in shifting thereof, the Contractor shall be responsible for failure to perform any of its obligations here under if such failure is not as a direct consequence of delay on the part of the entity owning such electric lines, water pipes or telephone cables, as the case may be.

The dismantled material/scrap of existing Utility to be shifted dismantled shall belong to the Contractor who would be free to dispose-off the dismantled materials as deemed fit by them. The work of shifting of utilities can be taken up by the Contractor any time after signing of the Agreement.

The work of shifting of Utilities can be taken up by the Contractor any time after signing of the Agreement.

#### **9.3 New utilities**

- (i) The Contractor shall allow, subject to the permission from the Authority and such conditions as the Authority may specify, access to, and use of the Site for laying telephone lines, water pipes, electricity lines/ cables or other public utilities. Where such access or use causes any financial loss to the Contractor, it may require the user of the Site to pay compensation or damages as per Applicable Laws. For the avoidance of doubt, it is agreed that use of the Site under this Clause 9.3 shall not in any manner relieve the Contractor of its obligation to construct and maintain the Project Highway in accordance with this Agreement and any damage caused by such use shall be restored forthwith at the cost of the Authority.

- (ii) The Authority may, by notice, require the Contractor to connect any adjoining road to the Project Highway, and the connecting portion thereof falling within the Site shall be constructed by the Contractor at the Authority's cost in accordance with Article 10.
- (iii) The Authority may by notice require the Contractor to connect, through a paved road, any adjoining service station, hotel, motel or any other public facility or amenity to the Project Highway, whereupon the connecting portion thereof that falls within the Site shall be constructed by the Contractor on payment of the cost. The cost to be paid by the Authority to the Contractor shall be determined by the Authority's Engineer. For the avoidance of doubt, in the event such road is to be constructed for the benefit of any entity, the Authority may require such entity to make an advance deposit with the Contractor or the Authority, as the case may be, of an amount equal to the estimated cost as determined by the Authority's Engineer and such advance shall be adjusted against the cost of construction as determined by the Authority's Engineer hereunder.
- (iv) In the event construction of any Works is affected by a new utility or works undertaken in accordance with this Clause 9.3, the Contractor shall be entitled to a reasonable Time Extension as determined by the Authority's Engineer.

#### **9.4 Felling of trees**

The Authority shall assist the Contractor in obtaining the Applicable Permits for felling of trees in non-forest area to be identified by the Authority for this purpose if, and only if, such trees cause a Material Adverse Effect on the construction or maintenance of the Project Highway. The Contractor shall fell these trees as per the Permits obtained. The cost of such felling shall be borne by the Authority and in the event of any delay in felling thereof for reasons beyond the control of the Contractor; it shall be excused for failure to perform any of its obligations hereunder if such failure is a direct consequence of delay in the felling of trees. The Parties hereto agree that the felled trees shall be deemed to be owned by the Authority and shall be disposed in such manner and subject to such conditions as the Authority may in its sole discretion deem appropriate. For the avoidance of doubt, the Parties agree that if any felling of trees hereunder is in a forest area, the Applicable Permit thereof shall be procured by the Authority within the time specified in the Agreement.

#### **9.5 Dismantling of structures**

The Contractor shall at its own cost dismantle the structures in the acquired lands including those on patta lands, abadi lands, assigned lands, etc. the compensation for which, was paid by the Authority to the land owners and the lands were handed over to the Contractor as per Schedule B-I. The Contractor shall, at its own cost, dispose of the dismantled material in its sole discretion as deemed appropriate, while complying with all environmental guidelines and regulations and clear the Site for undertaking construction. In the event of any delay in dismantling of structures thereof for reasons beyond the control of the Contractor, the Contractor shall be entitled to Damages in a sum calculated in accordance with the formula specified in Clause 8.3 (i) for the period of delay, and to the Time Extension in accordance with Clause 10.5 for and in respect of the part(s) of the Works affected by such delay; provided that if the delays involve any time overlaps, the overlaps shall not be additive.

#### **9.6 Development Period**

The Contractor may commence pre-construction activities like utility shifting, boundary wall construction or any other activity assigned to the Contractor by the Authority to enable construction of the Project Highway immediately after signing of the Agreement, to the extent that such work is ready for execution. The Parties agree that these works may be taken up and completed to the extent feasible by the Contractor, before declaration of the Appointed Date, but no claim against the Authority for delay shall survive during this period and that the undertaking of these works by the Contractor shall not count towards the Scheduled Construction Period of the project which starts counting only from the Appointed Date. No construction activity of the Project Highway shall be undertaken during the development period.

## **Article 10**

### **Design and Construction of the Project Highway**

#### **10.1 Obligations prior to commencement of Works**

- (i) Within 20 (twenty) days of the Appointed Date, the Contractor shall:
  - (a) appoint its representative, duly authorised to deal with the Authority in respect of all matters under or arising out of or relating to this Agreement;
  - (b) appoint a design director (the “Design Director”) who will head the Contractor’s design unit and shall be responsible for surveys, investigations, collection of data, and preparation of preliminary and detailed designs;
  - (c) undertake and perform all such acts, deeds and things as may be necessary or required before commencement of Works under and in accordance with this Agreement, the Applicable Laws and Applicable Permits; and
  - (d) make its own arrangements for quarrying of materials needed for the Project Highway under and in accordance with the Applicable Laws and Applicable Permits.
- (ii) The Authority shall, appoint an engineer (the “Authority’s Engineer”) before the Appointed Date to discharge the functions and duties specified in this Agreement, and shall notify to the Contractor the name, address and the date of appointment of the Authority’s Engineer forthwith.
- (iii) Within 30 (thirty) days of the Appointed Date, the Contractor shall submit to the Authority and the Authority’s Engineer a programme (the “Programme”) for the Works, developed using networking techniques, for review and consent of the Engineer, giving the following details:
  - (a) Part I : Contractor’s organisation for the Project, the general methods and arrangements for design and construction, environmental management plan, Quality Assurance Plan including design quality plan, traffic management and safety plan covering safety of users and workers during construction (including use of ‘ROBOTS’ for diversion and control of traffic), Contractor’s key personnel and equipment.
  - (b) Part II : Programme for completion of all stages of construction given in Schedule-H and Project Milestones of the Works as specified in Project Completion Schedule set forth in Schedule-J. The Programme shall include:
    - i. the order in which the Contractor intends to carry out the Works, including the anticipated timing of design and stages of Works;
    - ii. the periods for reviews under Clause 10.2;
    - iii. the sequence and timing of inspections and tests specified in this Agreement; and
    - iv. the particulars for the pre-construction reviews and for any other submissions, approvals and consents specified in the Agreement.

The Contractor shall submit a revised Programme whenever the previous Programme is inconsistent with the actual progress or with the Contractor’s obligations.

- (c) Part III : Monthly cash flow forecast.
- (iv) The Contractor shall compute, on the basis of the Drawings prepared in accordance with Clause 10.2 (iv), and provide to the Authority's Engineer, the length, area and numbers, as the case may be, in respect of the various items of work specified in Schedule-H and comprising the Scope of the Project. The Parties expressly agree that these details shall form the basis for estimating the interim payments for the Works in accordance with the provisions of Clause 19.3. For the avoidance of doubt, the sum of payments to be computed in respect of all the items of work shall not exceed the Contract Price, as may be adjusted in accordance with the provisions of this Agreement.
- (v) The Contractor shall appoint a safety consultant (the "Safety Consultant") to carry out a safety audit at the design stage of the Project Highway in accordance with the Applicable Laws and Good Industry Practice. The Safety Consultant shall be appointed after proposing to the Authority a panel of three (3) names of qualified and experienced firms from which the Authority may choose one (1) to be the Safety Consultant. Provided, however, that if the panel is not acceptable to the Authority and the reasons for the same are furnished to the Contractor, the Contractor shall propose to the Authority a revised panel of three (3) names from the firms empanelled as safety consultants by the [Ministry of Road Transport and Highways] for obtaining the consent of the Authority. The Contractor shall also obtain the consent of the Authority for the key personnel of the Safety Consultant who shall have adequate experience and qualifications in safety audit of the highway projects. The Authority shall, within 15 (fifteen) days of receiving a proposal from the Contractor hereunder, convey its decision, with reasons, to the Contractor, and if no such decision is conveyed within the said period, the Contractor may proceed with engaging of the Safety Consultant.
- (vi) The safety audit pursuant to Clause 10.1 (v) shall be carried out by the Safety Consultant in respect of all such design details that have a bearing on safety of Users as well as pedestrians and animals involved in or associated with accidents. The recommendations of the Safety Consultant shall be incorporated in the design of the Project Highway and the Contractor shall forward to the Authority's Engineer a certificate to this effect together with the recommendations of the Safety Consultant. In the event that any works required by the Safety Consultant shall fall beyond the scope of Schedule-B, Schedule-C or Schedule-D, the Contractor shall make a report thereon and seek the instructions of the Authority for Change in Scope. For the avoidance of doubt, the Safety Consultant to be engaged by the Contractor shall be independent of the design and implementation team of the Contractor.

## **10.2 Design and Drawings**

- (i) Design and Drawings shall be developed in conformity with the Specifications and Standards set forth in Schedule-D. In the event, the Contractor requires any relaxation in design standards due to restricted Right of Way in any section, the alternative design criteria for such section shall be provided for review and approval of the Authority's Engineer.

- (ii) The Contractor shall appoint a proof check consultant (the “Proof Consultant”) after proposing to the Authority a panel of three (3) names of qualified and experienced firms from whom the Authority may choose one (1) to be the Proof Consultant. Provided, however, that if the panel is not acceptable to the Authority and the reasons for the same are furnished to the Contractor, the Contractor shall propose to the Authority a revised panel of three (3) names from the firms empanelled as proof consultants by the [Ministry of Road Transport and Highways] for obtaining the consent of the Authority. The Contractor shall also obtain the consent of the Authority for two (2) key personnel of the Proof Consultant who shall have adequate experience and qualifications in highways and bridges respectively. The Authority shall, within 15 (fifteen) days of receiving a proposal from the Contractor hereunder, convey its decision, with reasons, to the Contractor, and if no such decision is conveyed within the said period, the Contractor may proceed with engaging of the Proof Consultant.
- (iii) The Proof Consultant shall:
- (a) evolve a systems approach with the Design Director so as to minimise the time required for final designs and construction drawings; and
  - (b) proof check the detailed calculations, drawings and designs, which have been approved by the Design Director.
- (iv) In respect of the Contractor’s obligations with respect to the design and Drawings of the Project Highway as set forth in Schedule-I, the following shall apply:
- (a) The Contractor shall prepare and submit, with reasonable promptness and in such sequence as is consistent with the Project Completion Schedule, three (3) copies each of the design and Drawings, duly certified by the Proof Consultant, to the Authority’s Engineer for its approval. Provided, however, that in respect of Major Bridges and Structures, the Authority’s Engineer may require additional drawings for approval in accordance with Good Industry Practice.
  - (b) by submitting the Drawings for review and approval to the Authority’s Engineer, the Contractor shall be deemed to have represented that it has determined and verified that the design and engineering, including field construction criteria related thereto, are in conformity with the Scope of the Project, the Specifications and Standards and the Applicable Laws;
  - (c) within 15 (fifteen) days of the receipt of the Drawings, the Authority’s Engineer shall review the same and convey its approval/observations to the Contractor with particular reference to their conformity or otherwise with the Scope of the Project and the Specifications and Standards. Provided, however that in case of a major bridge or structure, the aforesaid period of 15 (fifteen) days may be extended up to 30 (thirty) days;
  - (d) if the aforesaid observations of the Authority’s Engineer indicate that the Drawings are not in conformity with the Scope of the Project or the Specifications and Standards, such Drawings shall be revised by the Contractor in conformity with the provisions of this Agreement and resubmitted to the Authority’s Engineer for review and approval. The

Authority's Engineer shall give its observations, if any, within 10 (ten) days of receipt of the revised Drawings. In the event the Contractor fails to revise and resubmit such Drawings to the Authority's Engineer for review/approval as aforesaid, the Authority's Engineer may withhold the payment for the affected works in accordance with the provisions of Clause 19.5 (iv). If the Contractor disputes any decision, direction or determination of the Authority's Engineer hereunder, the Dispute shall be resolved in accordance with the Dispute Resolution Procedure;

- (e) no review/approval and/or observation of the Authority's Engineer and/or its failure to review/approval and/or convey its observations on any Drawings shall relieve the Contractor of its obligations and liabilities under this Agreement in any manner nor shall the Authority's Engineer or the Authority be liable for the same in any manner; and if errors, omissions, ambiguities, inconsistencies, inadequacies or other Defects are found in the Drawings, they and the construction works shall be corrected at the Contractor's cost, notwithstanding any approval under this Article 10;
- (f) the Contractor shall be responsible for delays in submitting the Drawing as set forth in Schedule-I caused by reason of delays in surveys and field investigations, and shall not be entitled to seek any relief in that regard from the Authority; and
- (g) the Contractor warrants that its designers, including any third parties engaged by it, shall have the required experience and capability in accordance with Good Industry Practice and it shall indemnify the Authority against any damage, expense, liability, loss or claim, which the Authority might incur, sustain or be subject to arising from any breach of the Contractor's design responsibility and/or warranty set out in this Clause.
- (h) the Contractor shall ensure that all the designs and drawings shall be approved from the Authority's Engineer within 90 days (ninety) from the Appointed Date.
- (v) Any cost or delay in construction arising from review/approval by the Authority's Engineer shall be borne by the Contractor.
- (vi) Works shall be executed in accordance with the Drawings provided by the Contractor in accordance with the provisions of this Clause 10.2 and the approval of the Authority's Engineer thereon as communicated pursuant to the provisions of sub- Clause (c) & (d) of Clause 10.2 (iv). Such Drawings shall not be amended or altered without prior written notice to the Authority's Engineer. If a Party becomes aware of an error or defect of a technical nature in the design or Drawings, that Party shall promptly give notice to the other Party of such error or defect.
- (vii) Within 90 (ninety) days of the Project Completion Date, the Contractor shall furnish to the Authority and the Authority's Engineer a complete set of as- built Drawings, in 2 (two) hard copies and in micro film form or in such other medium as may be acceptable to the Authority, reflecting the Project Highway as actually designed,

engineered and constructed, including an as-built survey illustrating the layout of the Project Highway and setback lines, if any, of the buildings and structures forming part of Project Facilities.

### 10.3 Construction of the Project Highway

- (i) The Contractor shall construct the Project Highway as specified in Schedule- B and Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works. The [1095th (One Thousand and Ninety-Fifth day)] from the Appointed Date shall be the scheduled completion date (the “Scheduled Completion Date”) and the Contractor agrees and undertakes that the construction shall be completed on or before the Scheduled Completion Date, including any extension thereof.
- (ii) The Contractor shall construct the Project Highway in accordance with the Project Completion Schedule set forth in Schedule-J. In the event that the Contractor fails to achieve any Project Milestone or the Scheduled Completion Date within a period of 30 (thirty) days from the date set forth in Schedule-J, unless such failure has occurred due to Force Majeure or for reasons solely attributable to the Authority, it shall pay Damages to the Authority of a sum calculated at the rate of 0.05% (zero point zero five percent) of the Contract Price for delay of each day reckoned from the date specified in Schedule -J and until such Project Milestone is achieved or the Project Highway is completed; provided that if the period for any or all Project Milestones or the Scheduled Completion Date is extended in accordance with the provisions of this Agreement, the dates set forth in Schedule-J shall be deemed to be modified accordingly and the provisions of this Agreement shall apply as if Schedule-J has been amended as above; provided further that in the event the Project Highway is completed within or before the Scheduled Completion Date including any Time Extension, applicable for that work or section, the Damages paid under this Clause 10.3 (ii) shall be refunded by the Authority to the Contractor, but without any interest thereon.

The Parties agree that for determining achievement or delays in completion of the Project Milestones or the Project on the due date, the works affected due to delay in providing the site for which time extension has been granted beyond the Scheduled Completion Date will be excluded. For example on the due date to achieve the Project Milestone-I (i.e., Stage Payments of 10% (ten percent) of Contract Price on 180th (one hundred and eighty) day from the Appointed Date), if 5% (five percent) of the project length corresponding to the Project Milestone-I is not handed over or lately handed over resulting in the extension of completion of this 5% (five percent) length beyond Scheduled Completion Date, Stage Payment of  $10\% \times 0.95 = 9.5\%$  only is to be achieved by 180th (one hundred and eighty) day.

For the avoidance of doubt, it is agreed that recovery of Damages under this Clause 10.3 (ii) shall be without prejudice to the rights of the Authority under this Agreement including the right of Termination thereof. The Parties further agree that Time

Extension hereunder shall only be reckoned for and in respect of the affected Works as specified in Clause 10.5 (ii).

- (iii) The Authority shall notify the Contractor of its decision to impose Damages in pursuance with the provisions of this Clause 10.3. Provided that no deduction on account of Damages shall be effected by the Authority without notifying the Contractor of its decision to impose the Damages, and taking into consideration the representation, if any, made by the Contractor within 20 (twenty) days of such notice. The Parties expressly agree that the total amount of Damages under Clause 10.3 (ii) shall not exceed 10% (ten percent) of the Contract Price. If the damages exceed 10% (ten percent) of the Contract Price, the Contractor shall be deemed to be in default of this agreement having no cure and the Authority shall be entitled to terminate this Agreement by issuing a Termination Notice in accordance with the provisions of Clause 23.1 (ii).
- (iv) In the event that the Contractor fails to achieve the Project Completion within a period of 90 (ninety) days from the Schedule Completion Date set forth in Schedule-J, unless such failure has occurred due to Force Majeure or for reasons solely attributable to the Authority, the contractor shall be deemed to be ineligible for bidding any future projects of the Authority, both as the sole party or as one of the parties of Joint Venture/ Consortium during the period from Scheduled Completion Date to issuance of Completion Certificate. This restriction is applicable if the contract value of the delayed project is not less than Rs. 300 Crore.

#### **10.4 Maintenance during Construction Period**

- (i) During the Construction Period, the Contractor shall maintain, at its cost, the existing lane(s) of the Project Highway so that the traffic worthiness and safety thereof are at no time materially inferior as compared to their condition on Appointed Date, and shall undertake the necessary repair and maintenance works for this purpose; provided that the Contractor may, at its cost, interrupt and divert the flow of traffic if such interruption and diversion is necessary for the efficient progress of Works and conforms to Good Industry Practice; provided further that such interruption and Diversion shall be undertaken by the Contractor only with the prior written approval of the Authority's Engineer which approval shall not be unreasonably withheld. For the avoidance of doubt, it is agreed that the Contractor shall at all times be responsible for ensuring safe operation of the Project Highway. It is further agreed that in the event the Project includes construction of a bypass or tunnel and realignment of the existing carriageway, the Contractor shall maintain the existing highway in such sections until the new Works are open to traffic.
- (ii) Notwithstanding anything to the contrary contained in this Agreement, in the event of default by the Contractor in discharging the obligations specified in Clause 10.4 (i) above, the Authority shall get these maintenance works completed in the manner recommended by the Authority's Engineer to avoid public inconvenience at the risk and cost of the Contractor in order to keep the road in traffic worthy condition.

#### **10.5 Extension of time for completion**

- (i) Without prejudice to any other provision of this Agreement for and in respect of extension of time, the Contractor shall be entitled to extension of time in the Project Completion Schedule (the "Time Extension") to the extent that completion of any Project Milestone is or will be delayed by any of the following, namely:
- (a) delay in providing the Right of Way of Construction Zone, environmental clearances or approval of railway authorities, specified in Clause 3.1 (iv);
  - (b) Change of Scope (unless an adjustment to the Scheduled Completion Date has been agreed under Article 13);
  - (c) occurrence of a Force Majeure Event;
  - (d) any delay, impediment or prevention caused by or attributable to the Authority, the Authority's personnel or the Authority's other contractors on the Site; and
  - (e) any other cause or delay which entitles the Contractor to Time Extension in accordance with the provisions of this Agreement.
- (ii) The Contractor shall, no later than 15 (fifteen) business days from the occurrence of an event or circumstance specified in Clause 10.5 (i), inform the Authority's Engineer by notice in writing, with a copy to the Authority, stating in reasonable detail with supporting particulars, the event or circumstances giving rise to the claim for Time Extension in accordance with the provisions of this Agreement. Provided that the period of 15 (fifteen) business days shall be calculated from the date on which the Contractor became aware, or should have become aware, of the occurrence of such an event or circumstance.
- Provided further that notwithstanding anything to the contrary contained in this Agreement, Time Extension shall be due and applicable only for the Works which are affected by the aforesaid events or circumstances and shall not in any manner affect the Project Completion Schedule for and in respect of the Works which are not affected hereunder.
- (iii) On the failure of the Contractor to issue to the Authority's Engineer a notice in accordance with the provisions of Clause 10.5 (ii) within the time specified therein, the Contractor shall not be entitled to any Time Extension and shall forfeit its right for any such claims in future. For the avoidance of doubt, in the event of failure of the Contractor to issue notice as specified in this clause 10.5 (iii), the Authority shall be discharged from all liability in connection with the claim.
- (iv) The Authority's Engineer shall, on receipt of the claim in accordance with the provisions of Clause 10.5 (ii), examine the claim expeditiously within the time frame specified herein. In the event the Authority's Engineer requires any clarifications to examine the claim, the Authority's Engineer shall seek the same within 15 (fifteen) days from the date of receiving the claim. The Contractor shall, on receipt of the communication of the Authority's Engineer requesting for clarification, furnish the same to the Authority's Engineer within 10 (ten) days thereof. The Authority's Engineer shall, within a period of 30 (thirty) days from the date of receipt of such clarifications, forward in writing to the Contractor its determination of Time Extension.

Provided that when determining each extension of time under this Clause 10.5, the Authority's Engineer shall review previous determinations and may increase, but shall not decrease, the total Time Extension.

- (v) If the event or circumstance giving rise to the notice has a continuing effect:
  - (a) a fully detailed claim shall be considered as interim;
  - (b) the Contractor shall, no later than 10 (ten) days after the close of each month, send further interim claims specifying the accumulated delay, the extension of time claimed, and such further particulars as the Authority's Engineer may reasonably require; and
  - (c) the Contractor shall send a final claim within 30 (thirty) days after the effect of the event or the circumstance ceases.

Upon receipt of the claim hereunder, the Authority's Engineer shall examine the same in accordance with the provisions of Clause 10.5 (iv) within a period of 30 (thirty) days of the receipt thereof

#### **10.6 Incomplete Works**

In the event the Contractor fails to complete the Works in accordance with the Project Completion Schedule, including any Time Extension granted under this Agreement, the Contractor shall endeavor to complete the balance work expeditiously and shall pay Damages to the Authority in accordance with the provisions of Clause 10.3 (ii) for delay of each day until the Works are completed in accordance with the provisions of this Agreement. Recovery of Damages under this Clause shall be without prejudice to the rights of the Authority under this Agreement including the right to termination under Clause 23.1.

#### **10.7 Maintenance Manual**

No later than 60 (sixty) days prior to the Project Completion Date, the Contractor shall, in consultation with the Authority's Engineer, evolve a maintenance manual (the "Maintenance Manual") for the regular and preventive maintenance of the Project Highway in conformity with the Specifications and Standards, safety requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority's Engineer. The Authority's Engineer shall review the Maintenance Manual within 15 (fifteen) days of its receipt and communicate its comments to the Contractor for necessary modifications, if any.

#### **10.8 As-Built Records**

The Contractor shall prepare, and keep up-to-date, a complete set of as built records of the execution of the Works, showing the exact as built locations, sizes and details on the Works as executed with cross references to all relevant specifications and data sheets. These records shall be kept on the Site and shall be used exclusively for the purpose of this Sub-Clause 10.8. The Contractor shall provide 2 (two) copies of as built records to the Authority prior to the commencement of the Tests on Completion.

#### **10.9 Contractor's Use of Authority's Documents**

Intellectual property in the Authority's requirements and Specifications and Standards and all other documents and materials issued by the Authority or the Authority's Representative to the Contractor shall (as between the parties) remain the property of the Authority. The

Contractor may, at its cost, copy, use and communicate any such documents for the purposes of the Contract. They shall not, without the consent of the Authority, be used, copied or communicated to a third party by the Contractor, except as necessary for the purposes of the Works under the Agreement.

## **Article 11**

### **Quality Assurance, Monitoring and Supervision**

#### **11.1 Quality of Materials and workmanship**

The Contractor shall ensure that the Construction, Materials and workmanship are in accordance with the requirements specified in this Agreement, Specifications and Standards and Good Industry Practice.

#### **11.2 Quality control system**

- (i) The Contractor shall establish a quality control mechanism to ensure compliance with the provisions of this Agreement (the “Quality Assurance Plan” or “QAP”).
- (ii) The Contractor shall, within 30 (thirty) days of the Appointed Date, submit to the Authority’s Engineer its Quality Assurance Plan which shall include the following:
  - (a) organisation, duties and responsibilities, procedures, inspections and documentation;
  - (b) quality control mechanism including sampling and testing of Materials, test frequencies, standards, acceptance criteria, testing facilities, reporting, recording and interpretation of test results, approvals, check list for site activities, and proforma for testing and calibration in accordance with the Specifications for Road and Bridge Works issued by MORTH, relevant IRC specifications and Good Industry Practice; and
  - (c) internal quality audit system.

The Authority’s Engineer shall convey its approval to the Contractor within a period of 21 (twenty-one) days of receipt of the QAP stating the modifications, if any, required, and the Contractor shall incorporate those in the QAP to the extent required for conforming with the provisions of this Clause 11.2.

- (iii) The Contractor shall procure all documents, apparatus and instruments, fuel, consumables, water, electricity, labour, Materials, samples, and qualified personnel as are necessary for examining and testing the Project Assets and workmanship in accordance with the Quality Assurance Plan.
- (iv) The cost of testing of Construction, Materials and workmanship under this Article 11 shall be borne by the Contractor.

#### **11.3 Methodology**

The Contractor shall, at least 15 (fifteen) days prior to the commencement of the construction, submit to the Authority’s Engineer for review and consent the methodology proposed to be adopted for executing the Works, giving details of equipment to be deployed, traffic management and measures for ensuring safety. The Authority’s Engineer shall complete the review and convey its consent to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.

#### **11.4 Inspection and technical audit by the Authority**

The Authority or any representative authorised by the Authority in this behalf may inspect and review the progress and quality of the construction of Project Highway and issue appropriate directions to the Authority's Engineer and the Contractor for taking remedial action in the event the Works are not in accordance with the provisions of this Agreement.

### **11.5 External technical audit**

- (i) At any time during construction, the Authority may appoint an external technical auditor to conduct an audit of the quality of the Works. The Auditor in the presence of the representatives of the Contractor and the Authority's Engineer shall carry out the tests and/ or collect samples for testing in the laboratory. The timing, the testing equipment and the sample size of this audit shall be as decided by the Authority. The findings of the audit, to the extent accepted by the Authority, shall be notified to the Contractor and the Authority's Engineer for taking remedial action in accordance with this Agreement.
- (ii) After completion of the remedial measures by the Contractor, the Auditor shall undertake a closure audit and this process will continue till the remedial measures have brought the works into compliance with the Specifications and Standards. The Contractor shall provide all assistance as may be required by the auditor in the conduct of its audit hereunder. Notwithstanding anything contained in this Clause 11.5, the external technical audit shall not affect any obligations of the Contractor or the Authority's Engineer under this Agreement.

### **11.6 Inspection of construction records**

The Authority shall have the right to inspect the records of the Contractor relating to the Works.

### **11.7 Monthly progress reports**

During the Construction Period, the Contractor shall, no later than 10 (ten) days after the close of each month, furnish to the Authority and the Authority's Engineer a monthly report on progress of the Works and shall promptly give such other relevant information as may be required by the Authority's Engineer.

The Contractor agrees that reporting under this Clause 11.7 shall continue until the date of the completion of the Works. Each report shall include:

- (a) an executive summary;
- (b) charts showing the status of Contractor's documents, construction and manufacturing and environmental works;
- (c) details of work subcontracted and the performance of Sub-contractors;
- (d) for the construction of each main part of the Works, the extent of progress (both quantity and percentage of the whole), the actual or expected dates of commencement, anticipated completion date of the activity, Contractor's inspections and tests;
- (e) records of manpower and Contractor's equipment on the Site; along with a detailed report indicating the locations and movements of all construction vehicles by way of

installing a functional global positioning system (GPS) in each vehicle , which shall include, but not limited to the following informations

- i. Real time location data of each construction vehicle
- ii. Timestamps indicating the start and end times of vehicle movements
- iii. Milage coverage by eac h vehicle.

The Contractor shall be responsible for ensuring the accuracy and integrity of the GPS tracking data

- (f) copies for that month of quality assurance documents, test results and certificates;
- (g) safety statistics, accident data collection including details of any hazardous incidents and activities relating to environmental aspects and public relations;
- (h) comparisons of actual and planned progress, with details of any aspects which may jeopardise the completion in accordance with the Agreement, and the measures being (or to be) adopted to overcome such aspects;
- (i) details of any unresolved disputes or claims, in relation to the Project;
- (j) details of any revision to the cash flow estimate, together with a copy of the revised cash flow estimate;
- (k) status of various Applicable Permits and compliance of conditions therein;
- (l) details of various royalty payment and insurances required to be taken by the Contractor; and
- (m) such other reports as may be required by the Authority for enabling the Authority to comply with its obligations under the other Project contracts.
- (n) details of defects by the Authority;
- (o) change in emission of any sewage or effluent of any nature whatsoever, whether qualitatively or quantitatively;
- (p) any Material Adverse Effect;
- (q) declaration towards compliance with Applicable Laws including but not limited to environmental and labour legislations;
- (r) declaration specifying compliance with all Manuals provided to the Contractor; and
- (s) any change in the flow of traffic in the existing Project Highway.

### **11.8 Inspection**

- (i) The Authority's Engineer and its authorised representative shall at all reasonable times:
  - (a) have full access to all parts of the Site and to all places from which natural Materials are being obtained for use in the Works; and
  - (b) during production, manufacture and construction at the Site and at the place of production, be entitled to examine, inspect, measure and test the Materials and workmanship, and to check the progress of manufacture of Materials.

- (ii) The Contractor shall give the Authority's Engineer and its authorised agents access, facilities and safety equipment for carrying out their obligations under this Agreement.
- (iii) The Authority's Engineer shall submit a monthly inspection report (the "Inspection Report") to the Authority and the Contractor bringing out the results of inspections and the remedial action taken by the Contractor in respect of Defects or deficiencies. For the avoidance of doubt, such inspection or submission of Inspection Report by the Authority's Engineer shall not relieve or absolve the Contractor of its obligations and liabilities under this Agreement in any manner whatsoever.

### **11.9 Samples**

The Contractor shall submit the following samples of Materials and relevant information to the Authority's Engineer for pre-construction review:

- (a) manufacturer's test reports and standard samples of manufactured Materials; and
- (b) samples of such other Materials as the Authority's Engineer may require.

### **11.10 Tests**

- (i) For determining that the Works conform to the Specifications and Standards, the Authority's Engineer shall require the Contractor to carry out or cause to be carried out tests, at such time and frequency and in such manner as specified in this Agreement, and in accordance with Good Industry Practice for quality assurance. The test checks by the Authority's Engineer shall comprise at least 50% (fifty percent) of the quantity or number of tests prescribed for each category or type of test for quality control by the Contractor.
- (ii) In the event that results of any tests conducted under this Clause 11.10 establish any Defects or deficiencies in the Works, the Contractor shall carry out remedial measures and furnish a report to the Authority's Engineer in this behalf. The Authority's Engineer shall require the Contractor to carry out or cause to be carried out tests to determine that such remedial measures have brought the Works into compliance with the Specifications and Standards, and the procedure shall be repeated until such Works conform to the Specifications and Standards. For the avoidance of doubt, the cost of such tests and remedial measures in pursuance thereof shall be solely borne by the Contractor.

### **11.11 Examination of work before covering up**

In respect of the work which the Authority's Engineer is entitled to examine, inspect, measure and/or test before it is covered up or put out of view or any part of the work is placed thereon, the Contractor shall give notice to the Authority's Engineer whenever any such work is ready and before it is covered up. The Authority's Engineer shall then either carry out the examination, inspection or testing without unreasonable delay, or promptly give notice to the Contractor that the Authority's Engineer does not require to do so. Provided, however, that if any work is of a continuous nature where it is not possible or prudent to keep it uncovered or incomplete, the Contractor shall notify the schedule of carrying out such work to give sufficient opportunity, not being less than 3 (three) business days' notice, to the

Authority's Engineer to conduct its inspection, measurement or test while the work is continuing. Provided further that in the event the Contractor receives no response from the Authority's Engineer within a period of 3 (three) business days from the date on which the Contractor's notice hereunder is delivered to the Authority's Engineer, the Contractor shall be entitled to assume that the Authority's Engineer would not undertake the said inspection.

#### **11.12 Rejection**

If, as a result of an examination, inspection, measurement or testing, any Plant, Materials, design or workmanship is found to be defective or otherwise not in accordance with the provisions of this Agreement, the Authority's Engineer shall reject the Plant, Materials, design or workmanship by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the Defect and ensure that the rejected item complies with the requirements of this Agreement.

If the Authority's Engineer requires the Plant, Materials, design or workmanship to be retested, the tests shall be repeated under the same terms and conditions, as applicable in each case. If the rejection and retesting cause the Authority to incur any additional costs, such cost shall be recoverable by the Authority from the Contractor; and may be deducted by the Authority from any monies due to be paid to the Contractor.

#### **11.13 Remedial work**

- (i) Notwithstanding any previous test or certification, the Authority's Engineer may instruct the Contractor to:
  - (a) remove from the Site and replace any Plant or Materials which are not in accordance with the provisions of this Agreement;
  - (b) remove and re-execute any work which is not in accordance with the provisions of this Agreement and the Specification and Standards; and
  - (c) execute any work which is urgently required for the safety of the Project Highway, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 shall apply.
- (ii) If the Contractor fails to comply with the instructions issued by the Authority's Engineer under Clause 11.13 (i), within the time specified in the Authority's Engineer's notice or as mutually agreed, the Authority's Engineer may advise the Authority to have the work executed by another agency. The cost so incurred by the Authority for undertaking such work shall, without prejudice to the rights of the Authority to recover Damages in accordance with the provisions of this Agreement, be recoverable from the Contractor and may be deducted by the Authority from any monies due to be paid to the Contractor.

#### **11.14 Delays during construction**

Without prejudice to the provisions of Clause 10.3 (ii), in the event the Contractor does not achieve any of the Project Milestones or the Authority's Engineer shall have reasonably determined that the rate of progress of Works is such that Completion of the Project Highway is not likely to be achieved by the end of the Scheduled Completion Date, it shall notify the

same to the Contractor, and the Contractor shall, within 15 (fifteen) days of such notice, by a communication inform the Authority's Engineer in reasonable detail about the steps it proposes to take to expedite progress and the period within which it shall achieve the Project Completion Date.

### **11.15 Quality control records and Documents**

The Contractor shall hand over a copy of all its quality control records and documents to the Authority's Engineer before the Completion Certificate is issued pursuant to Clause 12.2. The Contractor shall submit Road Signage Plans to the Authority Engineer for approval at least 6 (six) months prior to expected completion of Project Highway.

### **11.16 Drone Video recording**

The Contractor shall carry out video recording of each project every month since award of the work till completion of construction and biannually during maintenance period.

Authority has finalised specifications/ methodology for video recording and identified zone-wise agencies and rates for the same. The Contractor may use these agencies so as to ensure uniformity in data collection. Recording shall have to be done in the presence of Team Leader of AE. Recording of previous videos and the current running side by side shall be loaded on Data Lake (<https://datalakeg.nhai.gov.in/nhai>) for easily capturing various developments during the month (a sample screenshot is attached herewith and also loaded on Data Lake along with a sample video for guidance) before submission of their invoice. Capturing Ortho-image for approx. 10% equivalent length of critical structures or any other specific area should be decided by the ROs/PDs and be conveyed to the Drone Agency in the site-specific work order. Authority Engineer shall ensure that the features and quality of drone video is acceptable and video is not distorted/ tampered with.

Authority Engineer shall analyse these drone videos and give their comments in its digital MPRs covering inter-alia but not limited to the encumbrances/lands not available, Yes of COS demands, progress of project, mobilisation of plant & equipments rehabilitation of camp site, progress on rectification of NCRs etc. along with the proposed action plan.

Project Director of NHAI shall cross-check drone videos during the monthly physical inspections and notify the discrepancies noticed, if any, between drone video on Authority Engineer comments and ground reality. The discrepancies shall be examined and addressed through joint site inspections.

As per the policy, the Network Survey Vehicle (NSV) survey needs to be carried out twice in a year on completed project. Therefore, PDs should plan biannually drone based video recording during Maintenance period in such a manner so that there is no overlap and digital data of Maintenance period is available in regular intervals (quarterly) through NSV and drone videography.

As the drone videos/ report will be permanent record on Data Lake and will be used as evidences during dispute resolution process before Arbitral Tribunals/ Court including Supreme Court, the drone video shall be carried out carefully and correctly without distortions/ tampering by all the parties concerned. The amount spent on recording shall be charged to Contractor to the extent covered in the agreement, (for detail refer Annexure -1)

### **11.17 Suspension of unsafe Construction Works**

- (i) Upon recommendation of the Authority's Engineer to this effect, the Authority may by notice require the Contractor to suspend forthwith the whole or any part of the Works

if, in the reasonable opinion of the Authority's Engineer, such work threatens the safety of the Users and pedestrians.

- (ii) The Contractor shall, pursuant to the notice under Clause 11.17 (i), suspend the Works or any part thereof for such time and in such manner as may be specified by the Authority and thereupon carry out remedial measures to secure the safety of suspended works, the Users and pedestrians. The Contractor may by notice require the Authority's Engineer to inspect such remedial measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked. Upon receiving the recommendations of the Authority's Engineer, the Authority shall either revoke such suspension or instruct the Contractor to carry out such other and further remedial measures as may be necessary in the reasonable opinion of the Authority, and the procedure set forth in this Clause 11.17 shall be repeated until the suspension hereunder is revoked.
- (iii) Subject to the provisions of Clause 21.6, all reasonable costs incurred for maintaining and protecting the Works or part thereof during the period of suspension (the "Preservation Costs"), shall be borne by the Contractor; provided that if the suspension has occurred as a result of any breach of this Agreement by the Authority, the Preservation Costs shall be borne by the Authority.
- (iv) If suspension of Works is for reasons not attributable to the Contractor, the Authority's Engineer shall determine any Time Extension to which the Contractor is reasonably entitled.

#### **11.18 Staff and Labour**

- (i) Engagement of Staff and Labour
  - (a) The Contractor shall make its own arrangements for the engagement of all personnel and labour, local or otherwise, and for their payment, housing, feeding and transport.
  - (b) The Contractor has verified/ shall verify the identity and address of all its employees and officials related to the Works by collecting necessary documentary proof.
  - (c) The Contractor shall seek a self-declaration from its employees that they have not been convicted of any criminal offence by any court and if any criminal proceedings/charge-sheets have been pending/filed against them. The Contractor shall not employ persons with criminal track record on the project. In cases where it comes to notice later that the employee concerned has concealed any such fact in his self-declaration or commits a criminal offence during the course of his employment, the Contractor shall remove such person from the project
  - (d) Deleted.
  - (e) The employees and personnel of the Contractor shall work under the supervision, control and direction of the Contractor and the Contractor shall be solely responsible for all negotiations with its employees and personnel relating to

their salaries and benefits, and shall be responsible for assessments and monitoring of performance and for all disciplinary matters. All employees / personnel, executives engaged by the Contractor shall be in sole employment of the Contractor and the Contractor shall be solely responsible for their salaries, wages, statutory payments, etc and under no circumstances the personnel shall be deemed to be the employees of the Authority. Under no circumstances the Authority shall be liable for any

payment or claim or compensation of any nature to the employees and personnel of the Contractor.

(ii) Returns of Labour

- (a) The Contractor shall deliver to the Authority a detailed return in such form and at such intervals as the Authority may prescribe, showing the details including names, payment details and terms of appointment of the several classes of labour employed by the Contractor from time to time for the Works. The Contractor shall, in its returns certify that all dues of the workers or labour have been fully paid.
- (b) The Authority is entitled to witness labour payments made or to be made by the Contractor. If the Contractor defaults in its obligations for making any payments under the labour laws, the Employer may make the relevant payments. Any sum equal to any amount paid by the Employer under this Sub-Sub-Clause 9.2 shall be immediately due as a debt from the Contractor to the Employer and until payment/ set off shall carry interest at 18% per annum. For this purpose it is agreed between the parties that debt due aforesaid shall be set off immediately out the running account bills of the Contractor under this Agreement.

(iii) Persons in the Service of Others

The Contractor shall not recruit, or attempt to recruit from amongst persons in the service of the Authority.

(iv) Labour Laws

- (a) The Contractor shall obtain all relevant labour registrations and comply with all relevant labour laws applying to its employees, and shall duly pay them and afford to them all their legal rights.
- (b) The Contractor shall make all deductions of tax at source and all contributions to the Payment of Gratuity, Provident Fund (including Employees' contribution) and Employees' State Insurance Scheme as may be required by Applicable Laws and deposit the aforesaid contributed amount with the appropriate authority/(s).
- (c) The Contractor shall require all personnel engaged in the Works to obey all Applicable Laws and regulations. The Contractor shall permit Authority to witness labour payments for the Contractors direct labour, or the Subcontractors labour. The Contractor shall ensure that all its Subcontractors strictly comply with all labour laws.

(d) Documentary evidence confirming compliance with Sub-Clause 12.4, as may be required from time to time, shall be provided to the Employer's Representative.

(e) The Employer shall not be liable for any delay/default of the Contractor in compliance of the labour laws.

(v) Facilities for Staff and Labour

The Contractor shall provide and maintain all necessary accommodation and welfare facilities for personnel engaged for the Works. The Contractor shall not permit any personnel engaged for the Works to maintain any temporary or permanent living quarters within the structures forming part of the Works.

(vi) Health And Safety

All necessary precautions shall be taken by the Contractor to ensure the health and safety of staff and labour engaged for the Works. The Contractor shall, in collaboration with and to the requirements of the local health authorities, ensure that para-medical staff, first aid facilities, ambulance service are available on the Site at all times, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics. The Contractor shall appoint a safety officer to be responsible for the safety of personnel on the Site. This safety officer shall be qualified for his work and shall have the authority to issue instructions concerning safety and take protective measures to prevent accidents. The Contractor shall maintain records and make reports concerning health, safety and welfare of personnel, and damage to property, in such manner as the Authority may reasonably require.

(vii) Contractor's Personnel

The Contractor shall employ only personnel who are appropriately qualified, skilled and experienced in their respective trades or occupations. The Authority may require the Contractor to remove any personnel engaged for the Works, who in the opinion of the Authority:

(a) has engaged in any misconduct;

(b) is incompetent or negligent in the performance of his duties; (c) fails to conform with any provisions of the Contract;

(d) engages in any conduct which is prejudicial to safety, health, or the protection of the environment; or

(e) makes errors in the discharge of his functions. If appropriate and required by the Employer, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.

(viii) Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst its personnel, and to preserve peace and protection of people and property in the neighbourhood of the Works.

## **Article 12**

### **Completion Certificate**

#### **12.1 Tests on Completion**

- (i) At least 30 (thirty) days prior to the likely completion of the Project Highway, or a Section thereof, the Contractor shall notify the Authority's Engineer of its intent to subject the Project Highway or a Section thereof, to Tests. The date and time of each of the Tests shall be determined by the Authority's Engineer in consultation with the Contractor, and notified to the Authority who may designate its representative to witness the Tests. The Contractor shall either conduct the Tests as directed by the Authority's Engineer or provide such assistance as the Authority's Engineer may reasonably require for conducting the Tests. In the event of the Contractor and the Authority's Engineer failing to mutually agree on the dates for conducting the Tests, the Contractor shall fix the dates by giving not less than 10 (ten) days' notice to the Authority's Engineer.
- (ii) All Tests shall be conducted in accordance with Schedule-K. The Authority's Engineer shall either conduct or observe, monitor and review the Tests conducted by the Contractor, as the case may be, and review the results of the Tests to determine compliance of the Project Highway or a Section thereof, with Specifications and Standards and if it is reasonably anticipated or determined by the Authority's Engineer during the course of any Test that the performance of the Project Highway or Section or any part thereof, does not meet the Specifications and Standards, it shall have the right to suspend or delay such Test and require the Contractor to remedy and rectify the Defect or deficiencies. Upon completion of each Test, the Authority's Engineer shall provide to the Contractor and the Authority copies of all Test data including detailed Test results. For the avoidance of doubt, it is expressly agreed that the Authority's Engineer may require the Contractor to carry out or cause to be carried out additional Tests, in accordance with Good Industry Practice, for determining the compliance of the Project Highway or Section thereof with the Specifications and Standards.

#### **12.2 Completion Certificate**

- (i) Upon completion of all Works forming part of the Project Highway, and the Authority's Engineer determining the Tests to be successful and after the receipt of notarized true copies of the certificate(s) of insurance, copies of insurance policies and premium payment receipts in respect of the insurance defined in Article 20 and Schedule P of this Agreement, it shall, at the request of the Contractor forthwith issue to the Contractor and the Authority a certificate substantially in the form set forth in Schedule-L (the "Completion Certificate").
- (ii) Upon receiving the Completion Certificate, the Contractor shall remove its equipment, materials, debris and temporary works from the Site within a period of 30 (thirty) days thereof, failing which the Authority may remove or cause to be removed, such equipment, materials, debris and temporary works and recover from the Contractor an amount equal to 120% (one hundred and twenty per cent) of the actual cost of removal incurred by the Authority.

- (iii) Without prejudice to the obligations of the Contractor specified in Articles 14 and 17, the property and ownership of all the completed Works forming part of the Project Highway shall vest in the Authority.
- (iv) The Completion Certificate shall be issued after 100% Physical completion (including utility shifting). The 100% financial progress shall be achieved after payment from IMS.

### **12.3 Rescheduling of Tests**

If the Authority's Engineer certifies to the Authority and the Contractor that it is unable to issue the Completion Certificate, as the case may be, because of events or circumstances on account of which the Tests could not be held or had to be suspended, the Contractor shall be entitled to re-schedule the Tests and hold the same as soon as reasonably practicable

## Article 13

### Change of Scope

#### 13.1 Change of Scope

- (i) The Authority may, notwithstanding anything to the contrary contained in this Agreement, require the Contractor to make modifications/ alterations to the Works ("Change of Scope") within a period of six months counted from the Appointed Date. Upon the Authority making its intention known to the Contractor for the specific Change of Scope, be it positive or negative, the Contractor shall submit his proposal for the said Change of Scope involving additional cost or reduction in cost. Any such Change of Scope shall be made and valued in accordance with the provisions of this Article 13.
- (ii) Provided that any such Change of Scope, excluding major structures (e.g. Major Bridge/ ROB/ RUB/ Flyover/ elevated road of more than 50 m length) may be required and agreed to be executed between the parties beyond the period of six months of the Appointed Date but before expiry of 50% of the original Scheduled Construction Period of the Project Highway, subject to the condition that it shall not entail any claims (e.g. Extension of Time/ Prolongation related claims), against the Authority.
- (iii) The Change of Scope shall mean the following:
  - (a) change in specifications of any item of Works;
  - (b) omission of any work from the Scope of the Project except under Clause 8.3 (iii); provided that, subject to Clause 13.5, the Authority shall not omit any Work under this Clause in order to get it executed by any other authority; and / or
  - (c) any additional Work, Plant, Materials or services which are not included in the Scope of the Project, including any associated Tests on completion of construction.

#### 13.2 Procedure for Change of Scope

- (i) In the event of the Authority determining that a Change of Scope is necessary, it may direct the Authority's Engineer to issue to the Contractor a notice specifying in reasonable detail the Works and services contemplated thereunder (the "Change of Scope Notice"). The Contractor shall submit a detailed proposal as per Clause 13.2 (iii) within 15 days from the receipt of Change of Scope Notice.
- (ii) If the Contractor determines, not later than 90 days from the Appointed Date, that a Change of Scope to the Works is required, it shall prepare a proposal with relevant details as per Clause 13.2 (iii) at its own cost and shall submit to the Authority to consider such Change of Scope (the "Change of Scope Request").
- (iii) Upon receipt of a Change of Scope Notice, the Contractor shall, with due diligence, provide to the Authority and the Authority's Engineer such information as is necessary, together with detailed proposal in support of:

- (a) the impact, if any, which the Change of Scope is likely to have on the Project Completion Schedule if the works or services are required to be carried out during the Construction Period; and
- (b) the options for implementing the proposed Change of Scope and the effect, if any, each such option would have on the costs and time thereof, including the following details:
  - i. break-up of the quantities, unit rates and cost for different items of work; and
  - ii. proposed design for the Change of Scope;
  - iii. proposed modifications, if any, to the Project Completion Schedule of the Project Highway.

For the avoidance of doubt, the Parties expressly agree that, subject to the provisions of Clause 13.4 (ii), the Contract Price shall be increased or decreased, as the case may be, on account of any such Change of Scope.

- (iv) The parties agree that costs and time for implementation of the proposed Change of Scope shall be determined as per the following:

- (a) For works where Schedule of Rates (SOR) of concerned circle of State's Public Works Department are applicable at the Base Date are available, the same shall be applicable for determination of costs. In case of non-availability of Schedule of Rates at the Base Date, the available Schedule of Rates shall be applied by updating the same based on WPI. In case the Contract Price is lower/ higher than the Estimated Project Cost as per RFP, then the SOR rates shall be reduced/ increased in the same proportion accordingly.
- (b) For item of Works not included in Schedule of Rates as mentioned in sub-para (a) of Clause 13.2 (iv) above, the cost of same shall be derived on the basis of MORTH Standard Data Book and the Authority's Engineer shall determine the prevailing market rates and discount the same considering WPI to achieve the prevailing rate at the Base Date, and for any item in respect of which MORTH Standard Data Book does not provide the requisite details, the Authority's Engineer shall determine the rate in accordance with Good Industry Practice.

For the avoidance of doubt, in case the cost as determined by the Contractor and the Authority reveals a difference of more than 10% (ten per cent), the cost as determined by the Authority shall be considered as final and binding on the Contractor.

- (c) The design charges shall be considered only for new works or items (i.e. the Works or items not similar to the works or items in the original scope) @ 1% (one per cent) of cost of such new works or items.
- (d) The costs of existing works or items, which are being changed/ omitted shall also be valued as per above procedure and only net cost shall be considered.
- (e) The reasonable time for completion of works to be taken under Change of Scope shall be determined by the Authority's Engineer on the basis of Good Industry Practice and if such time exceeds the Scheduled Completion Date, the issue of Completion Certificate shall not be affected or delayed on account of

construction of Change of Scope items/ works remaining incomplete on the date of Tests.

- (v) Upon consideration of the detailed proposal submitted by the Contractor under the Clause 13.2 (iii), the Authority, within 15 (fifteen) days of receipt of such proposal, may in its sole discretion either accept such Change of Scope with modifications, if any, and initiate proceedings thereof in accordance with this Article 13 or reject the proposal and inform the Contractor of its decision and shall issue an order (the "Change of Scope Order") requiring the Contractor to proceed with the performance thereof.

For the avoidance of doubt, the Parties agree that the Contractor shall not undertake any Change of Scope without the express consent of the Authority, save and except any works necessary for meeting any Emergency, that too with verbal approval of Authority which shall be confirmed in writing in next 3 (three) days. In the event that the Parties are unable to agree, the Authority may:

- (a) issue a Change of Scope Order requiring the Contractor to proceed with the performance thereof at the rates and conditions approved by the Authority till the matter is resolved in accordance with Article 26;

or

- (b) proceed in accordance with Clause 13.5.

- (vi) The provisions of this Agreement, insofar as they relate to Works and Tests, shall apply mutatis mutandis to the Works undertaken by the Contractor under this Article 13.

### **13.3 Payment for Change of Scope**

Payment for Change of Scope shall be made in accordance with the payment schedule specified in the Change of Scope Order.

### **13.4 Restrictions on Change of Scope**

- (i) No Change of Scope shall be executed unless the Authority has issued the Change of Scope Order save and except any Works necessary for meeting any Emergency.
- (ii) The total value of all Change of Scope Orders shall not exceed 10% (ten per cent) of the Contract Price.
- (iii) Notwithstanding anything to the contrary in this Article 13, if any change is necessitated because of any default of the Contractor in the performance of its obligations under this Agreement, the same shall not be deemed to be Change of Scope, and shall not result in any adjustment of the Contract Price or the Project Completion Schedule.

### **13.5 Power of the Authority to undertake Works**

- (i) In the event the Parties are unable to agree to the proposed Change of Scope Orders in accordance with Clause 13.2, the Authority may, after giving notice to the Contractor and considering its reply thereto, award such Works or services to any person or agency on the basis of open competitive bidding. It is also agreed that the Contractor shall provide assistance and cooperation to the person or agency who undertakes the works or services hereunder. The Contractor shall not be responsible for rectification of any Defects, but the Contractor shall carry out maintenance of such works after

completion of Defect Liability Period of work by other person or agency during the remaining period of this agreement without any extra payment.

- (ii) The Works undertaken in accordance with this Clause 13.5 shall conform to the Specifications and Standards and shall be carried out in a manner that minimises the disruption in operation of the Project Highway. The provisions of this Agreement, insofar as they relate to Works and Tests, shall apply mutatis mutandis to the Works carried out under this Clause 13.5.

## Article 14

### Maintenance

#### 14.1 Maintenance obligations of the Contractor

- (i) The Contractor shall maintain the Project Highway for a period of 5 (five) years, corresponding to the Defects Liability Period, commencing from the date of the Completion Certificate (the "Maintenance Period"). For the performance of its Maintenance obligations, the Contractor shall be paid:
- (a) For flexible pavement with 5 years Maintenance Period including structures: no maintenance charges shall be paid for the first year; 0.50% of the Contract Price each for the second, third and fourth year; and 1% of the Contract Price for the fifth year
  - (b) For rigid pavement with 10 years Maintenance Period including structures: 0.25% of the Contract Price each for the first, second and third year, 0.5% of the Contract Price each for fourth, fifth, sixth and seventh year, and 0.75% of the Contract Price each for eighth, ninth and tenth year.
  - (c) For flexible perpetual pavement with 10 years maintenance period including structures: no maintenance charges shall be paid for the first year; 0.5% of the Contract Price each for the second, third and fourth year; 0.75% of the Contract Price each for the subsequent years till laying of the renewal layer or end of maintenance period, whichever is earlier. The requirement for the renewal layer shall be worked out based on the survey and investigation of the existing pavement and the cost of such renewal works shall be made separately to the Contractor based on the principles defined under clause 13.2(iii). After laying of the renewal layer, the Contractor shall be paid @ 0.5% of the original Contract Price each for the remaining years till the end of maintenance period.
  - (d) For stand-alone Bridge/ Tunnel works: the contractor shall be paid @ 0.25% of the Contract Price each for the first five years and @ 0.50% of the Contract Price each for the remaining period of five years.

Above amount for the performance of Contractors' Maintenance obligations shall be, inclusive of all taxes except goods and services tax which shall be paid extra. The amount payable for maintenance shall be adjusted to reflect any increase or decrease arising out of variation in WPI to be determined in accordance with the provisions of Clause 19.12. It is further agreed that the Contract Price hereunder shall be reckoned with reference to the amount specified in Clause 19.1 (i), which shall be adjusted to the extent of Change of Scope and the works withdrawn under the provisions of Clause 8.3 (iii), but shall not include any price adjustments in pursuance of Clause 19.10.

- (ii) During the Maintenance Period, the Authority shall provide to the Contractor access to the Site for Maintenance in accordance with this Agreement. The obligations of the Contractor hereunder shall include:
- (a) permitting safe, smooth and uninterrupted flow of traffic on the Project Highway;

- (b) undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices. For the avoidance of doubt, the electricity charges for operation of electrical infrastructure installed along the project length, except the infrastructure being used by the Contractor for its own use, shall be borne by the Authority;
  - (c) undertaking repairs to structures;
  - (d) informing the Authority of any unauthorised use of the Project Highway;
  - (e) informing the Authority of any encroachments on the Project Highway; and
  - (f) operation and maintenance of all communication, patrolling, and administrative systems necessary for the efficient maintenance of the Project Highway in accordance with the provisions of this Agreement.
- (iii) In respect of any Defect or deficiency not specified in Schedule-E, the Contractor shall, at its own cost, undertake repair or rectification in accordance with Good Industry Practice, save and except to the extent that such Defect or deficiency shall have arisen on account of any wilful default or neglect of the Authority or a Force Majeure Event.
- (iv) The Contractor shall remove promptly from the Project Highway any waste materials (including hazardous materials and waste water), rubbish and other debris (including, without limitation, accident debris) and keep the Project Highway in a clean, tidy and orderly condition, and in conformity with the Applicable Laws, Applicable Permits and Good Industry Practice.

## **14.2 Maintenance Requirements**

The Contractor shall ensure and procure that at all times during the Maintenance Period, the Project Highway conforms to the maintenance requirements set forth in Schedule-E (the "Maintenance Requirements").

## **14.3 Maintenance Programme**

- (i) The Contractor shall prepare a monthly maintenance programme (the "Maintenance Programme") in consultation with the Authority's Engineer and submit the same to the Authority's Engineer not later than 10 (ten) days prior to the commencement of the month in which the Maintenance is to be carried out. For this purpose a joint monthly inspection by the Contractor and the Authority's Engineer shall be undertaken. The Maintenance Programme shall contain the following:
  - (a) The condition of the road in the format prescribed by the Authority's Engineer;
  - (b) the proposed maintenance Works; and
  - (c) deployment of resources for maintenance Works.

## **14.4 Safety, vehicle breakdowns and accidents**

- (i) The Contractor shall ensure safe conditions for the Users, and in the event of unsafe conditions, lane closures, diversions, vehicle breakdowns and accidents, it shall follow the relevant operating procedures for removal of obstruction and debris without delay.

Such procedures shall conform to the provisions of this Agreement, Applicable Laws, Applicable Permits and Good Industry Practice.

- (ii) The Contractor shall maintain and operate a round-the-clock vehicle rescue post with 1 (one) mobile crane having the capacity to lift a truck with a Gross Vehicle Weight of 30,000 (thirty thousand) kilograms; and such post shall be located at location finalized in consultation with Authority. The Contractor shall promptly remove any damaged vehicles and debris from the Project Highway to enable safe movement of traffic and shall report all accidents to the police forthwith.

#### **14.5 Lane closure**

- (i) The Contractor shall not close any lane of the Project Highway for undertaking maintenance works except with the prior written approval of the Authority's Engineer. Such approval shall be sought by the Contractor through a written request to be made at least 10 (ten) days before the proposed closure of lane and shall be accompanied by particulars thereof. Within 5 (five) business days of receiving such request, the Authority's Engineer shall grant permission with such modifications as it may deem necessary and a copy of such permission shall be sent to the Authority.
- (ii) Upon receiving the permission pursuant to Clause 14.5 (i), the Contractor shall be entitled to close the designated lane for the period specified therein, and for all lane closures extending a continuous period of 48 (forty-eight) hours, the Contractor shall, in the event of any delay in re-opening such lane, for every stretch of 250 (two hundred and fifty) metres, or part thereof, pay Damages to the Authority calculated at the rate of 0.1% (zero point one per cent) of the monthly maintenance payment for each day of delay until the lane has been re-opened for traffic. In the event of any delay in re-opening such lanes or in the event of emergency decommissioning and closure to traffic of the whole or any part of the Project Highway due to failure of the Contractor, the Contractor shall pay damages to the Authority at double the above rate, without prejudice the rights of the Authority under this Agreement including Termination thereof.

#### **14.6 Reduction of payment for non-performance of Maintenance obligations**

- (i) In the event that the Contractor fails to repair or rectify any Defect or deficiency set forth in Schedule-E within the period specified therein, it shall be deemed as failure of performance of Maintenance obligations by the Contractor and the Authority shall be entitled to effect reduction in monthly lump sum payment for maintenance in accordance with Clause 19.7 and Schedule-M, without prejudice to the rights of the Authority under this Agreement, including Termination thereof.
- (ii) If the nature and extent of any Defect justifies more time for its repair or rectification than the time specified in Schedule-E, the Contractor shall be entitled to additional time in conformity with Good Industry Practice. Such additional time shall be determined by the Authority's Engineer and conveyed to the Contractor and the Authority with reasons thereof.

#### **14.7 Authority's right to take remedial measures**

In the event the Contractor does not maintain and/or repair the Project Highway or any part thereof in conformity with the Maintenance Requirements, the Maintenance Manual or the Maintenance Programme, as the case may be, and fails to commence remedial works within 15 (fifteen) days of receipt of the Maintenance Inspection Report under Clause 15.2 or a notice in this behalf from the Authority or the Authority's Engineer, as the case may be, the Authority shall, without prejudice to its rights under this Agreement including Termination thereof, be entitled to undertake such remedial measures at the cost of the Contractor, and to recover its cost from the Contractor. In addition to recovery of the aforesaid cost, a sum equal to 20% (twenty per cent) of such cost shall be paid by the Contractor to the Authority as Damages.

#### **14.8 Restoration of loss or damage to Project Highway**

Save and except as otherwise expressly provided in this Agreement, in the event that the Project Highway or any part thereof suffers any loss or damage during the Maintenance from any cause attributable to the Contractor, the Contractor shall, at its cost and expense, rectify and remedy such loss or damage forthwith so that the Project Highway conforms to the provisions of this Agreement.

#### **14.9 Overriding powers of the Authority**

- (i) If in the reasonable opinion of the Authority, the Contractor is in material breach of its obligations under this Agreement and, in particular, the Maintenance Requirements, and such breach is causing or likely to cause material hardship or danger to the Users and pedestrians, the Authority may, without prejudice to any of its rights under this Agreement including Termination thereof, by notice require the Contractor to take reasonable measures immediately for rectifying or removing such hardship or danger, as the case may be.
- (ii) In the event that the Contractor, upon notice under Clause 14.9 (i), fails to rectify or remove any hardship or danger within a reasonable period, the Authority may exercise overriding powers under this Clause 14.9 (ii) and take over the performance of any or all the obligations of the Contractor to the extent deemed necessary by it for rectifying or removing such hardship or danger; provided that the exercise of such overriding powers by the Authority shall be of no greater scope and of no longer duration than is reasonably required hereunder; provided further that any costs and expenses incurred by the Authority in discharge of its obligations hereunder shall be recovered by the Authority from the Contractor, and the Authority shall be entitled to deduct any such costs and expenses incurred from the payments due to the Contractor under Clause 19.7 for the performance of its Maintenance obligations.
- (iii) In the event of a national emergency, civil commotion or any other circumstances specified in Clause 21.3, the Authority may take over the performance of any or all the obligations of the Contractor to the extent deemed necessary by it, and exercise such control over the Project Highway or give such directions to the Contractor as may be deemed necessary; provided that the exercise of such overriding powers by the Authority shall be of no greater scope and of no longer duration than is reasonably required in the circumstances which caused the exercise of such overriding power by the Authority. For the avoidance of doubt, it is agreed that the consequences of such

action shall be dealt in accordance with the provisions of Article 21. It is also agreed that the Contractor shall comply with such instructions as the Authority may issue in pursuance of the provisions of this Clause 14.9 (iii), and shall provide assistance and cooperation to the Authority, on a best effort basis, for performance of its obligations hereunder.

#### **14.10 Taking over Certificate**

The Maintenance Requirements set forth in Schedule-E having been duly carried out, Maintenance Period as set forth in Clause 14.1 (i) having been expired and Authority's Engineer determining the Tests on Completion of Maintenance to be successful in accordance with Schedule-Q, the Authority will issue Taking Over Certificate to the Contractor substantially in the format set forth in Schedule-R.

## **Article 15**

### **Supervision and Monitoring during Maintenance**

#### **15.1 Inspection by the Contractor**

- (i) The Authority's Engineer shall undertake regular inspections to evaluate continuously the compliance with the Maintenance Requirements.
- (ii) The Contractor shall carry out a detailed pre-monsoon inspection of all bridges, culverts and drainage system in accordance with the guidelines contained in IRC: SP35. Report of this inspection together with details of proposed maintenance works as required shall be conveyed to the Authority's Engineer forthwith. The Contractor shall complete the proposed maintenance works before the onset of the monsoon and send a compliance report to the Authority's Engineer. Post monsoon inspection shall be undertaken by the Contractor and the inspection report together with details of any damages observed and proposed action to remedy the same shall be conveyed to the Authority's Engineer forthwith.

#### **15.2 Inspection and payments**

- (i) The Authority's Engineer may inspect the Project Highway at any time, but at least once every month, to ensure compliance with the Maintenance Requirements. It shall make a report of such inspection ("Maintenance Inspection Report") stating in reasonable detail the Defects or deficiencies, if any, with particular reference to the Maintenance Requirements, the Maintenance Manual, and the Maintenance Programme, and send a copy thereof to the Authority and the Contractor within 10 (ten) days of such inspection.
- (ii) After the Contractor submits to the Authority's Engineer the Monthly Maintenance Statement for the Project Highway pursuant to Clause 19.6, the Authority's Engineer shall carry out an inspection within 10 (ten) days to certify the amount payable to the Contractor. The Authority's Engineer shall inform the Contractor of its intention to carry out the inspection at least 3 (three) business days in advance of such inspection. The Contractor shall assist the Authority's Engineer in verifying compliance with the Maintenance Requirements.
- (iii) For each case of non-compliance of Maintenance Requirements as specified in the inspection report of the Authority's Engineer, the Authority's Engineer shall calculate the amount of reduction in payment in accordance with the formula specified in Schedule-M.
- (iv) Any deduction made on account of non-compliance will not be paid subsequently even after establishing the compliance thereof. Such deductions will continue to be made every month until the compliance is procured.

#### **15.3 Tests**

For determining that the Project Highway conforms to the Maintenance Requirements, the Authority's Engineer shall require the Contractor to carry out, or cause to be carried out, Tests specified by it in accordance with Good Industry Practice. The Contractor shall, with due

diligence, carry out or cause to be carried out all such Tests in accordance with the instructions of the Authority's Engineer and furnish the results of such Tests forthwith to the Authority' Engineer.

At any time during Maintenance Period, the Authority may appoint an external technical auditor to conduct an audit of the quality of the Works. The Auditor in the presence of the representatives of the Contractor and the Authority's Engineer shall carry out the Tests and/or collect samples for testing in the laboratory. The timing, the testing equipment and the sample size of this audit shall be as decided by the Authority. The findings of the audit, to the extent accepted by the Authority, shall be notified to the Contractor and the Authority's Engineer for taking remedial measures. After completion of the remedial measures by the Contractor, the auditor shall undertake a closure audit and this process will continue till the remedial measures have brought the maintenance works into compliance with the Specifications and Standards. The Contractor shall provide all assistance as may be required by the auditor in the conduct of its audit hereunder. Notwithstanding anything contained in this Clause 15.3, the external technical audit shall not affect any obligations of the Contractor or the Authority's Engineer under this Agreement.

#### **15.4 Reports of unusual occurrence**

The Contractor shall, during the Maintenance Period, prior to the close of each day, send to the Authority and the Authority's Engineer, by facsimile or e- mail, a report stating accidents and unusual occurrences on the Project Highway relating to the safety and security of the Users and Project Highway. A monthly summary of such reports shall also be sent within 3 (three) business days of the closing of month. For the purposes of this Clause 15.4, accidents and unusual occurrences on the Project Highway shall include:

- (a) accident, death or severe injury to any person; (b) damaged or dislodged fixed equipment;
- (c) flooding of Project Highway; and
- (d) any other unusual occurrence.

## **Article 16**

### **Traffic Regulation**

#### **16.1 Traffic regulation by the Contractor**

- (i) The Contractor shall take all the required measures and make arrangements for the safety of Users during the Construction and Maintenance of the Project Highway or a Section thereof in accordance with the provisions of MORTH Specifications. It shall provide, erect and maintain all such barricades, signs, markings, flags, and lights as may be required by Good Industry Practice for the safety of the traffic passing through the Section under construction or maintenance.
- (ii) All works shall be carried out in a manner creating least interference to traffic passing through the Project Highway or a Section thereof. In sections where construction or maintenance Works on the carriageway are taken up, the Contractor shall ensure that proper passage is provided for the traffic. Where it is not possible or safe to allow traffic on part width of the carriageway, a temporary diversion of proper specifications shall be constructed by the Contractor at its own cost. 'ROBOTS' may be used for diversion and control of traffic during Construction. The Contractor shall take prior approval of the Authority's Engineer for any proposed arrangement for traffic regulation during Construction and Maintenance, which approval shall not be unreasonably withheld.

## **Article 17**

### **Defects Liability**

#### **17.1 Defects Liability Period**

- (i) The Contractor shall be responsible for all the Defects and deficiencies, except usual wear and tear in the Project Highway or any Section thereof, till the expiry of a period of commencing from the date of Completion Certificate (the “Defects Liability Period”) as specified below:
- (a) 5 (five) years from the date of completion in case of a road being constructed with flexible pavement;
  - (b) 10 (ten) years from the date of completion in case of road being constructed with rigid pavement;
  - (c) 10 (ten) years from the date of completion in case of road being constructed with flexible pavement using perpetual design;
  - (d) 10 (ten) years from the date of completion in case of all stand-alone structures, e.g. Major Bridges/ and Tunnels;
  - (e) 10 (ten) years from the date of completion for the stretches where new technology/ material has been/ is proposed to be used.
  - (f) 3 (three) years from the date of completion for stretches requiring renewal of Bituminous Concrete (BC) layer through either using hot-in-place recycling of the entire BC layer or providing a fresh layer of BC with 40mm thickness.
  - (g) 3 (three) years from the date of completion for stretches requiring improvement to riding quality, in cases other than those mentioned in para (f) above, through laying a layer of BM/DBM and BC.

The Defects Liability Period shall commence from the date of the Completion Certificate. For the avoidance of any doubt, any repairs or restoration because of usual wear or tear in the Project Highway or any Section thereof shall form a part of the Maintenance obligations of the Contractor as specified in Article 14.

#### **17.2 Remedying Defects**

Save and except as provided in Clause 14.1 (iii), the Contractor shall repair or rectify all Defects and deficiencies observed by the Authority or Authority’s Engineer during the Defects Liability Period within a period of 15 (fifteen) days from the date of notice issued by the Authority or Authority’s Engineer in this behalf, or within such reasonable period as may be determined by the Authority or Authority’s Engineer at the request of the Contractor, in accordance with Good Industry Practice.

#### **17.3 Cost of remedying Defects**

Any repair or rectification undertaken in accordance with the provisions of Clause 17.2, including any additional testing, shall be carried out by the Contractor at its own risk and cost, to the extent that such rectification or repair is attributable to:

- (a) the design of the Project;
- (b) Plant, Materials or workmanship not being in accordance with this Agreement and the Specifications and Standards;
- (c) improper maintenance during construction of the Project Highway by the Contractor; and/ or
- (d) failure by the Contractor to comply with any other obligation under this Agreement.

**17.4 Contractor's failure to rectify Defects**

If the Contractor fails to repair or rectify such Defect or deficiency within the period specified in Clause 17.2, the Authority shall be entitled to get the same repaired, rectified or remedied at the Contractor's cost to make the Project Highway conform to the Specifications and Standards and the provisions of this Agreement. All costs consequent thereon shall, after due consultation with the Authority and the Contractor, be determined by the Authority's Engineer. The cost so determined and an amount equal to 20% (twenty percent) of the cost as Damages shall be recoverable by the Authority from the Contractor and may be deducted by the Authority from any monies due to the Contractor.

**17.5 Extension of Defects Liability Period**

The Defects Liability Period shall be deemed to be extended till the identified Defects under Clause 17.2 have been remedied or rectified

## **Article 18**

### **Authority's Engineer**

#### **18.1 Appointment of the Authority's Engineer**

- (i) The Authority shall appoint a firm of Consulting Engineers or a Project Monitoring Committee (PMC) substantially in accordance with the selection criteria set forth in Schedule-N, to be the engineer under this Agreement (the "Authority's Engineer"). In unavoidable circumstances, Authority may appoint an officer to act as Authority's Engineer until appointment of a Consulting Engineering firm/ Supervision Consultant/ PMC.
- (ii) The officer in-charge of the Authority (e.g. PD/ RO/ CGM/ Member in the case of NHAI; RO/CE/ADG in the case of MoRTH projects executed through the State PWDs; and PD/ED/Director in the case of NHIDCL) is responsible for the overall supervision and monitoring of the execution of project as the representative of the owner of the project. The Authority's Engineer is appointed to assist the Authority for carrying out the functions as detailed under clause 18.2. As such, an officer of the Authority is vested with all such powers and responsibilities as are enjoined upon the Authority's Engineer and is fully competent to issue any instructions for proper monitoring and supervision of the project, either by himself or through the Authority's Engineer. Instructions issued by the concerned officer of the Authority shall have the same effect as that of the Authority's Engineer in terms of this Agreement. Wherever such concerned officer issues any instructions or notice to the Contractor, he shall endorse a copy thereof to the Authority's Engineer.
- (iii) The Authority's Engineer should be appointed within 10 days from the date of this Agreement or before declaration of Appointed Date, whichever is earlier. The Authority shall notify the appointment or replacement of the Authority's Engineer to the Contractor.
- (iv) The staff of the Authority's Engineer shall include suitably qualified engineers and other professionals who are competent to assist the Authority's Engineer to carry out its duties.

#### **18.2 Duties and authority of the Authority's Engineer**

- (i) The Authority's Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement and substantially in accordance with the terms of reference ("Terms of Reference" or "TOR") set forth in Annexure-I of Schedule N, but subject to obtaining prior written approval of the Authority before determining:
  - (a) any Time Extension;
  - (b) any additional cost to be paid by the Authority to the Contractor; (c) the Termination Payment;
  - (d) issuance of Completion Certificate; or

- (e) any other matter which is not specified in (a), (b), (c) or (d) above and which creates financial liability on either Party.
- (ii) No decision or communication of the Authority's Engineer shall be effective or valid unless it is accompanied by an attested true copy of the approval of the Authority for and in respect of any matter specified in Clause 18.2 (i).
- (iii) The Authority's Engineer shall submit regular periodic reports, at least once every month, to the Authority in respect of its duties and functions under this Agreement. Such reports shall be submitted by the Authority's Engineer within 10 (ten) days of the beginning of every month. For the avoidance of doubt, the Authority's Engineer shall include in its report, compliance of the recommendations of the Safety Consultant.

### **18.3 Delegation by the Authority's Engineer**

- (i) The Authority's Engineer may, by order in writing, delegate any of his duties and responsibilities to suitably qualified and experienced personnel who are accountable to Authority's Engineer, or may revoke any such delegation, under intimation to the Authority and the Contractor. Provided, however, that the Authority's Engineer shall be responsible and liable for all actions and omissions of such personnel.
- (ii) Any failure of the Authority's Engineer to disapprove any work, Plant or Materials shall not constitute approval, and shall, therefore, not prejudice the right of the Authority to reject the work, Plant or Materials, which is not in accordance with the provisions of this Agreement and the Specifications and Standards.
- (iii) Notwithstanding anything stated in Clause 18.3 (i) above, the Authority's Engineer shall not delegate the authority to refer any matter for the Authority's prior approval wherever required in accordance with the provisions of Clause 18.2.

### **18.4 Instructions of the Authority's Engineer**

- (i) The Authority's Engineer may issue instructions for remedying any Defect(s) to the Contractor. The Contractor shall take such instructions from the Authority's Engineer, or from an assistant to whom appropriate authority has been delegated under Clause 18.3.
- (ii) The instructions issued by the Authority's Engineer shall be in writing. However, if the Authority's Engineer issues any oral instructions to the Contractor, it shall confirm the oral instructions in writing within 2 (two) working days of issuing them.
- (iii) In case the Contractor does not receive the confirmation of the oral instructions within the time specified in Clause 18.4 (ii), the Contractor shall seek the written confirmation of the oral instructions from the Authority's Engineer. The Contractor shall obtain acknowledgement from the Authority's Engineer of the communication seeking written confirmation. In case of failure of the Authority's Engineer or its delegated assistant to reply to the Contractor within 2 (two) days of the receipt of the communication from the Contractor, the Contractor may not carry out the instructions.
- (iv) In case of any dispute on any of the instructions issued by the delegated assistant, the Contractor may refer the dispute to the Authority's Engineer, who shall then confirm,

reverse or vary the instructions within 3 (three) business days of the dispute being referred.

#### **18.5 Determination by the Authority's Engineer**

- (i) The Authority's Engineer shall consult with each Party in an endeavour to reach agreement wherever this Agreement provides for the determination of any matter by the Authority's Engineer. If such agreement is not achieved, the Authority's Engineer shall make a fair determination in accordance with this Agreement having due regard to all relevant circumstances. The Authority's Engineer shall give notice to both the Parties of each agreement or determination, with supporting particulars.
- (ii) Each Party shall give effect to each agreement or determination made by the Authority's Engineer in accordance with the provisions of this Agreement. Provided, however, that if any Party disputes any instruction, decision, direction or determination of the Authority's Engineer, the Dispute shall be resolved in accordance with the Dispute Resolution Procedure.

#### **18.6 Remuneration of the Authority's Engineer**

The remuneration, costs and expenses of the Authority's Engineer shall be paid by the Authority.

#### **18.7 Termination of the Authority's Engineer**

- (i) The Authority may, in its discretion, replace the Authority's Engineer at any time. However, the Authority shall ensure that alternative arrangements for appointment of another Authority's Engineer or designation of its own officer as the Authority Engineer for the intervening period are made simultaneously.
- (ii) If the Contractor has reasons to believe that the Authority's Engineer is not discharging its duties and functions in accordance with the provisions of this Agreement, it may make a written representation to the Authority and seek termination of the appointment of the Authority's Engineer. Upon receipt of such representation, the Authority shall hold a tripartite meeting with the Contractor and the Authority's Engineer and make best efforts for an amicable resolution of the representation. In the event that the appointment of the Authority's Engineer is terminated hereunder, the Authority shall appoint forthwith another Authority's Engineer in accordance with Clause 18.1 and 18.7 (i).

Part IV  
Financial Covenants

## Article 19

### Payments

#### 19.1 Contract Price

- (i) The Authority shall make payments to the Contractor for the Works on the basis of the lump sum price accepted by the Authority in consideration of the obligations specified in this Agreement for an amount of INR ... .. (INR ... ..) (the "Contract Price"), which shall be subject to adjustments in accordance with the provisions of this Agreement. For the avoidance of doubt, the Parties expressly agree that the Contract Price shall not include the cost of Maintenance and Goods and Services Tax (GST), which shall be paid separately in accordance with the provisions of Clause 19.7. The Parties further agree that save and except as provided in this Agreement, the Contract Price shall be valid and effective until issue of Completion Certificate.
- (ii) The Contract Price includes all duties, taxes (excluding GST, which shall be payable at the applicable rates), royalty, cess, charges, and fees that may be levied in accordance with the laws and regulations in force as on the Base Date on the Contractor's equipment, Plant, Materials and supplies acquired for the purpose of this Agreement and on the services performed under this Agreement. Nothing in this Agreement shall relieve the Contractor from its responsibility to pay any tax including any tax that may be levied in India on profits made by it in respect of this Agreement. The Contract Price also includes the cost of shifting of obstructing Utilities (including all centages as applicable by the utility owning department except supervision charges) as given in clause 9.2 and Schedule B.
- (iii) The Contract Price shall not be adjusted for any change in costs stated in Clause 19.1 (ii) above, except as stated in Clauses 19.10 and 19.17. The Contract Price also includes the cost of shifting of obstructing Utilities (including all centages as applicable by the utility owning department except supervision charges) as given in clause 9.2 and Schedule B.
- (iv) The Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs, unless otherwise provided for in this Agreement.
- (v) Unless otherwise stated in this Agreement, the Contract Price covers all the Contractor's obligations for the Works under this Agreement and all things necessary for the Construction and the remedying of any Defects in the Project Highway.
- (vi) All payments under this Agreement shall be made in Indian Rupees.

**19.1.2** The Contract Price also includes the cost of shifting of obstructing utilities (including all centages as applicable by the utility owning department except supervision charges ) as given in clause 9.2 and schedule B.

#### 19.2 Advance Payment

- (i) The Authority shall make an interest-bearing advance payment (the "Advance Payment") @ "Bank Rate + 3%", equal to 10 % (ten percent) of the Contract Price, exclusively for mobilization expenses. The Advance Payment for mobilization expenses shall be made

in two instalments each equal to 5% (five percent) of the Contract Price. The second 5% (five percent) mobilization advance would be released after submission of utilization certificate by the Contractor for the first 5% (five per cent) advance already released earlier.

- (ii) In addition to above, the Authority shall make an additional interest-bearing Advance Payment against newly purchased key Construction equipment required for the works as per agreed Construction programme and brought to the site, if so requested by the Contractor subject to the same terms and conditions specified for Advance Payment for mobilization expenses in this Agreement. The maximum of such advance shall be 5% (five per cent) of the Contract Price against Bank Guarantee. This advance shall be further subject to the condition that:
  - (a) such new equipment are considered by the Authority's Engineer to be necessary for the works and
  - (b) these new equipment should be procured in the name of Contractor and is verified by Authority's Engineer to have been brought to site.

The Advance Payment for mobilization expenses and for acquisition of key new Construction equipment would be deemed as interest bearing advance at the applicable interest rate (@ "Bank rate + 3%"), to be compounded annually on a reducing balance basis. The interest would be recovered along with the recovery of mobilization Advance Payment as per provision laid down for the mobilization advance recovery.

- (iii) The Contractor may apply to the Authority for the first instalment of the Advance Payment at any time after the Appointed Date, along with an irrevocable and unconditional guarantee from a Bank for an amount equivalent to 110% (one hundred and ten per cent) of such instalment, substantially in the form provided at Annex-III of Schedule-G, to remain effective till the complete and full repayment thereof.
- (iv) At any time, after 60 (sixty) days from the Appointed Date, the Contractor may apply to the Authority for the second instalment of the Advance Payment along with an irrevocable and unconditional guarantee from a Bank for an amount equivalent to 110% (one hundred and ten per cent) of such instalment, substantially in the form provided at Annex-III of Schedule-G, to remain effective till the complete and full repayment thereof.

The Contractor has the option of splitting the Bank Guarantee against Advance Payment for mobilization expenses into parts, each not less than 2.75% (two point seven five per cent) of the Contract Price. Each part of the guarantee shall remain effective till full repayment of such part advance corresponding to this bank guarantee. Such part of Bank Guarantee shall be returned to the Contractor on recovery under the Agreement of the full amount of such part guarantee within 30 (thirty) days of the said recovery.

- (v) The Advance Payment shall be paid by the Authority to the Contractor within 15 (fifteen) days of the receipt of its respective requests in accordance with the provisions of this Clause 19.2.

- (vi) The Advance Payment shall be repaid through percentage deductions from the stage payments determined by the Authority's Engineer in accordance with Clause 19.5, as follows:
  - (a) deductions shall commence in the first Stage Payment Statement;
  - (b) deductions shall be made at the rate of 15% (fifteen percent) of each Stage Payment Statement until such time as the advance payment has been repaid; provided that the advance payment shall be completely repaid prior to the time when 80% (eighty percent) of the Schedule Construction Period is over;
  - (c) if total certified stage payments (excluding the Advance Payment and deductions and repayments of retention) does not exceed 20% (twenty percent) of the Contract Price within [50% of the Scheduled Construction Period] from the Appointed Date then the Advance Payment including interest shall be recovered by encashment of the Bank Guarantee for the Advance Payment.
- (vii) If the Advance Payment has not been fully repaid prior to Termination under Clause 21.7 or Article 23, as the case may be, the whole of the balance then outstanding shall immediately become due and payable by the Contractor to the Authority. Without prejudice to the provisions of Clause 19.2 (vi), in the event of Termination for Contractor Default, the Advance Payment shall be deemed to carry interest @ "Bank Rate+5%" per annum from the date of Advance Payment to the date of recovery by encashment of the Bank Guarantee for the Advance Payment. For the avoidance of doubt, the aforesaid interest shall be payable on the unrecovered balance.

### **19.3 Procedure for estimating the payment for the Works**

- (i) The Authority shall make interim payments to the Contractor as certified by the Authority's Engineer on completion of a stage, in a length, number or area as specified and valued in accordance with the proportion of the Contract Price assigned to each item and its stage in Schedule-H.
- (ii) The Contractor shall base its claim for interim payment for the stages completed till the end of the month for which the payment is claimed, valued in accordance with Clause 19.3 (i), supported with necessary particulars and documents in accordance with this Agreement.
- (iii) Any reduction in the Contract Price arising out of Change of Scope or the works withdrawn under Clause 8.3 shall not affect the amounts payable for the items or stage payments thereof which are not affected by such Change of Scope or withdrawal. For avoidance of doubt and by way of illustration, the Parties agree that if the amount assigned to Major Bridges is reduced from Rs. 100 crore to Rs. 80 crore owing to Change of Scope or withdrawal of work, the reduction in payment shall be restricted to relevant payments for Major Bridges only and the payment due in respect of all other stage payments under the item Major Bridges shall not be affected in any manner. The Parties further agree that the adjustments arising out of the aforesaid modifications shall be carried out in a manner that the impact of such modifications is restricted to the said Change of Scope or withdrawal, as the case may be, and does not alter the

payments due for and in respect of items or stage payments which do not form part of such Change of Scope or withdrawal.

#### **19.4 Stage Payment Statement for Works**

The Contractor shall submit a statement (the “Stage Payment Statement”), in 3 (three) copies, by the 7<sup>th</sup> (seventh) day of the month to the Authority’s Engineer in the form set forth in Schedule-0, showing the amount calculated in accordance with Clause 19.3 to which the Contractor considers himself entitled for completed stage(s) of the Works. The Stage Payment Statement shall be accompanied with the progress reports and any other supporting documents. The Contractor shall not submit any claim for payment of incomplete stages of work.

#### **19.5 Stage Payment for Works**

- (i) Within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 19.4, the Authority’s Engineer shall broadly determine the amount due to the Contractor and recommend the release of 90 (ninety) percent of the amount so determined as part payment against the Stage Payment Statement, pending issue of the Interim Payment Certificate by the Authority’s Engineer. Within 10 (ten) days of the receipt of recommendation of the Authority’s Engineer, the Authority shall make electronic payment directly to the Contractor’s bank account.
- (ii) Within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 19.4, the Authority’s Engineer shall determine and shall deliver to the Authority and the Contractor an IPC certifying the amount due and payable to the Contractor, after adjusting the payments already released to the Contractor against the said statement. For the avoidance of doubt, the Parties agree that the IPC shall specify all the amounts that have been deducted from the Stage Payment Statement and the reasons therefor.
- (iii) In cases where there is a difference of opinion as to the value of any stage, the Authority’s Engineer’s view shall prevail and interim payments shall be made to the Contractor on this basis; provided that the foregoing shall be without prejudice to the Contractor’s right to raise a Dispute.
- (iv) The Authority’s Engineer may, for reasons to be recorded, withhold from payment:
  - (a) the estimated value of work or obligation that the Contractor has failed to perform in accordance with this Agreement and the Authority’s Engineer had notified the Contractor; and
  - (b) the estimated cost of rectification of work done being not in accordance with this Agreement.
- (v) Payment by the Authority shall not be deemed to indicate the Authority’s acceptance, approval, consent or satisfaction with the work done.

#### **19.6 Monthly Maintenance Statement of the Project Highway**

- (i) The Contractor shall submit to the Authority’s Engineer a monthly maintenance statement (“Monthly Maintenance Statement”) in 3 (three) copies by the 7<sup>th</sup> (seventh) day of each

month in the format set forth in Schedule-O for the Maintenance of the Project Highway during the previous month.

- (ii) The monthly lump sum amount payable for Maintenance shall be 1/12th (one-twelfth) of the annual cost of Maintenance as specified in Clause 14.1 (i).

#### **19.7 Payment for Maintenance of the Project Highway**

- (i) Within 15 (fifteen) days of receipt of the Monthly Maintenance Statement from the Contractor pursuant to Clause 19.6, the Authority's Engineer shall verify the Contractor's monthly maintenance statement and certify the amount to be paid to the Contractor taking into account:
  - (a) Compliance with the Maintenance Requirements; and
  - (b) reduction for non-compliance with the Maintenance Requirement in accordance with Clause 19.7 (ii).

The Authority's Engineer shall deliver to the Authority an IPC approving or amending the monthly maintenance statement to reflect the amount due to the Contractor in accordance with this Agreement.

- (ii) Maintenance shall be measured in units of one kilometre each; provided, however, that payment thereof shall be made in fixed monthly amounts in accordance with this Agreement. If the Maintenance Requirements set forth in Schedule-E are not met, reduction in payments shall be made in accordance with the provisions of Schedule- M. The reductions for non-compliance with the Maintenance Requirements shall be applied on the basis of monthly inspections by the Authority's Engineer.
- (iii) The deduction made on account of non-compliance with the Maintenance Requirements shall not be subsequently considered for payment after the compliance is achieved by repair or rectification.
- (iv) The Authority shall pay to the Contractor every quarter any amount due under any IPC under this Clause 19.7. The payment shall be made no later than 30 (thirty) days from the date of submission of the last IPC for the relevant quarter.

#### **19.8 Payment of Damages**

- (i) The Contractor may claim Damages due and payable to it in accordance with the provisions of this Agreement.
- (ii) The Authority's Engineer shall issue the IPC within 15 (fifteen) days of the receipt of the claim under Clause 19.8 (i), after making adjustments in accordance with the provisions of this Agreement. The Authority shall pay to the Contractor the amount due under any IPC within a period of 30 (thirty) days from the date of the submission of the claim under this Clause 19.8. In the event of the failure of the Authority to make payment to the Contractor within the specified time, the Authority shall be liable to pay to the Contractor interest thereon and the provisions of Clause 19.9 shall apply mutatis mutandis thereto.

#### **19.9 Time of payment and interest**

- (i) The Authority shall pay to the Contractor any amount due under any payment certificate issued by the Authority's Engineer in accordance with the provisions of this Article 19, or in accordance with any other clause of this Agreement as follows:
  - (a) payment shall be made no later than 30 (thirty) days from the date of submission of the Stage Payment Statement by the Contractor to the Authority's Engineer for certification in accordance with the provisions of Clause 19.4 for an IPC; provided that, in the event the IPC is not issued by the Authority's Engineer within the aforesaid period of 30 (thirty) days, the Authority shall pay the amount shown in the Contractor's Stage Payment Statement and any discrepancy therein shall be added to, or deducted from, the next payment certificate issued to the Contractor; and
  - (b) payment shall be made no later than 30 (thirty) days from the date of submission of the Final Payment Certificate for Works along with the discharge submitted to the Authority's Engineer in accordance with the provisions of Clause 19.15 for certification.
- (ii) In the event of the failure of the Authority to make payment to the Contractor within the time period stated in this Clause 19.9, the Authority shall be liable to pay to the Contractor interest @ Bank Rate + 3% per annum, on all sums remaining unpaid from the date on which the same should have been paid, calculated in accordance with the provisions of sub-Clauses (a) and (b) of Clause 19.9 (i) and till the date of actual payment.

#### **19.10 Price adjustment for the Works**

- (i) The amounts payable to the Contractor for Works shall be adjusted in accordance with the provisions of this Clause 19.10
- (ii) Subject to the provisions of Clause 19.10 (iii), the amounts payable to the Contractor for Works, shall be adjusted in the IPC issued by the Authority's Engineer for the increase or decrease in the index cost of inputs for the Works, by the addition or subtraction of the amounts determined by the formulae prescribed in Clause 19.10 (iv).
- (iii) To the extent that full compensation for any increase or decrease in costs to the Contractor is not covered by the provisions of this or other Clauses in this Agreement, the costs and prices payable under this Agreement shall be deemed to include the amounts required to cover the contingency of such other increase or decrease of costs and prices.
- (iv) The Contract Price shall be adjusted for increase or decrease in rates and price of labour, cement, steel, Plant, machinery and spares, bitumen, fuel and lubricants, and other material inputs in accordance with the principles, procedures and formulae specified below:
  - (a) Price adjustment shall be applied on completion of the specified stage of the respective item of work in accordance with Schedule-H;
  - (b) Adjustment for each item of work/stage shall be made separately;

(c) The following expressions and meanings are assigned to the value of the work done:

RW= Value of work done for the completion of a stage under the following items of Schedule-H:

i. Road works; and

ii. Other works

BR = Value of work done for the completion of a stage under the items Major Bridges and Structures (Schedule-H)

$$VBR = 0.05BR \times \left[ PL \times \frac{L_1 - L_0}{L_0} + PA \times \frac{A_1 - A_0}{A_0} + PF \times \frac{F_1 - F_0}{F_0} + PM \times \right.$$

(d) Price adjustment for changes in cost shall be paid in accordance with the following formulae:

(i)

$$VRW = 0.05RW \times \left[ PL \times \frac{L_1 - L_0}{L_0} + PA \times \frac{A_1 - A_0}{A_0} + PF \times \frac{F_1 - F_0}{F_0} + \right. \\ \left. PB \times \frac{B_1 - B_0}{B_0} + PM \times \frac{M_1 - M_0}{M_0} + PC \times \frac{C_1 - C_0}{C_0} + PS \times \frac{S_1 - S_0}{S_0} \right]$$

(ii)

Where,

VRW = Increase or decrease in the cost of road works/other works during the period under consideration due to changes in the rates for relevant components as stated in sub-paragraph (e).

VBR = Increase or decrease in the cost of Major Bridges and Structures during the period under consideration due to changes in the rates for relevant components as stated in sub-paragraph (e).

PB, PC, PL, PM, and PS are the percentages of bitumen, cement, labour, other materials, and steel/components (including strands and cables) respectively for the relevant item as stated in sub-paragraph (e).

PA is the percentage of Plant, machinery and spares component for the relevant item as stated in sub-paragraph (e).

PF is the percentage of fuel and lubricants for the relevant items as stated in sub- paragraph (e).

AO = The wholesale price index as published by the Ministry of Commerce & Industry, Government of India (hereinafter called "WPI") for "Manufacture of machinery for mining, quarrying and construction" for the month of the Base Date.

AI = The WPI for construction machinery for the month three months prior to the month to which the IPC relates.

BO = The official retail price of bitumen at the nearest refinery at [Panipat] on the Base Date.

- BI = The official retail price of bitumen at nearest refinery at [Panipat], on the first day of the month three months prior to the month to which the IPC relates.
- CO = The WPI for Ordinary Portland Cement for the month of the Base Date.
- CI = The WPI for Ordinary Portland Cement for the month three months prior to the month to which the IPC relates.
- FO = The official retail price of high speed diesel (HSD) oil at the existing consumer pumps of Indian Oil Corporation (“IOC”) in the State of [Uttarakhand] on the Base Date.
- FI = The official retail price of HSD at the existing consumer pumps of IOC in the State of [Uttarakhand] on the first day of the month three months prior to the month to which the IPC relates.
- LO = The consumer price index for industrial workers for the [circle Ghaziabad in the State of Uttar Pradesh], published by Labour Bureau, Ministry of Labour, Government of India, (hereinafter called “CPI”) for the month of the Base Date.
- LI = The CPI for the month three months prior to the month to which the IPC relates.
- MO = The WPI for all commodities for the month of the Base Date.
- MI = The WPI for all commodities for the month three months prior to the month to which the IPC relates.
- SO = The WPI for Mild Steel –Long Products for the month of the Base Date.
- SI = The WPI for Mild Steel –Long Products for the month three months prior to the month to which the IPC relates.

(f) The following percentages shall govern the price adjustment of the Contract Price:

Component	Item				
	Road Works				Major Bridges and Structures
	Earthwork, Granular work, and Other works	Bituminous work	Cement Concrete Pavement	Culverts, minor bridges and other structures	
Labour (PL)	[20%]	[20%]	Nil	[15%]	[15%]
Cement (PC)	[5%]	Nil	Nil	[15%]	[15%]
Steel (PS)	Nil	Nil	Nil	[15%]	[20%]
Bitumen (PB)	Nil	[15%]	Nil	Nil	Nil
Fuel and lubricants (PF)	[10%]	[10%]	Nil	[10%]	[10%]
Other Materials (PM)	[50%]	[40%]	Nil	[30%]	[25%]
Plant, machinery and spares. (PA)	[15%]	[15%]	Nil	[15%]	[15%]
Total	100%	100%	Nil	100%	100%

### 19.11 Restrictions on price adjustment

Price adjustment shall be due and payable only in respect of the stages of Works for which the Stage Payment Statement has been submitted by the Contractor no later than 30 (thirty) days from the date of the applicable Project Milestone or the Scheduled Completion Date, as the case may be, including any Time Extension granted therefor in accordance with the provisions of this Agreement. For the avoidance of doubt, in the event of submission of any Stage Payment Statement after the period specified herein, price adjustment shall be applicable until the date of the respective Project Milestone or the Scheduled Completion Date, as the case may be. Further, the Price Adjustment will be applicable only for Stage Payment Statements pertaining to the works executed after One year (365 days) from the Appointed Date.

### 19.12 Price adjustment for Maintenance of Project Highway

Lump sum payment for Maintenance shall be adjusted every quarter for changes in rates and prices of various inputs in accordance with the formula given below:

$$V = P \times \frac{W_1 - W_0}{W_0}$$

Where

V= Increase or decrease in the quarterly lump sum payment

P= Quarterly lump sum payment due to the Contractor after adjusting any reduction in payment for non-compliance of the Maintenance Requirements

W0= The wholesale price index (all commodities) for the month of the Base Date.

W1= The wholesale price index (all commodities) for the first day of the quarter under consideration for determining the price adjustment.

### 19.13 Final Payment Statement

- (i) Within 60 (sixty) days after receiving the Completion Certificate under Clause 12.2, the Contractor shall submit to the Authority's Engineer for consideration 6 (six) copies of a Final Payment Statement (the "Final Payment Statement") for Works, with supporting documents showing in detail, in the form prescribed by the Authority's Engineer:
  - (a) the summary of Contractor's Stage Payment claims for Works as submitted in accordance with Clause 19.4;
  - (b) the amounts received from the Authority against each claim; and
  - (c) any further sums which the Contractor considers due to it from the Authority.

If the Authority's Engineer disagrees with or cannot verify any part of the Final Payment Statement, the Contractor shall submit such further information as the Authority's Engineer may reasonably require. The Authority's Engineer shall deliver to the Authority:

- i. an IPC for those parts of the Final Payment Statement which are not in dispute, along with a list of disputed items which shall then be settled in accordance with the provisions of Article 26; or
  - ii. a Final Payment Certificate in accordance with Clause 19.15 if there are no disputed items.
- (ii) If the Authority's Engineer does not prescribe the form referred to in Clause 19.13 (i) within 15 (fifteen) of the date of issue of the Completion Certificate, the Contractor shall submit the statement in such form as it deems fit.

#### **19.14 Discharge**

Upon submission of the Final Payment Statement for Works under Clause 19.13, the Contractor shall give to the Authority, with a copy to the Authority's Engineer, a written discharge confirming that the total of the Final Payment Statement represents full and final settlement of all monies due to the Contractor in respect of this Agreement for all the Works arising out of this Agreement, except for any monies due to either Party on account of any Defect. Provided that such discharge shall become effective only after the payment due has been made in accordance with the Final Payment Certificate issued pursuant to Clause 19.15.

#### **19.15 Final Payment Certificate**

- (i) Within 30 (thirty) days after receipt of the Final Payment Statement for Works under Clause 19.13, and the written discharge under Clause 19.14, and there being no disputed items of claim, the Authority's Engineer shall deliver to the Authority, with a copy to the Contractor, a final payment certificate (the "Final Payment Certificate") stating the amount which, in the opinion of the Authority's Engineer, is finally due under this Agreement or otherwise. For the avoidance of doubt, before issuing the Final Payment Certificate, the Authority's Engineer shall ascertain from the Authority all amounts previously paid by the Authority and for all sums to which the Authority is entitled, the balance, if any, due from the Authority to the Contractor or from the Contractor to the Authority, as the case may be.
- (ii) The Authority shall, in accordance with the provisions of Clause 19.9, pay to the Contractor the amount which is stated as being finally due in the Final Payment Certificate.

#### **19.16 Final payment statement for Maintenance**

- (i) Within 30 (thirty) days after completion of the Maintenance Period, the Contractor shall submit to the Authority's Engineer 6 (six) copies of the final payment statement for Maintenance of the Project Highway, with supporting documents showing the details set forth below in the form prescribed by the Authority's Engineer:
  - (a) the total amount claimed in accordance with clause 19.7 (i) and
  - (b) any sums which the Contractor considers to be due to it, with supporting documents.
- (ii) The Authority's Engineer shall certify final payment within 30 (thirty) days of the receipt of the final payment statement of Maintenance under Clause 19.16 (i), segregating the

items of amount payable from the items of amount disallowed. The Authority shall make payment on the basis of the final payment authorised by the Authority's Engineer within a period of 30 (thirty) days of the receipt of the Final Payment Statement from the Authority's Engineer.

- (iii) If the Authority's Engineer does not prescribe the form within 15 (fifteen) days of the date of issue of the Completion Certificate, the Contractor shall submit the statement in such form as it deems fit.

#### **19.17 Change in law**

- (i) If as a result of Change in Law, the Contractor suffers any additional costs in the execution of the Works or in relation to the performance of its other obligations under this Agreement, the Contractor shall, within 15 (fifteen) days from the date it becomes reasonably aware of such addition in cost, notify the Authority with a copy to the Authority's Engineer of such additional cost due to Change in Law.
- (ii) If as a result of Change in Law, the Contractor benefits from any reduction in costs for the execution of this Agreement or in accordance with the provisions of this Agreement, either Party shall, within 15 (fifteen) days from the date it becomes reasonably aware of such reduction in cost, notify the other Party with a copy to the Authority's Engineer of such reduction in cost due to Change in Law.
- (iii) The Authority's Engineer shall, within 15 (fifteen) days from the date of receipt of the notice from the Contractor or the Authority, determine any addition or reduction to the Contract Price, as the case may be, due to the Change in Law.

#### **19.18 Correction of Interim Payment Certificates**

The Authority's Engineer may by an Interim Payment Certificate make any correction or modification in any previous Interim Payment Certificate issued by the Authority's Engineer.

#### **19.19 Authority's claims**

If the Authority considers itself to be entitled to any payment from the Contractor under any Clause of this Agreement, it shall give notice and particulars to the Contractor 20 (twenty) days before making the recovery from any amount due to the Contractor, and shall take into consideration the representation, if any, made by the Contractor in this behalf, before making such recovery.

#### **19.20 Bonus for early completion - Deleted**

~~In the event that the Project Completion Date occurs prior to the Scheduled Completion Date, the Contractor shall be entitled to receive a payment of bonus equivalent to 0.03% (zero point zero three per cent) of the Contract Price for each day by which the Project Completion Date precedes the Scheduled Completion Date, but subject to a maximum of 5% (five per cent) of the Contract Price. Provided, however, that the payment of bonus, if any, shall be made only after the issue of the Completion Certificate. For the avoidance of the doubt, the Parties agree that for the purpose of determining the bonus payable hereunder, the works shall always be deemed to be as specified in this Contract Agreement but excluding the works deemed to be deleted from the scope of work under clause 8.3 of this Contract Agreement and the Contract Price shall always be deemed to be the amount specified in Clause 19.1 (i) after excluding the~~

~~Contract Price of the Works deemed to be deleted from the Scope of Work under clause 8.3 of this Contract Agreement, and shall exclude any revision thereof for any reason.~~

## Article 20

### Insurance

#### 20.1 Insurance for Works and Maintenance

- (i) The Contractor shall effect and maintain at its own cost the insurances specified in Schedule-P and as per the requirements under the Applicable Laws.
- (ii) Subject to the provisions of Clause 21.6, the Authority and the Contractor shall, in accordance with its obligations as provided for in this Agreement, be liable to bear the cost of any loss or damage that does not fall within the scope of this Article 20 or cannot be recovered from the insurers.
- (iii) Subject to the exceptions specified in Clause 20.1 (iv) below, the Contractor shall, save and except as provided for in this Agreement, fully indemnify, hold harmless and defend the Authority from and against any and all losses, damages, costs, charges and/or claims with respect to:
  - (a) the death of or injury to any person; or
  - (b) the loss of or damage to any property (other than the Works);that may arise out of or in consequence of any breach by the Contractor of this Agreement during the execution of the Works or the remedying of any Defects therein.
- (iv) Notwithstanding anything stated above in Clause 20.1 (iii), the Authority shall fully indemnify the Contractor from and against any and all losses, damages, costs, charges, proceedings and/or claims arising out of or with respect to:
  - (a) the use or occupation of land or any part thereof by the Authority;
  - (b) the right of the Authority to execute the Works, or any part thereof, on, over, under, in or through any land;
  - (c) the damage to property which is the unavoidable result of the execution and completion of the Works, or the remedying of any Defects therein, in accordance with this Agreement; and
  - (d) the death of or injury to persons or loss of or damage to property resulting from any act or neglect of the Authority, its agents, servants or other contractors, not being employed by the Contractor.

Provided that, in the event of any injury or damage as a result of the contributory negligence of the Contractor, the Authority shall be liable to indemnify the Contractor from and against any and all losses, damages, costs, charges, proceedings and/or claims to the extent as may be proportionately determined to be the liability of the Authority, its servants or agents or other contractors not associated with the Contractor in such injury or damage.

- (v) Without prejudice to the obligations of the Parties as specified under Clauses 20.1 (iii) and 20.1 (iv), the Contractor shall maintain or effect such third party insurances as may be required under the Applicable Laws.
- (vi) The Contractor shall provide to the Authority, within 30 days of the Appointed Date, evidence of professional liability insurance maintained by its Design Director and/or consultants to cover the risk of professional negligence in the design of Works. The professional liability coverage shall be for a sum of not less than [3% (three per cent)] of the Contract Price and shall be maintained until the end of the Defects Liability Period.

## **20.2 Notice to the Authority**

No later than 15 (fifteen) days after the date of this Agreement, the Contractor shall by notice furnish to the Authority, in reasonable detail, information in respect of the insurances that it proposes to effect and maintain in accordance with this Article 20. Within 15 (fifteen) days of receipt of such notice, the Authority may require the Contractor to effect and maintain such other insurances as may be necessary pursuant hereto, and in the event of any difference or disagreement relating to any such insurance, the Dispute Resolution Procedure shall apply.

## **20.3 Evidence of Insurance Cover**

- (i) All insurances obtained by the Contractor in accordance with this Article 20 shall be maintained with insurers on terms consistent with Good Industry Practice. Within 10 (ten) days from the Appointed Date, the Contractor shall furnish to the Authority notarised true copies of the certificate(s) of insurance, copies of insurance policies and premia payment receipts in respect of such insurance, and no such insurance shall be cancelled, modified, or allowed to expire or lapse until the expiration of at least 45 (forty-five) days after notice of such proposed cancellation, modification or non-renewal has been delivered by the Contractor to the Authority. The Contractor shall act in accordance with the directions of the Authority. Provided that the Contractor shall produce to the Authority the insurance policies in force and the receipts for payment of the current premia.
- (ii) The Contractor shall ensure the adequacy of the insurances at all times in accordance with the provisions of this Agreement.

## **20.4 Remedy for failure to insure**

If the Contractor shall fail to effect and keep in force all insurances for which it is responsible pursuant hereto, the Authority shall have the option to either keep in force any such insurances, and pay such premia and recover the costs thereof from the Contractor, or in the event of computation of a Termination Payment, treat an amount equal to the Insurance Cover as deemed to have been received by the Contractor.

## **20.5 Waiver of subrogation**

All insurance policies in respect of the insurance obtained by the Contractor pursuant to this Article 20 shall include a waiver of any and all rights of subrogation or recovery of the insurers thereunder against, inter alia, the Authority, and its assigns, successors, undertakings and their subsidiaries, Affiliates, employees, insurers and underwriters, and of any right of the

insurers to any set-off or counterclaim or any other deduction, whether by attachment or otherwise, in respect of any liability of any such person insured under any such policy or in any way connected with any loss, liability or obligation covered by such policies of insurance.

#### **20.6 Contractor's waiver**

The Contractor hereby further releases, assigns and waives any and all rights of subrogation or recovery against, inter alia, the Authority and its assigns, undertakings and their subsidiaries, Affiliates, employees, successors, insurers and underwriters, which the Contractor may otherwise have or acquire in or from or in any way connected with any loss, liability or obligation covered by policies of insurance maintained or required to be maintained by the Contractor pursuant to this Agreement (other than third party liability insurance policies) or because of deductible clauses in or inadequacy of limits of any such policies of insurance.

#### **20.7 Cross liabilities**

Any such insurance maintained or effected in pursuance of this Article 20 shall include a cross liability clause such that the insurance shall apply to the Contractor and to the Authority as separately insured.

#### **20.8 Accident or injury to workmen**

Notwithstanding anything stated in this Agreement, it is hereby expressly agreed between the Parties that the Authority shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or Sub-contractor, save and except as for death or injury resulting from any act, omission or wilful default of the Authority, its agents or servants. The Contractor shall indemnify and keep indemnified the Authority from and against all such claims, proceedings, damages, costs, charges, and expenses whatsoever in respect of the above save and except for those acts, omissions or wilful defaults for which the Authority shall be liable.

#### **20.9 Insurance against accident to workmen**

The Contractor shall effect and maintain during the Agreement such insurances as may be required to insure the Contractor's personnel and any other persons employed by it on the Project Highway from and against any liability incurred in pursuance of this Article 20. Provided that for the purposes of this Clause 20.9, the Contractor's personnel/any person employed by the Contractor shall include the Sub-contractor and its personnel. It is further provided that, in respect of any persons employed by any Sub-contractor, the Contractor's obligations to insure as aforesaid under this Clause 20.9 shall be discharged if the Sub-contractor shall have insured against any liability in respect of such persons in such manner that the Authority is indemnified under the policy. The Contractor shall require such Sub-contractor to produce before the Authority, when required, such policy of insurance and the receipt for payment of the current premium within 10 (ten) days of such demand being made by the Authority.

#### **20.10 Application of insurance proceeds**

The proceeds from all insurance claims, except for life and injury, shall be applied for any necessary repair, reconstruction, reinstatement, replacement, improvement, delivery or

installation of the Project Highway and the provisions of this Agreement in respect of construction of works shall apply mutatis mutandis to the works undertaken out of the proceeds of insurance.

#### **20.11 Compliance with policy conditions**

Each Party hereby expressly agrees to fully indemnify the other Party from and against all losses and claims arising from its failure to comply with conditions imposed by the insurance policies effected in accordance with this Agreement.

#### **20.12 General Requirements of Insurance Policies**

The Contractor must:

- (a) immediately deposit copies of the policies or certificates of any insurance which it is required to effect under the Contract, together with receipts for the premiums;
- (b) effect all insurances for which the Contractor is responsible with an insurer approved by the Authority;
- (c) make no material changes to the terms of any insurance without the Authority's approval;
- (d) in all respects comply with any conditions stipulated in the insurance policies which the Contractor is required to effect under the Agreement or which the Authority has effected in relation to the Facility and notified to the Contractor; and shall provide all assistance to the Authority in the application for, and finalization of, such comprehensive insurance package;
- (e) regardless of the extent of settlement of claims by the underwriters or the time taken for settlement of claims, the Contractor shall make good any loss, or damage at its own cost promptly;
- (f) provide all assistance to the Authority in the application for, and finalization of, such comprehensive insurance package;
- (g) pay the Contractor's share of the insurance premiums for insurance premiums allocated under such comprehensive insurance package policy to the insurances directly to the insurance provider promptly on demand. In case the Contractor fails to make such payment in time, the Authority may elect to pay the Contractor's share and adjust it against amounts payable to the Contractor under this Agreement;
- (h) in the case of occurrence of any event leading to an insurance claim, promptly follow the procedures specified by the insurance provider, and provide full cooperation and access to the insurance provider or its representative, to settle the claim expeditiously;
- (i) require all the Sub-Contractors providing equipment and materials or services to the Contractor or the Authority to obtain, maintain and keep in force during the time in which they are involved in the performance of the Works hereunder insurance coverage consistent with the Contractor's insurance obligations hereunder and the Contractor shall also be responsible for fulfilment of this requirement; and
- (j) the required insurance coverage and the Contractor's obligations-referred to shall in no way affect or limit the Contractor's liability with respect to its performance of the

Works. Nothing in this Section shall limit or relieve the Contractor of its liabilities and obligations under this Agreement.

Part V  
Force Majeure and Termination

## **Article 21**

### **Force Majeure**

#### **21.1 Force Majeure**

As used in this Agreement, the expression “Force Majeure” or “Force Majeure Event” shall mean occurrence in India of any or all of Non-Political Event, Indirect Political Event and Political Event, as defined in Clauses 21.2, 21.3 and 21.4 respectively, if it affects the performance by the Party claiming the benefit of Force Majeure (the “Affected Party”) of its obligations under this Agreement and which act or event (i) is beyond the reasonable control of the Affected Party, and (ii) the Affected Party could not have prevented or overcome by exercise of due diligence and following Good Industry Practice, and (iii) has Material Adverse Effect on the Affected Party.

#### **21.2 Non-Political Event**

A Non-Political Event shall mean one or more of the following acts or events:

- (a) act of God, epidemic, extremely adverse weather conditions, lightning, earthquake, landslide, cyclone, flood, volcanic eruption, chemical or radioactive contamination or ionising radiation, fire or explosion (to the extent of contamination or radiation or fire or explosion originating from a source external to the Site);
- (b) strikes or boycotts (other than those involving the Contractor, Sub- contractors or their respective employees/ representatives, or attributable to any act or omission of any of them) interrupting supplies and services to the Project Highway for a continuous period of 24 (twenty-four) hours and an aggregate period exceeding 10 (ten) days in an Accounting Year, and not being an Indirect Political Event set forth in Clause 21.3;
- (c) any failure or delay of a Sub-contractor but only to the extent caused by another Non-Political Event;
- (d) any judgement or order of any court of competent jurisdiction or statutory authority made against the Contractor in any proceedings for reasons other than (i) failure of the Contractor to comply with any Applicable Law or Applicable Permit, or (ii) on account of breach of any Applicable Law or Applicable Permit or of any contract, or (iii) enforcement of this Agreement, or (iv) exercise of any of its rights under this Agreement by the Authority;
- (e) the discovery of geological conditions, toxic contamination or archaeological remains on the Site that could not reasonably have been expected to be discovered through a site inspection; or
- (f) any event or circumstances of a nature analogous to any of the foregoing.

#### **21.3 Indirect Political Event**

An Indirect Political Event shall mean one or more of the following acts or events:

- (a) an act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, riot, insurrection, terrorist or military action, civil commotion or politically motivated sabotage;
- (b) industry-wide or State-wide strikes or industrial action for a continuous period of 24 (twenty-four) hours and exceeding an aggregate period of 10 (ten) days in an Accounting Year;
- (c) any civil commotion, boycott or political agitation which prevents construction of the Project Highway by the Contractor for an aggregate period exceeding 10 (ten) days in an Accounting Year;
- (d) any failure or delay of a Sub-contractor to the extent caused by any Indirect Political Event;
- (e) any Indirect Political Event that causes a Non-Political Event; or
- (f) any event or circumstances of a nature analogous to any of the foregoing.

#### **21.4 Political Event**

A Political Event shall mean one or more of the following acts or events by or on account of any Government Instrumentality:

- (a) Change in Law, only if consequences thereof cannot be dealt with under and in accordance with the provisions of Clause 19.17;
- (b) compulsory acquisition in national interest or expropriation of any Project Assets or rights of the Contractor or of the Sub-Contractors;
- (c) unlawful or unauthorised or without jurisdiction revocation of, or refusal to renew or grant without valid cause, any clearance, licence, permit, authorisation, no objection certificate, consent, approval or exemption required by the Contractor or any of the Sub-contractors to perform their respective obligations under this Agreement; provided that such delay, modification, denial, refusal or revocation did not result from the Contractor's or any Sub-contractor's inability or failure to comply with any condition relating to grant, maintenance or renewal of such clearance, licence, authorisation, no objection certificate, exemption, consent, approval or permit;
- (d) any failure or delay of a Sub-contractor but only to the extent caused by another Political Event; or
- (e) any event or circumstances of a nature analogous to any of the foregoing.

#### **21.5 Duty to report Force Majeure Event**

- (i) Upon occurrence of a Force Majeure Event, the Affected Party shall by notice report such occurrence to the other Party forthwith. Any notice pursuant hereto shall include full particulars of:
  - (a) the nature and extent of each Force Majeure Event which is the subject of any claim for relief under this Article 21 with evidence in support thereof;

- (b) the estimated duration and the effect or probable effect which such Force Majeure Event is having or will have on the Affected Party's performance of its obligations under this Agreement;
  - (c) the measures which the Affected Party is taking or proposes to take for alleviating the impact of such Force Majeure Event; and
  - (d) any other information relevant to the Affected Party's claim.
- (ii) The Affected Party shall not be entitled to any relief for or in respect of a Force Majeure Event unless it shall have notified the other Party of the occurrence of the Force Majeure Event as soon as reasonably practicable, and in any event no later than 10 (ten) days after the Affected Party knew, or ought reasonably to have known, of its occurrence, and shall have given particulars of the probable material effect that the Force Majeure Event is likely to have on the performance of its obligations under this Agreement.
  - (iii) For so long as the Affected Party continues to claim to be materially affected by such Force Majeure Event, it shall provide the other Party with regular (and not less than weekly) reports containing information as required by Clause 21.5 (i), and such other information as the other Party may reasonably request the Affected Party to provide.

#### **21.6 Effect of Force Majeure Event on the Agreement**

- (i) Upon the occurrence of any Force Majeure after the Appointed Date, the costs incurred and attributable to such event and directly relating to this Agreement (the "Force Majeure costs") shall be allocated and paid as follows:
  - (a) upon occurrence of a Non-Political Event, the Parties shall bear their respective Force Majeure costs and neither Party shall be required to pay to the other Party any costs thereof;
  - (b) upon occurrence of an Indirect Political Event, all Force Majeure costs attributable to such Indirect Political Event, and not exceeding the Insurance Cover for such Indirect Political Event, shall be borne by the Contractor, and to the extent Force Majeure costs exceed such Insurance Cover, one half of such excess amount shall be reimbursed by the Authority to the Contractor for the Force Majeure events; and
  - (c) upon occurrence of a Political Event, all Force Majeure costs attributable to such Political Event shall be reimbursed by the Authority to the Contractor.
  - (d) For the avoidance of doubt, Force Majeure costs may include costs directly attributable to the Force Majeure Event, but shall not include debt repayment obligations, if any, of the Contractor.
- (ii) Save and except as expressly provided in this Article 21, neither Party shall be liable in any manner whatsoever to the other Party in respect of any loss, damage, cost, expense, claims, demands and proceedings relating to or arising out of occurrence or existence of any Force Majeure Event or exercise of any right pursuant hereto.
- (iii) Upon the occurrence of any Force Majeure Event during the Construction Period, the Project Completion Schedule for and in respect of the affected Works shall be extended

on a day for day basis for such period as performance of the Contractor's obligations is affected on account of the Force Majeure Event or its subsisting effects.

#### **21.7 Termination Notice for Force Majeure Event**

- (i) If a Force Majeure Event subsists for a period of 60 (sixty) days or more within a continuous period of 120 (one hundred and twenty) days, either Party may in its discretion terminate this Agreement by issuing a Termination Notice to the other Party without being liable in any manner whatsoever, save as provided in this Article 21, and upon issue of such Termination Notice, this Agreement shall, notwithstanding anything to the contrary contained herein, stand terminated forthwith; provided that before issuing such Termination Notice, the Party intending to issue the Termination Notice shall inform the other Party of such intention and grant 15 (fifteen) days' time to make a representation, and may after the expiry of such 15 (fifteen) days period, whether or not it is in receipt of such representation, in its sole discretion issue the Termination Notice.

#### **21.8 Termination Payment for Force Majeure Event**

- (i) In the event of this Agreement being terminated on account of a Non-Political Event, the Termination Payment shall be an amount equal to the sum payable under Clause 23.5.

Provided that in the event Termination occurs during the Maintenance Period, the Authority's Engineer shall only determine the value of Works associated with Maintenance.

- (ii) If Termination is on account of an Indirect Political Event, the Termination Payment shall include:
  - (a) any sums due and payable under Clause 23.5; and
  - (b) the reasonable cost, as determined by the Authority's Engineer, of the Plant and Materials procured by the Contractor and transferred to the Authority for use in Construction or Maintenance, only if such Plant and Materials are in conformity with the Specifications and Standards;

Provided that in the event Termination occurs during the Maintenance Period, the Authority's Engineer shall only determine the value of Works associated with Maintenance.

- (iii) If Termination is on account of a Political Event, the Authority shall make a Termination Payment to the Contractor in an amount that would be payable under Clause 23.6 (ii) as if it were an Authority Default.

#### **21.9 Dispute resolution**

In the event that the Parties are unable to agree in good faith about the occurrence or existence of a Force Majeure Event, such Dispute shall be finally settled in accordance with the Dispute Resolution Procedure; provided that the burden of proof as to the occurrence or existence of such Force Majeure Event shall be upon the Party claiming relief and/ or excuse on account of such Force Majeure Event.

#### **21.10 Excuse from performance of obligations**

If the Affected Party is rendered wholly or partially unable to perform its obligations under this Agreement because of a Force Majeure Event, it shall be excused from performance of such of its obligations to the extent it is unable to perform on account of such Force Majeure Event; provided that:

- (a) the suspension of performance shall be of no greater scope and of no longer duration than is reasonably required by the Force Majeure Event;
- (b) the Affected Party shall make all reasonable efforts to mitigate or limit damage to the other Party arising out of or as a result of the existence or occurrence of such Force Majeure Event and to cure the same with due diligence; and
- (c) when the Affected Party is able to resume performance of its obligations under this Agreement, it shall give to the other Party notice to that effect and shall promptly resume performance of its obligations hereunder.

## **Article 22**

### **Suspension of Contractor's Rights**

#### **22.1 Suspension upon Contractor Default**

Upon occurrence of a Contractor Default, the Authority shall be entitled, without prejudice to its other rights and remedies under this Agreement including its rights of Termination hereunder, to (i) suspend carrying out of the Works or Maintenance or any part thereof, and (ii) carry out such Works or Maintenance itself or authorise any other person to exercise or perform the same on its behalf during such suspension (the "Suspension"). Suspension hereunder shall be effective forthwith upon issue of notice by the Authority to the Contractor and may extend up to a period not exceeding 90 (ninety) days from the date of issue of such notice.

#### **22.2 Authority to act on behalf of Contractor**

During the period of Suspension hereunder, all rights and liabilities vested in the Contractor in accordance with the provisions of this Agreement shall continue to vest therein and all things done or actions taken, including expenditure incurred by the Authority for discharging the obligations of the Contractor under and in accordance with this Agreement shall be deemed to have been done or taken for and on behalf of the Contractor and the Contractor undertakes to indemnify the Authority for all costs incurred during such period. The Contractor hereby licences and sub-licences respectively, the Authority or any other person authorised by it under Clause 22.1 to use during Suspension, all Intellectual Property belonging to or licensed to the Contractor with respect to the Project Highway and its design, engineering, construction and maintenance, and which is used or created by the Contractor in performing its obligations under the Agreement.

#### **22.3 Revocation of Suspension**

- (i) In the event that the Authority shall have rectified or removed the cause of Suspension within a period not exceeding 60 (sixty) days from the date of Suspension, it shall revoke the Suspension forthwith and restore all rights of the Contractor under this Agreement. For the avoidance of doubt, the Parties expressly agree that the Authority may, in its discretion, revoke the Suspension at any time, whether or not the cause of Suspension has been rectified or removed hereunder.
- (ii) Upon the Contractor having cured the Contractor Default within a period not exceeding 60 (sixty) days from the date of Suspension, the Authority shall revoke the Suspension forthwith and restore all rights of the Contractor under this Agreement.

#### **22.4 Termination**

- (i) At any time during the period of Suspension under this Article 22, the Contractor may by notice require the Authority to revoke the Suspension and issue a Termination Notice. The Authority shall, within 15 (fifteen) days of receipt of such notice, terminate this Agreement under and in accordance with Article 23.
- (ii) Notwithstanding anything to the contrary contained in this Agreement, in the event that Suspension is not revoked within 90 (ninety) days from the date of Suspension

hereunder, the Agreement shall, upon expiry of the aforesaid period, be deemed to have been terminated by mutual agreement of the Parties and all the provisions of this Agreement shall apply, mutatis mutandis, to such Termination as if a Termination Notice had been issued by the Authority upon occurrence of a Contractor Default.

## Article 23

### Termination

#### 23.1 Termination for Contractor Default

- (i) Save as otherwise provided in this Agreement, in the event that any of the defaults specified below shall have occurred, and the Contractor fails to cure the default within the Cure Period set forth below, or where no Cure Period is specified, then within a Cure Period of 60 (sixty) days, the Contractor shall be deemed to be in default of this Agreement (the “Contractor Default”), unless the default has occurred solely as a result of any breach of this Agreement by the Authority or due to Force Majeure. The defaults referred to herein shall include:
- (a) the Contractor fails to provide, extend or replenish, as the case may be, the Performance Security in accordance with this Agreement;
  - (b) after the replenishment or furnishing of fresh Performance Security in accordance with Clause 7.3, the Contractor fails to cure, within a Cure Period of 30 (thirty) days, the Contractor Default for which the whole or part of the Performance Security was appropriated;
  - (c) the Contractor does not achieve the latest outstanding Project Milestone due in accordance with the provisions of Schedule-J, subject to any Time Extension, and continues to be in default for 45 (forty five) days;
  - (d) the Contractor abandons or manifests intention to abandon the construction or Maintenance of the Project Highway without the prior written consent of the Authority;
  - (e) the Contractor fails to proceed with the Works in accordance with the provisions of Clause 10.1 or stops Works and/or the Maintenance for 30 (thirty) days without reflecting the same in the current programme and such stoppage has not been authorised by the Authority’s Engineer;
  - (f) the Project Completion Date does not occur within the period specified in Schedule-J for the Scheduled Completion Date, or any extension thereof;
  - (g) the Contractor fails to rectify any Defect, the non-rectification of which shall have a Material Adverse Effect on the Project, within the time specified in this Agreement or as directed by the Authority’s Engineer;
  - (h) the Contractor subcontracts the Works or any part thereof in violation of this Agreement or assigns any part of the Works or the Maintenance without the prior approval of the Authority;
  - (i) the Contractor creates any Encumbrance in breach of this Agreement;
  - (j) an execution levied on any of the assets of the Contractor has caused a Material Adverse Effect;

- (k) the Contractor is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for the Contractor or for the whole or material part of its assets that has a material bearing on the Project;
- (l) the Contractor has been, or is in the process of being liquidated, dissolved, wound-up, amalgamated or reconstituted in a manner that would cause, in the reasonable opinion of the Authority, a Material Adverse Effect;
- (m) a resolution for winding up or insolvency of the Contractor is passed, or any petition for winding up or insolvency of the Contractor is admitted by a court of competent jurisdiction and a provisional liquidator or receiver or interim resolution professional, as the case may be, is appointed and such order has not been set aside within 90 (ninety) days of the date thereof or the Contractor is ordered to be wound up by court except for the purpose of amalgamation or reconstruction; provided that, as part of such amalgamation or reconstruction, the entire property, assets and undertaking of the Contractor are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of the Contractor under this Agreement; and provided that:
  - i. the amalgamated or reconstructed entity has the capability and experience necessary for the performance of its obligations under this Agreement; and
  - ii. the amalgamated or reconstructed entity has the financial standing to perform its obligations under this Agreement and has a credit worthiness at least as good as that of the Contractor as at the Appointed Date;
- (n) any representation or warranty of the Contractor herein contained which is, as of the date hereof, found to be false or the Contractor is at any time hereafter found to be in breach or non-compliance thereof;
- (o) the Contractor submits to the Authority any statement, notice or other document, in written or electronic form, which has a material effect on the Authority's rights, obligations or interests and which is false in material particulars;
- (p) the Contractor has failed to fulfil any obligation, for which failure Termination has been specified in this Agreement; or
- (q) the Contractor commits a default in complying with any other provision of this Agreement if such a default causes a Material Adverse Effect on the Project or on the Authority.
- (r) gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an inducement or reward:
  - i. for doing or forbearing to do any action in relation to the Contract, or
  - ii. for showing or forbearing to show favour or disfavour to any person in relation to the Contract,

or if any of the Contractor's personnel, agents or subcontractors gives or offers to give (directly or indirectly) to any person any such inducement or reward as is described in this sub-paragraph (s). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination.

- (ii) Without prejudice to any other rights or remedies which the Authority may have under this Agreement, upon occurrence of a Contractor Default, the Authority shall be entitled to terminate this Agreement by issuing a Termination Notice to the Contractor; provided that before issuing the Termination Notice, the Authority shall by a notice inform the Contractor of its intention to issue such Termination Notice and grant 15 (fifteen) days to the Contractor to make a representation, and may after the expiry of such 15 (fifteen) days, whether or not it is in receipt of such representation, issue the Termination Notice.
- (iii) The following shall apply in respect of cure of any of the defaults and/ or breaches of the Agreement:
  - (a) The Cure Period shall commence from the date of the notice by the Authority to the Contractor asking the latter to cure the breach or default specified in such notice;
  - (b) The Cure Period provided in the Agreement shall not relieve the Contractor from liability for Damages caused by its breach or default;
  - (c) The Cure Period shall not in any way be extended by any period of suspension under the Agreement;
  - (d) If the cure of any breach by the Contractor requires any reasonable action by the Contractor that must be approved by the Authority hereunder the applicable Cure Period (and any liability of the Contractor for damages incurred) shall be extended by the period taken by the Authority to accord its required approval.
- (iv) After termination of this Agreement for Contractor Default, the Authority may complete the Works and/or arrange for any other entities to do so. The Authority and these entities may then use any Materials, Plant and equipment, Contractor's documents and other design documents made by or on behalf of the Contractor.

### **23.2 Termination for Authority Default**

- (i) In the event that any of the defaults specified below shall have occurred, and the Authority fails to cure such default within a Cure Period of 90 (ninety) days or such longer period as has been expressly provided in this Agreement, the Authority shall be deemed to be in default of this Agreement (the "Authority Default") unless the default has occurred as a result of any breach of this Agreement by the Contractor or due to Force Majeure. The defaults referred to herein shall include:
  - (a) the Authority commits a material default in complying with any of the provisions of this Agreement and such default has a Material Adverse Effect on the Contractor;
  - (b) the Authority has failed to make payment of any amount due and payable to the Contractor within the period specified in this Agreement;

- (c) the Authority has failed to provide, within a period of 180 (one hundred and eighty) days from the Appointed Date, the environmental clearances required for construction of the Project Highway;
  - (d) the Authority becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with its creditors, or carries on business under a receiver, trustee or manager for the benefit of its creditors, or if any act is done or event occurs which (under Applicable Laws) has a similar effect;
  - (e) the Authority repudiates this Agreement or otherwise takes any action that amounts to or manifests an irrevocable intention not to be bound by this Agreement;
  - (f) the Authority's Engineer fails to issue the relevant Interim Payment Certificate within 60 (sixty) days after receiving a statement and supporting documents;  
or
  - (g) the whole work is suspended by Authority beyond 120 (one hundred twenty) days for any reason which is not attributed to the Contractor.
- (ii) Without prejudice to any other right or remedy which the Contractor may have under this Agreement, upon occurrence of an Authority Default, the Contractor shall be entitled to terminate this Agreement by issuing a Termination Notice to the Authority; provided that before issuing the Termination Notice, the Contractor shall by a notice inform the Authority of its intention to issue the Termination Notice and grant 15 (fifteen) days to the Authority to make a representation, and may after the expiry of such 15 (fifteen) days, whether or not it is in receipt of such representation, issue the Termination Notice.

If on the consideration of the Authority's representation or otherwise, the contractor does not issue the Termination Notice on such 15th (fifteenth) day and prefers to continue with the project, it is deemed that the cause of action of the Termination Notice has been condoned by the Contractor and he would be deemed to have waived any claim and forfeited any right to any other remedy on that count or in relation to such action or omission.

### **23.3 Termination for Authority's convenience**

Notwithstanding anything stated hereinabove, the Authority may terminate this Agreement for convenience. The termination shall take effect 30 (thirty) days from the date of notice provided to the Contractor.

### **23.4 Requirements after Termination**

Upon Termination of this Agreement in accordance with the terms of this Article 23, the Contractor shall comply with and conform to the following:

- (a) deliver all relevant records, reports, Intellectual Property and other licences pertaining to the Works, Maintenance, other design documents;
- (b) transfer and/or deliver all Applicable Permits to the extent permissible under

Applicable Laws; and

(c) vacate the Site within 15 (fifteen) days.

### **23.5 Valuation of Unpaid Works**

- (i) Within a period of 45 (forty-five) days after Termination under Clause 23.1, 23.2 or 23.3, as the case may be, has taken effect, the Authority's Engineer shall proceed in accordance with Clause 18.5 to determine as follows the valuation of unpaid Works (the "Valuation of Unpaid Works"):
  - (a) value of the completed stage of the Works, less payments already made;
  - (b) reasonable value of the partially completed stages of works as on the date of Termination, only if such works conform with the Specifications and Standards; and
  - (c) value of Maintenance, if any, for completed months, less payments already made, and shall adjust from the sum thereof (i) any other amounts payable or recoverable, as the case may be, in accordance with the provisions of this Agreement; and (ii) all taxes due to be deducted at source.
- (ii) The Valuation of Unpaid Works shall be communicated to the Authority, with a copy to the Contractor, within a period of 30 (thirty) days from the date of Termination.

### **23.6 Termination Payment**

- (i) Upon Termination on account of Contractor's Default under Clause 23.1, the Authority shall:
  - (a) encash and appropriate the Performance Security, Additional Performance Security if any and Retention Money, or in the event the Contractor has failed to replenish or extend the Performance Security and Additional Performance Security if any, claim the amount stipulated in Clause 7.1, as agreed pre-determined compensation to the Authority for any losses, delays and cost of completing the Works and Maintenance, if any;
  - (b) encash and appropriate the Bank Guarantee, if any, for and in respect of the outstanding Advance Payment and interest thereon; and
  - (c) pay to the Contractor, by way of Termination Payment, an amount equivalent to the Valuation of Unpaid Works after adjusting any other sums payable or recoverable, as the case may be, in accordance with the provisions of this Agreement.
- (ii) Upon Termination on account of an Authority Default under Clause 23.2 or for Authority's convenience under Clause 23.3, the Authority shall:
  - a) return the Performance Security, Additional Performance Security and Retention Money forthwith;
  - (b) encash and appropriate the bank guarantee, if any, for and in respect of the outstanding Advance Payment; and
  - (c) pay to the Contractor, by way of Termination Payment, an amount equal to:

- i. Valuation of Unpaid Works;
- ii. the reasonable cost of temporary works, as determined by the Authority's Engineer; and
- iii. 10% (ten per cent) of the cost of the Works and Maintenance that are not commenced or not completed,

and shall adjust from the sum thereof (i) any other amounts payable or recoverable, as the case may be, in accordance with the provisions of this Agreement, and (ii) all taxes due to be deducted at source.

- (iii) Termination Payment shall become due and payable to the Contractor within 30 (thirty) days of a demand being made by the Contractor to the Authority with the necessary particulars, and in the event of any delay, the Authority shall pay interest at Bank Rate + 3% per annum, on the amount of Termination Payment remaining unpaid; provided that such delay shall not exceed 90 (ninety) days. For the avoidance of doubt, it is expressly agreed that Termination Payment shall constitute full discharge by the Authority of its payment obligations in respect thereof hereunder.
- (iv) The Contractor expressly agrees that Termination Payment under this Article 23 shall constitute a full and final settlement of all claims of the Contractor on account of Termination of this Agreement and that it shall not have any further right or claim under any law, treaty, convention, contract or otherwise.

### **23.7 Other rights and obligations of the Parties**

Upon Termination for any reason whatsoever:

- (a) property and ownership in all Materials, Plant and Works and the Project Highway shall, as between the Contractor and the Authority, vest in the Authority in whole; provided that the foregoing shall be without prejudice to Clause 23.6;
- (b) risk of loss or damage to any Materials, Plant or Works and the care and custody thereof shall pass from the Contractor to the Authority; and
- (c) the Authority shall be entitled to restrain the Contractor and any person claiming through or under the Agreement from entering upon the Site or any part of the Project, which have not been vested in the Authority in accordance with the provisions of this Agreement.

### **23.8 Survival of rights**

Notwithstanding anything to the contrary contained in this Agreement any Termination pursuant to the provisions of this Agreement shall be without prejudice to the accrued rights of either Party including its right to claim and recover money damages, insurance proceeds, security deposits, and other rights and remedies, which it may have in law or Agreement. All rights and obligations of either Party under this Agreement, including Termination Payments, shall survive the Termination to the extent such survival is necessary for giving effect to such rights and obligations.

### **23.9 Foreclosure with mutual consent**

- (i) Without prejudice to any provision of this Agreement, the Authority and Contractor may foreclose this Agreement by mutual consent in circumstances which does not constitute either party's default without any liability or consequential future liability for either party.
- (ii) Should a Party intend to foreclose this Agreement by mutual consent, the intending Party shall issue a notice to the other Party and upon issuance of such notice, the other Party may within 15 days from receipt of such notice either agree to such foreclosure or raise objection(s) to the same by intimating either of the two possible positions to the intending Party in writing.
- (iii) In either case of the other Party agreeing to the proposed foreclosure or otherwise, the Parties may negotiate the proposed foreclosure and sign a Supplementary Agreement for foreclosure to the main Contract Agreement within 30 (thirty) days of the date agreeing by both Parties. Foreclosure shall not come into effect unless and otherwise Supplementary Agreement is signed.
- (iv) Any attempt or endeavour for foreclosure by mutual agreement shall be without prejudice to the rights and obligations of the Parties herein and the factum of such an attempt or exercise shall not stop either of the Parties from discharging their contractual obligations under this Agreement.
- (v) For the avoidance of doubt, it is clarified that such foreclosure will be without prejudice to the Contractor and shall not affect the Contractor in any way if it wishes to bid in future projects of the Authority.

Part VI  
Other Provisions

## **Article 24**

### **Assignment and Charges**

#### **24.1 Restrictions on assignment and charges**

This Agreement shall not be assigned by the Contractor to any person, save and except with the prior consent in writing of the Authority, which consent the Authority shall be entitled to decline without assigning any reason.

#### **24.2 Hypothecation of Materials or Plant**

Notwithstanding the provisions of Clause 24.1, the Contractor may pledge or hypothecate to its lenders, any Materials or Plant prior to their incorporation in the Works. Further, the Contractor may, by written notice to the Authority, assign its right to receive payments under this Agreement either absolutely or by way of charge, to any person providing financing to the Contractor in connection with the performance of the Contractor's obligations under this Agreement. The Contractor acknowledges that any such assignment by the Contractor shall not relieve the Contractor from any obligations, duty or responsibility under this Agreement.

## Article 25

### Liability and Indemnity

#### 25.1 General indemnity

- (i) The Contractor will indemnify, defend, save and hold harmless the Authority and its officers, servants, agents, Government Instrumentalities and Government owned and/or controlled entities/enterprises, (the “Authority Indemnified Persons”) against any and all suits, proceedings, actions, demands and third party claims for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by the Contractor of any of its obligations under this Agreement or from any negligence under the Agreement, including any errors or deficiencies in the design documents, or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of this Agreement on the part of the Authority Indemnified Persons.

#### 25.2 Indemnity by the Contractor

- (i) Without limiting the generality of Clause 25.1, the Contractor shall fully indemnify, hold harmless and defend the Authority and the Authority Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - (a) failure of the Contractor to comply with Applicable Laws and Applicable Permits;
  - (b) payment of taxes required to be made by the Contractor in respect of the income or other taxes of the Sub-contractors, suppliers and representatives; or
  - (c) non-payment of amounts due because of Materials or services furnished to the Contractor or any of its Sub-contractors which are payable by the Contractor or any of its Sub-contractors.
- (ii) Without limiting the generality of the provisions of this Article 25, the Contractor shall fully indemnify, hold harmless and defend the Authority Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which the Authority Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by the Contractor or by the Sub-contractors in performing the Contractor’s obligations or in any way incorporated in or related to the Project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, the Contractor shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, the Contractor shall promptly make every reasonable effort to secure for the Authority a licence, at no cost to the Authority, authorising continued use of the infringing work. If the Contractor is unable to secure such licence

within a reasonable time, the Contractor shall, at its own expense, and without impairing the Specifications and Standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process or modify the same so that it becomes non-infringing.

### **25.3 Notice and contest of claims**

In the event that either Party receives a claim or demand from a third party in respect of which it is entitled to the benefit of an indemnity under this Article 25 (the “Indemnified Party”) it shall notify the other Party (the “Indemnifying Party”) within 15 (fifteen) days of receipt of the claim or demand and shall not settle or pay the claim without the prior approval of the Indemnifying Party, which approval shall not be unreasonably withheld or delayed. If the Indemnifying Party wishes to contest or dispute the claim or demand, it may conduct the proceedings in the name of the Indemnified Party, subject to the Indemnified Party being secured against any costs involved, to its reasonable satisfaction.

### **25.4 Defence of claims**

- (i) The Indemnified Party shall have the right, but not the obligation, to contest, defend and litigate any claim, action, suit or proceeding by any third party alleged or asserted against such Party in respect of, resulting from, related to or arising out of any matter for which it is entitled to be indemnified hereunder, and reasonable costs and expenses thereof shall be indemnified by the Indemnifying Party. If the Indemnifying Party acknowledges in writing its obligation to indemnify the Indemnified Party in respect of loss to the full extent provided by this Article 25, the Indemnifying Party shall be entitled, at its option, to assume and control the defence of such claim, action, suit or proceeding, liabilities, payments and obligations at its expense and through the counsel of its choice; provided it gives prompt notice of its intention to do so to the Indemnified Party and reimburses the Indemnified Party for the reasonable cost and expenses incurred by the Indemnified Party prior to the assumption by the Indemnifying Party of such defence. The Indemnifying Party shall not be entitled to settle or compromise any claim, demand, action, suit or proceeding without the prior written consent of the Indemnified Party, unless the Indemnifying Party provides such security to the Indemnified Party as shall be reasonably required by the Indemnified Party to secure the loss to be indemnified hereunder to the extent so compromised or settled.
- (ii) If the Indemnifying Party has exercised its rights under Clause 25.3, the Indemnified Party shall not be entitled to settle or compromise any claim, action, suit or proceeding without the prior written consent of the Indemnifying Party (which consent shall not be unreasonably withheld or delayed).
- (iii) If the Indemnifying Party exercises its rights under Clause 25.3, the Indemnified Party shall nevertheless have the right to employ its own counsel, and such counsel may participate in such action, but the fees and expenses of such counsel shall be at the expense of the Indemnified Party, when and as incurred, unless:
  - (a) the employment of counsel by such party has been authorised in writing by the Indemnifying Party; or

- (b) the Indemnified Party shall have reasonably concluded that there may be a conflict of interest between the Indemnifying Party and the Indemnified Party in the conduct of the defence of such action; or
- (c) the Indemnifying Party shall not, in fact, have employed independent counsel reasonably satisfactory to the Indemnified Party, to assume the defence of such action and shall have been so notified by the Indemnified Party; or
- (d) the Indemnified Party shall have reasonably concluded and specifically notified the Indemnifying Party either:
  - i. that there may be specific defences available to it which are different from or additional to those available to the Indemnifying Party; or
  - ii. that such claim, action, suit or proceeding involves or could have a material adverse effect upon it beyond the scope of this Agreement:

Provided that if Sub-clauses (b), (c) or (d) of this Clause 25.4 (iii) shall be applicable, the counsel for the Indemnified Party shall have the right to direct the defence of such claim, demand, action, suit or proceeding on behalf of the Indemnified Party, and the reasonable fees and disbursements of such counsel shall constitute legal or other expenses hereunder.

#### **25.5 Survival on Termination**

The provisions of this Article 25 shall survive Termination.

## Article 26

### Dispute Resolution

#### 26.1 Dispute Resolution

- (i) In the event of any dispute, difference or controversy of whatever nature howsoever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the "Dispute") either Party may call upon the Authority's Engineer, to mediate and assist the Parties in arriving at an amicable settlement thereof.
- (ii) The Parties agree to use their best efforts for resolving all Disputes arising under or in respect of this Agreement promptly, equitably and in good faith, and further agree to provide each other with reasonable access during normal business hours to all non-privileged records, information and data pertaining to any Dispute.

#### (iii) Dispute Resolution board

Failing mediation by the Authority's Engineer or without intervention of the the Authority's Engineer either party may require such dispute or to be referred to the Dispute Resolution Board ("DRB") in accordance with the procedure set forth in Schedule-S to the contract agreement, Decision(s) of the Dispute resolution board shall be binding on both parties who shall promptly give effect unless and until the same is revised/modified, as herein after provided, in Conciliation /Arbitral Tribunal

#### 26.2 Conciliation

In the event of any Dispute between the Parties, either Party may call upon the Authority's Engineer, or such other person as the Parties may mutually agree upon (the "Conciliator") to mediate and assist the Parties in arriving at an amicable settlement thereof. Failing mediation by the Conciliator or without the intervention of the Conciliator, either Party may require such Dispute to be referred to the Chairman of the Authority and the Chairman of the Board of Directors of the Contractor for amicable settlement, and upon such reference, the said persons shall meet no later than 7 (seven) business days from the date of reference to discuss and attempt to amicably resolve the Dispute. If such meeting does not take place within the 30 (thirty) business day period or the Dispute is not amicably settled within 30 (thirty) days of the meeting or the Dispute is not resolved as evidenced by the signing of written terms of settlement within 30 (thirty) days of the notice in writing referred to in Clause 26.1.1 or such longer period as may be mutually agreed by the Parties, either Party may refer the Dispute to arbitration in accordance with the provisions of Clause 26.3 but before resorting to such arbitration, the parties agree to explore conciliation by the Conciliation Committees of Independent Experts set up by the Authority in accordance with the procedure decided by the panel of such experts and notified by the Authority on its website including its subsequent amendments. In the event of the conciliation proceedings being successful, the parties to the dispute would sign the written settlement agreement and the conciliators would authenticate the same. Such settlement agreement would then be binding on the parties in terms of Section 73 of the Arbitration Act. In case of failure of the conciliation process even at the level of the

Conciliation Committee, either party may refer the Dispute to arbitration in accordance with the provisions of Clause 26.3.

### **26.3 Arbitration**

**26.3.1** Any dispute which is not resolved amicably by conciliation as provided in clause 26.2 shall be finally settled by arbitration as set forth below:

- (i) The dispute shall be finally referred to Society for Affordable Resolution of Dispute (herein after called as SAROD) , a society registered under Society act 1860 vide Registration no. S/RS/SW1049/2013 duly represented by Authority and National Highways Builders Federation (NHBF). The dispute shall be dealt with in terms of Rules of SAROD. The detailed procedure for conducting Arbitration shall be governed by the Rules of SAROD and provisions of Arbitration & Conciliation Act, 1996, as amended from time to time. The Dispute shall be governed by Substantive Law of India.
- (ii) The appointment of Tribunal, Code of conduct for Arbitrators and fees and expenses of SAROD and Arbitral Tribunal shall also be governed by the Rules of SAROD as amended from time to time. The rules of SAROD are placed at Annexure to schedule S.
- (iii) Subject to the provisions of THE LIMITATION ACT, 1963, as amended from time to time, Arbitration may be commenced during or after the Contract Period, provided that the obligations of Authority and the Contractor shall not be altered by reason of the Arbitration being conducted during the Contract Period.
- (iv) The venue of Arbitration shall be New Delhi or a place selected by governing body of SAROD and the language for all documents and communications between the parties shall be English.
- (v) The expenses incurred by each party in connection with the preparation, presentation, etc., of arbitral proceedings shall be shared by each party itself.

**26.3.2** The arbitrators shall make a reasoned award (the "Award"). Any Award made in any arbitration held pursuant to this Article 26 shall be final and binding on the Parties as from the date it is made, and the Contractor and the Authority agree and undertake to carry out such Award without delay.

**26.3.3** The Contractor and the Authority agree that an Award may be enforced against the Contractor and/or the Authority, as the case may be, and their respective assets wherever situated.

**26.3.4** This Agreement and the rights and obligations of the Parties shall remain in full force and effect, pending the Award in any arbitration proceedings hereunder. Further, the parties unconditionally acknowledge and agree that notwithstanding any dispute between them, each party shall proceed with the performance of its respective obligations, pending resolution of Dispute in accordance with this Article.

### **26.4 Adjudication by Regulatory Authority, Tribunal or Commission**

In the event of constitution of a statutory regulatory authority, tribunal or commission, as the case may be, with powers to adjudicate upon disputes between the Contractor and the Authority, all Disputes arising after such constitution shall, instead of reference to arbitration under Clause 26.3, be adjudicated upon by such regulatory authority, tribunal or commission in accordance with the Applicable Law and all references to Dispute Resolution Procedure

shall be construed accordingly. For the avoidance of doubt, the Parties hereto agree that the adjudication hereunder shall not be final and binding until an appeal against such adjudication has been decided by an appellate tribunal or court of competent jurisdiction, as the case may be, or no such appeal has been preferred within the time specified in the Applicable Law.

## **Article 27**

### **Miscellaneous**

#### **27.1 Governing law and jurisdiction**

This Agreement shall be construed and interpreted in accordance with and governed by the laws of India, and the courts at Uttarakhand shall have exclusive jurisdiction over matters arising out of or relating to this Agreement.

#### **27.2 Waiver of immunity**

Each Party unconditionally and irrevocably:

- (a) agrees that the execution, delivery and performance by it of this Agreement constitute commercial acts done and performed for commercial purpose;
- (b) agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transaction contemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of the Party with respect to its assets;
- (c) waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be attributed to it in any jurisdiction; and
- (d) consents generally in respect of the enforcement of any judgement or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues whatsoever irrespective of their use or intended use of any order or judgement that may be made or given in connection therewith).

#### **27.3 Delayed payments**

The Parties hereto agree that payments due from one Party to the other Party under the provisions of this Agreement shall be made within the period set forth therein, and if no such period is specified, within 30 (thirty) days of receiving a demand along with the necessary particulars. In the event of delay beyond such period, the defaulting Party shall pay interest for the period of delay calculated at a rate equal to Base Rate plus 2 (two) percent, calculated at quarterly rests, and recovery thereof shall be without prejudice to the rights of the Parties under this Agreement including Termination thereof.

#### **27.4 Waiver**

- (i) Waiver, including partial or conditional waiver, by either Party of any default by the other Party in the observance and performance of any provision of or obligations under this Agreement:-
  - (a) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Agreement;
  - (b) shall not be effective unless it is in writing and executed by a duly authorized representative of the Party; and

- (c) shall not affect the validity or enforceability of this Agreement in any manner.
- (ii) Neither the failure by either Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation thereunder nor time or other indulgence granted by a Party to the other Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

#### **27.5 Liability for review of Documents and Drawings**

Except to the extent expressly provided in this Agreement:

- (a) no review, comment or approval by the Authority or the Authority's Engineer of any Document or Drawing submitted by the Contractor nor any observation or inspection of the construction, or maintenance of the Project Highway nor the failure to review, approve, comment, observe or inspect hereunder shall relieve or absolve the Contractor from its obligations, duties and liabilities under this Agreement, the Applicable Laws and Applicable Permits; and
- (b) the Authority shall not be liable to the Contractor by reason of any review, comment, approval, observation or inspection referred to in Sub-clause (a) above.

#### **27.6 Exclusion of implied warranties etc.**

This Agreement expressly excludes any warranty, condition or other undertaking implied at law or by custom or otherwise arising out of any other agreement between the Parties or any representation by either Party not contained in a binding legal agreement executed by both Parties.

#### **27.7 Survival**

- (i) Termination shall:
  - (a) not relieve the Contractor or the Authority, as the case may be, of any obligations hereunder which expressly or by implication survive Termination hereof; and
  - (b) except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party, not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of, or caused by, acts or omissions of such Party prior to the effectiveness of such Termination or arising out of such Termination.
- (ii) All obligations surviving Termination shall only survive for a period of 3 (three) years following the date of such Termination.

#### **27.8 Entire Agreement**

This Agreement and the Schedules together constitute a complete and exclusive statement of the terms of the agreement between the Parties on the subject hereof, and no amendment or modification hereto shall be valid and effective unless such modification or amendment is agreed to in writing by the Parties and duly executed by persons especially empowered in this behalf by the respective Parties. All prior written or oral understandings, offers or other communications of every kind pertaining to this Agreement are abrogated and withdrawn. For the avoidance of doubt, the Parties hereto agree that any obligations of the Contractor

arising from the Request for Qualification or Request for Proposals, as the case may be, shall be deemed to form part of this Agreement and treated as such.

#### **27.9 Severability**

If for any reason whatever, any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner, and the Parties will negotiate in good faith with a view to agreeing to one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to the Dispute Resolution Procedure set forth under this Agreement or otherwise.

#### **27.10 No partnership**

This Agreement shall not be interpreted or construed to create an association, joint venture or partnership between the Parties, or to impose any partnership obligation or liability upon either Party, and neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

#### **27.11 Third parties**

This Agreement is intended solely for the benefit of the Parties and their respective successors and permitted assigns, and nothing in this Agreement shall be construed to create any duty to, standard of care with reference to, or any liability to, any person not a Party to this Agreement.

#### **27.12 Successors and assigns .**

This Agreement shall be binding upon, and inure to the benefit of the Parties and their respective successors and permitted assigns.

#### **27.13 Notices .**

Any notice or other communication to be given by any Party to the other Party under or in connection with the matters contemplated by this Agreement shall be in writing and shall:

- (a) in the case of the Contractor, be given by facsimile or e-mail and by letter delivered by hand to the address given and marked for attention of the person set out below or to such other person as the Contractor may from time to time designate by notice to the Authority; provided that notices or other communications to be given to an address outside [Delhi] may, if they are subsequently confirmed by sending a copy thereof by registered acknowledgement due, air mail or by courier, be sent by facsimile or e-mail to the person as the Contractor may from time to time designate by notice to the Authority;
- (b) in the case of the Authority, be given by facsimile or e-mail and by letter delivered by hand and be addressed to the [Chairman] of the Authority with a copy delivered to the Authority Representative or such other person as the Authority may from time to time

designate by notice to the Contractor; provided that if the Contractor does not have an office in [Delhi] it may send such notice by facsimile or e-mail and by registered acknowledgement due, air mail or by courier; and

- (c) any notice or communication by a Party to the other Party, given in accordance herewith, shall be deemed to have been delivered when in the normal course of post it ought to have been delivered and in all other cases, it shall be deemed to have been delivered on the actual date and time of delivery; provided that in the case of facsimile or e-mail, it shall be deemed to have been delivered on the working day following the date of its delivery.

#### **27.14 Language**

All notices required to be given by one Party to the other Party and all other communications, Documentation and proceedings which are in any way relevant to this Agreement shall be in writing and in English language.

#### **27.15 Counterparts**

This Agreement may be executed in two counterparts, each of which, when executed and delivered, shall constitute an original of this Agreement.

#### **27.16 Confidentiality**

The Parties shall treat the details of this Agreement as private and confidential, except to the extent necessary to carry out obligations under it or to comply with Applicable Laws. The Contractor shall not publish, permit to be published, or disclose any particulars of the Works in any trade or technical paper or elsewhere without the previous agreement of the Authority.

#### **27.17 Copyright and Intellectual Property rights**

- (i) As between the Parties, the Contractor shall retain the copyright and other Intellectual Property rights in the Contractor's documents and other design documents made by (or on behalf of) the Contractor. The Contractor shall be deemed (by signing this Agreement) to give to the Authority a non-terminable transferable non-exclusive royalty-free licence to copy, use and communicate the Contractor's documents, including making and using modifications of them. This licence shall:
  - (a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works;
  - (b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works; and
  - (c) in the case of Contractor's documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by this Agreement, including replacements of any computers supplied by the Contractor.
- (ii) The Contractor's documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor's consent, be used, copied or

communicated to a third party by (or on behalf of) the Authority for purposes other than those permitted under this Clause 27.17.

- (iii) As between the Parties, the Authority shall retain the copyright and other intellectual property rights in this Agreement and other documents made by (or on behalf of) the Authority. The Contractor may, at its cost, copy, use, and obtain communication of these documents for the purposes of this Agreement. They shall not, without the Authority's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the contract.

#### **27.18 Limitation of Liability**

- (i) Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contract or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with this Agreement, save and except as provided under Articles 23 and 25.
- (ii) The total liability of one Party to the other Party under and in accordance with the provisions of this Agreement, save and except as provided in Articles 23 and 25, shall not exceed the Contract Price. For the avoidance of doubt, this Clause shall not limit the liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.

#### **27.19 Care and Supply of Documents**

- (i) Each of the Contractor's documents shall be in the custody and care of the Contractor, unless and until taken over by the Authority. Unless otherwise stated in the Agreement, the Contractor shall supply to the Authority 2 (two) copies of the each of the Contractor's documents.
- (ii) The Contractor shall keep, on the Site, a copy of the Agreement, publication named in the Authority's requirements, the Contractor's documents, and variations and other communications given under the Agreement. The Authority's personnel shall have the right of access to all these documents at all reasonable times.
- (iii) If a Party becomes aware of an error or defect of a technical nature in a document which was prepared for use in executing the Works, the Party shall promptly give notice to the other party of such error or defect.

#### **27.20 Authority's Use of Contractor's Documents.**

- (i) As between the Parties, the Contractor shall retain the copyright and other Intellectual Property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.
- (ii) The Contractor hereby gives to the Authority a non-terminable transferable nonexclusive royalty-free license to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This license shall:
  - (a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,

- (b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and
  - (c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contractor, including replacements of any computers supplied by the Contractor.
- (iii) The Contractor's Documents and other design documents made by or on behalf of the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Authority for purposes other than those permitted under this Sub-Clause.

#### **27.21 Contractor's Use of Authority's Documents**

As between the Parties, the Authority shall retain the copyright and other intellectual property rights in the Authority's requirements and other Documents made by (or on behalf of) the Authority. The Contractor may, at its cost copy, use, and obtain communication of these documents for the purpose of the Agreement. They shall not without the Authority's consent, be copied, used or communicating to a third party by the Contractor, except as necessary for the purposes of the Agreement.

#### **27.22 Access to the Site by Others**

The Contractor shall, at all times, afford access to the Site to the authorized representatives of the Authority, the Authority's Engineer and anyone else authorized by the Authority to access the site and to the persons duly authorized by any Governmental Agency having jurisdiction over the Project, including those concerned with safety, security or environmental protection to inspect the Project Highway and to investigate any matter within their authority and upon reasonable notice, the Contractor shall provide to such persons reasonable assistance necessary to carry out their respective duties and functions with minimum disruption to the construction, operation and maintenance of the Project Highway consistent with the purpose for which such persons have gained such access to the Site.

#### **27.23 Term**

This Agreement shall come into force and effect from the date first hereinabove written and shall remain in force and effect till the Termination Date i.e. the Parties perform all their respective obligations or is terminated by any of the Parties for the reasons and in the manner provided for in the Agreement.

#### **27.24 Amendments**

The Agreement may not be supplemented, amended, modified or changed except by an instrument in writing signed by the Contractor and the Authority and expressed to be a supplement, modification or change to the Agreement.

#### **27.25 Representation and Bribes**

The Contractor represents and warrants to the Authority that:

- (a) No representation or warranty by the Contractor contained herein or in any other document furnished by it to the Authority, or to any Governmental Instrumentality in relation to Applicable Permits contains or will contain any untrue statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading; and
- (b) It warrants that no sums, in cash or kind, have been paid or will be paid by or on behalf of the Contractor, to any person by way of fees, commission or otherwise for securing or entering into the Contractor for influencing or attempting to influence any officer or employee of the Authority or GOI in connection therewith.

**27.26 No Agency**

The Agreement does not constitute either Party as the agent, partner or legal representative of the other for any purposes whatsoever, and neither Party shall have any express or implied right or authority to assume or to create any obligation or responsibility on behalf of or in the name of the other Party.

# Schedules

# **Schedule: A**



# MINISTRY OF ROAD TRANSPORT AND HIGHWAYS

*Government of India*

Construction of 4 laning of Rishikesh Bypass from Design Chainage km 529+750 (Near Teenpani Flyover on NH-7) to Design Chainage km 542+420 (Near Kharasrote Bridge), passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km). on EPC mode.

## **TECHNICAL SCHEDULES (A, B, C, D and H)**

**APRIL 2026**

G-5 & G-6, Sector – 10, Dwarka, New Delhi – 110 075

**Schedule-A**

(See Clause 10.1)

**SITE OF THE PROJECT**

**1 The Site**

- 1.1 Site of the two Lane/Four Lane Project Highway shall include the land, buildings, Structures and road works as described in **Annex-I** of this Schedule-A.
- 1.2 The dates of handing over the Right of Way to the Contractor are specified in **Annex-II** of this Schedule-A.
- 1.3 An inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on, or attached to, the Site shall be prepared jointly by the Authority Representative and the Contractor, and such inventory shall form part of the memorandum referred to in Clause 8.2.1 of the Agreement.
- 1.4 The alignment plans of the Project Highway are specified in **Annex-III**. In the case of sections where no modification in the existing alignment of the Project Highway is contemplated, the alignment plan has not been provided. Alignment plans have only been given for sections where the existing alignment is proposed to be upgraded. The proposed profile of the Project Highways shall be followed by the Contractor with minimum FRL as indicated in the alignment plan. The Contractor, however, may improve/upgrade the Road Profile as including in **Annex-III** based on the site/design requirement.
- 1.5 The status of the environment clearances are given in Annex-IV.

**Annex - I**

(Schedule-A)

**Site****1. The Site**

Project alignment starts from NH-7 at it's Km.529+600 (NH-7) near Sahab Nagar (Teenpani Flyover) village Design Chainage 529+750 with trumpet interchange. Project alignment terminate on Kharasrote bridge at km. 542+420 on the existing NH-34 at Dhalwala. Design length of the project road is 12.67 Km. It Crosses Rishikesh – Bhaniawala road at Km. 539+065 and crosses NH-34 at Km. 541+665 near Dhalwala with rotary junction arrangement.

Location	Easting	Northing
Km.529+750 (NH-7) near Sahabnagar (Teen pani flyover)	231042.045	3329468.36
Km.542+420 (NH-7) at Kharasrote Bridge on existing NH-34	239946.175	3335870.9

**1.1 Description of Project Highway**

The project road takes off from existing NH-7 forming T junction at Sahabnagar near teenpani flyover with trumpet interchange arrangement. Project Road starts at design km. 529+750 (NH-7) with an trumpet interchange with existing NH-7 near Sahabnagar Teenpani flyover. Project road end at design km. 542+420 on NH-34 after the Kharasrote bridge. Design length of the project road is 12.65 Km. Instant project road runs at boundary of forest area and Builtup area of Rishikesh. The project road is completely green field road. The project stretch lies geographically within Dehradun and Tehri district in the state of Uttarakhand. It traverses through nearby villages of Khairy kalan, Garhimai Chowk, Bhattowala Khairikhurd, Shyampur, Gumaniwala, Dhalwala Villages in district Dehradun and district Tehri.

**1.2 Terrain**

The proposed Greenfield alignment traverses through plain and rolling terrain. The Land use pattern along the proposed alignment is mainly forest with few scattered nearby built-up areas in between.

**2. Land**

S. No	Existing Chainage		Proposed Chainage		Existing ROW (m)	Proposed ROW (m)
	From	To	From	To		
1	Sahibganj (Teenpani flyover)	Kharasrote bridge	529+750 (NH-7)	542+420 (NH-7)	nil	30 - 50

The site of the project highway comprises the land (sum total of land already in possession and land to be possessed) is detailed in **Annex-II** of this Schedule A.

The land, carriageway and structures comprising the Site are described below. (An Index Map of the Project Highway is given below.

Index Map of Project Highway

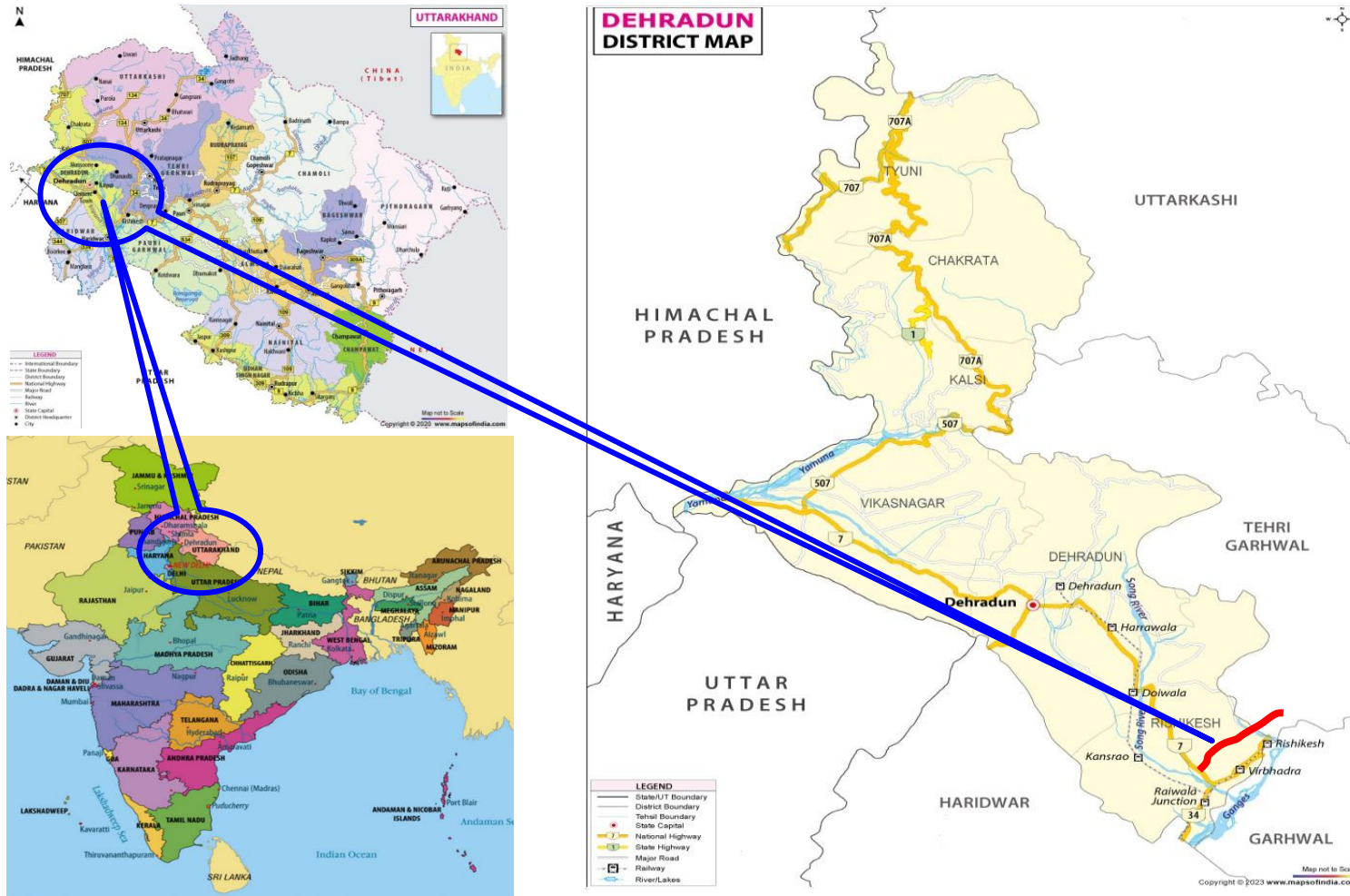


Figure -1 : Project Index Map

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km). **A.131**

### 3. Carriageway

Project Highway originate from NH-07 at it's 529+750 and NH-07 is 4 lane divided carriageway. Project road terminates at 542+420 on NH-34 which is also 2 lane divided carriageway. It crosses NH-539 in between which is intermediate lane carriageway. Carriageway details of existing road are hereunder :

#### a) 4-Lane divided carriageway

Existing Chainage		C/way width (m)	Midian width (m)	Shoulder (m)			
				Paved		Footpath/ Earthen shoulder	
From	To				LHS	RHS	
529+750	-	2x7.50	4.0	1.50	1.50	2.0	2.0
Dehradun Baniyawala		2x7.50	1.50	1.50	1.50	2.0	2.0

#### b) 2 Lane carriageway

Existing Chainage		C/way width (m)	Shoulder (m)			
			Paved		Earthen	
From	To		LHS	RHS	LHS	RHS
NH-34		10	-	-	1.5	1.5

### 4. Major Bridges

Sl. No.	Chainage (km)	Type of Structures		No. of Spans with span length in m	Width (m)
		Sub structure	Super structure		
1	227+950	Box Type & Hume Pipe	RCC Box	9x3.5+8x1.2mdia+12x3.5	7.6

### 5. Road over-bridges (ROB)/Road under-bridges (RUB)

Sl. No.	Design Chainage (km)	Type of Structures		No. of Spans with span length in m	Width (m)
		Sub structure	Super structure		
			nil		

### 6. Grade separators

The site includes the following Flyover given below:

Sl. No.	Design Chainage (km)	Type of Structures		No. of Spans with span length in m	Overall width (m)	Vertical clearance
		Sub structure	Super structure			
Nil						

### 7. Minor Bridges

The Site includes the following minor bridges:

Sl. No.	Design Chainage (km)	Type of Structures			No. of Spans with span length in (m)	Width (m)	Remarks
		Foundation	Sub structure	Super structure			
Nil							

**8. Railway Level Crossing**

Sl. No	Location	Details of Railway Line	Remarks
Nil			

**9. Underpasses (Vehicular, non-vehicular):-****SVUP**

Sl. No.	Existing Chainage (km)	Type of Structures	No. of Spans with span length in (m)	Width (m)	Remarks
	529+650	Box Type	1x7.0x4		SVUP

**10. Culverts: -**

The Site has the following culverts:

## a) Details of Existing Pipe Culverts

Sr. No.	Ex. Chainage (Km)	Type of Culvert	Total Length (m)	Span/Opening with Span Length (No. x Length) (m)	Width of Culvert (m)	Remarks
1	531+785 NH-7	HPC		1x1.2 Dia	26m	

## b) Detail of Existing Box Culverts

Sr. No.	Ex. Chainage (Km)	Type of Culvert	Total Length (m)	Span/Opening with Span Length (No. x Length) (m)	Width of Culvert (m)	Remarks
1	529+690 NH-7	Box	4	1x4x1.60	50m	

**11. Bus bays**

The details of bus bays on the Site are as follows:

S. No.	Chainage (km)	Length (m)	Location/Side
NIL			

**12. Truck Lay byes**

The details of truck lay byes are as follows:

S. No.	Chainage (km)	Length (m)	Location/Side
NIL			

**13. Road side drains**

The details of the roadside drains are as follows:

S. No.	Location		Type	
	From km	to km	Masonry/cc (Pucca)	Earthen (Kutchra)
Nil				

**14. Major junctions**

The details of major junctions are as follows:

S. No.	Existing Chainage (Km)	Design Chainage (Ch)	Category of Road	Type of Junction	Remarks
Nil					

Note: (NH: National Highway, SH: State Highway, MDR: Major District Road)

**15. Minor junctions**

The details of the minor junctions are as follows:

S. No.	Existing Chainage	Design Chainage	Side	Carriageway Width (m)	Surface Type	Leading to
				nil		

**16. Bypasses**

The details of the bypasses are as follows:

S. No.	Name of bypass (town)	Chainage (km)	Design Length (Km)	Carriageway	
				Width (m)	Type
Nil					

**17. Detail of any other structures**

S. No.	Chainage (km)	Type of Structure	No. of Spans with span length (m)	Width (m)
Nil				

**18. Permanent Bridge, Bypass or Tunnel costing Rs. 50 crore or more**

The Site includes the following permanent bridge/ bypass/ tunnel which was Constructed at the cost noted below: -Nil -

**19. Wayside Amenities / Truck Parking**

The Site includes the parcels of land for provision of wayside Amenities / truck parking as given in Schedule C

**20. Total number of structures**

The total number of structures on the Site is noted below.

(a) No. of Major Bridges	01
(b) No. of Railway under Bridges	Nil
(c) No. of Grade Separators (SVUP)	01
(d) No. of Minor Bridges	Nil
(e) No. of Vehicular and Non-Vehicular Underpasses	Nil

(f) No. of Box Culverts	01
(g) No. of Pipe Culverts	01
(h) No. of Slab Culverts	Nil

**21. Connecting Roads**

The details of connecting roads are as follows:

S. No	Chainage in km	Connecting on	Side	Leading to	Ref Road for Chainage
Nil					

**22. Utilities –**

Following departments have the utilities hindering the project work

- Electrical Utilities
- Public Health Utilities (Water/Sewage Pipe Lines)
- Any Other Lines

**22.1 Electrical Utilities:**

- Extra High-Tension Lines (EHT Lines)

S. No.	Chainage	Nos. of Crossings						Remarks
		400 KV	Department	220 KV	Department	132 KV	Department	
1	529+800	-		1	PITCUL	-		-
2	529+810	-		-		1	PITCUL	Lal Tappar- Rishikesh Line T.N-48
3	530+800	-		1	PITCUL	-		Rishikesh- Dharasu Line
4	532+100	-		1	PITCUL	-		Rishikesh- Dharasu Line
5	535+000	-		1	PITCUL	-		Rishikesh- Dharasu Line
6	535+500	-		1	PITCUL	-		Rishikesh- Chamba
7	535+550	-		1	PITCUL	-		Rishikesh- Dharasu Line
8	535+600	-		-		1	PITCUL	220kv/132kv
9	536+000	1	Tata	-		-		KOT- Rishikesh (NRSSXXXVI 0084)
10	537+900	-		-		1	PITCUL	Rishikesh- SNGR Line (RS-23)
11	537+910	-		1	PITCUL	-		Rishikesh- Dharasu Line (RDI-023)
12	539+980	-		1	PITCUL	-		Rishikesh- Dharasu Line
13	540+020	-		1	PITCUL	-		Rishikesh- Dharasu Line
14	540+060	-		1	PITCUL	-		Rishikesh- Dharasu Line
	<b>Total</b>	<b>1</b>		<b>10</b>		<b>3</b>		-

- (b) High Tension/Low Tension Lines (Electrical pole, transformers, 33KV, 11 KV and LT Lines)

S.No.	Division and Subdivision	Length (in m)			No of Poles Effected			Crossings			Transformers
		33 KV	11 KV	LT Line	33 KV Poles	11 KV Poles	LT Poles	33 KV	11 KV	LT Line	100 KVA
1	UPCL Muni Ki Reti	1550	1300	-	42	36	-	6	7	-	1
	UPCL Doiwala, Raiwala	500	-	-	26	-	-	1	-	-	-
2	UPCL Rishikesh	-	2500	6500	-	54	20		2		5

**Note**

- Utility shifting estimates are procured for utility owning agency.
- No land shall be provided by The Authority beyond Right of Way.
- Concessionaire shall be responsible /bear the cost of land acquisition beyond ROW and /or any change in utility shifting cost during construction. No COS shall be paid by the Authority.
- Concessionaire shall ensure utility shifting at his own risk & cost at the time of construction.

**22.2 Public Health Utilities (Water/Sewage Pipe Lines) \***

The Site includes the following Public Health Utilities: -

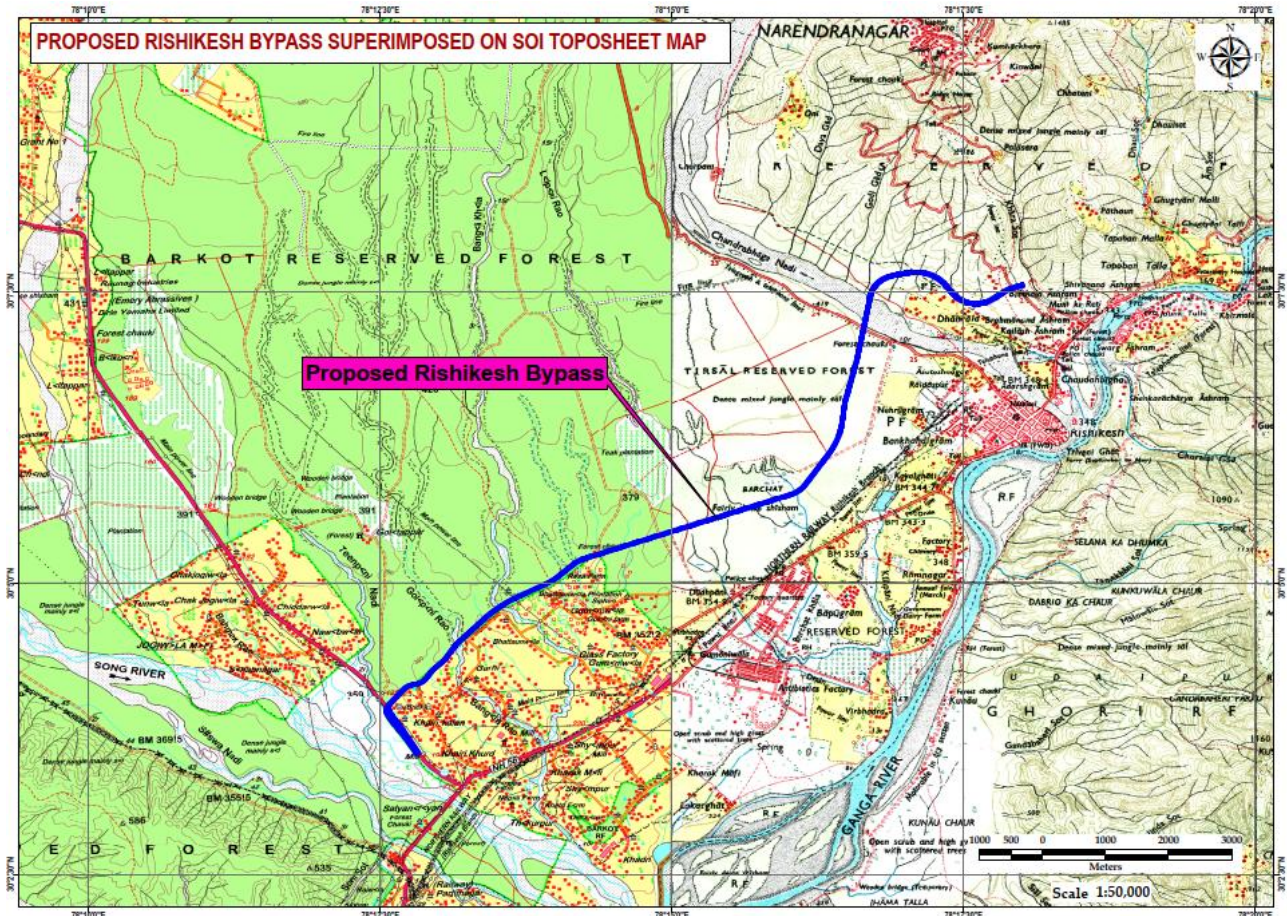
Detail of Water Pipe Line Rishikesh Bypass				
S.No.	Department Name	Dia of Pipe (mm)	Length (m)	Remarks
1	Pay Jal sansadhan Viaks avam Nirman Vibhag	250	200	
		200	200	
		150	250	
	<b>Sub Total Length (A)</b>			<b>650</b>
2	Uttrakhand Jal Sansthan	63	120	
		90	120	
		110	1495	
	<b>Sub Total Length (B)</b>			<b>1735</b>
<b>Total Length (A+B)</b>			<b>2385</b>	

(\*This is illustrative and may change as per features of existing utilities.)

**22.3 Any Other Lines –**

Change of scope shall be paid for any underground utilities not mentioned in Schedule “B”, which shall be worked out as per the estimate to be given by concerned utility owning dept. and shall be payable.

23. Referencing system: - Nil



Key plan of the project road

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**Annex - II****(As per Clause 8.3 (i) Schedule-A)****DATES FOR PROVIDING RIGHT OF WAY OF CONSTRUCTION ZONE**

The dates on which the Authority shall provide Right of Way of Construction Zone to the Contractor on different stretches of the Site are stated below:

Sr. No.	Design Chainage		Length (Km)	Width (m)	Dates of Providing ROW
	From	To			
(i) Full Right of Way (full width)	529+750	542+420	12.67	30-50	The authority shall provide the right of way not less than 80% (Eighty per cent) of the total length of project highway on appointed date in compliance to clause 10.3 of agreement.
(ii) Partial Right of Way (part width)	-	-	-	-	-
(iii) Balance Right of Way (Width)	-	-	-	-	-

The co-ordinates of Centerline and ROW are given below: -

**COORDINATE SYSTEM\_ UNIVERSAL TRANSVERSE MERCATOR (UTM)-WGS84 (Zone 44N)**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
1	529+660	230977.838	3329405.296	230949.970	3329433.668	230997.789	3329384.985
2	529+670	230984.972	3329412.304	230965.713	3329431.911	231002.826	3329394.127
3	529+680	230992.106	3329419.311	230976.339	3329435.363	231008.757	3329402.360
4	529+690	230999.240	3329426.319	230983.473	3329442.370	231015.293	3329409.975
5	529+700	231006.374	3329433.326	230990.608	3329449.378	231022.141	3329417.274
6	529+710	231013.508	3329440.334	230997.742	3329456.385	231029.275	3329424.282
7	529+720	231020.643	3329447.341	231004.876	3329463.393	231036.409	3329431.289
8	529+730	231027.777	3329454.348	231012.010	3329470.400	231043.543	3329438.297
9	529+740	231034.911	3329461.356	231019.144	3329477.408	231050.678	3329445.304
10	529+750	231042.045	3329468.363	231026.278	3329484.415	231057.812	3329452.312
11	529+760	231049.179	3329475.371	231033.412	3329491.423	231064.946	3329459.319
12	529+770	231056.313	3329482.378	231040.546	3329498.430	231072.080	3329466.326
13	529+780	231063.447	3329489.386	231047.681	3329505.437	231079.214	3329473.334
14	529+790	231070.581	3329496.393	231054.815	3329512.445	231086.348	3329480.341
15	529+800	231077.716	3329503.401	231061.949	3329519.452	231093.482	3329487.349
16	529+810	231084.850	3329510.408	231069.083	3329526.460	231100.616	3329494.356
17	529+820	231091.984	3329517.415	231076.217	3329533.467	231107.751	3329501.364
18	529+830	231099.118	3329524.423	231083.351	3329540.475	231114.885	3329508.371
19	529+840	231106.252	3329531.430	231090.485	3329547.482	231122.019	3329515.379
20	529+850	231113.386	3329538.438	231097.619	3329554.490	231129.153	3329522.386
21	529+860	231120.520	3329545.445	231104.754	3329561.497	231136.287	3329529.393
22	529+870	231127.654	3329552.453	231111.888	3329568.504	231143.421	3329536.401
23	529+880	231134.789	3329559.460	231119.022	3329575.512	231150.555	3329543.408
24	529+890	231141.923	3329566.468	231126.156	3329582.519	231157.689	3329550.416
25	529+900	231149.057	3329573.475	231133.290	3329589.527	231164.824	3329557.423
26	529+910	231156.191	3329580.482	231140.424	3329596.534	231171.958	3329564.431
27	529+920	231163.325	3329587.490	231147.558	3329603.542	231179.092	3329571.438
28	529+930	231170.459	3329594.497	231154.692	3329610.549	231186.226	3329578.446
29	529+940	231177.593	3329601.505	231161.826	3329617.557	231193.360	3329585.453
30	529+950	231184.727	3329608.512	231168.961	3329624.564	231200.494	3329592.460
31	529+960	231191.861	3329615.520	231176.095	3329631.571	231207.628	3329599.468
32	529+970	231198.996	3329622.527	231181.477	3329640.362	231214.762	3329606.475
33	529+980	231206.131	3329629.533	231188.626	3329647.382	231216.634	3329618.824
34	529+990	231213.279	3329636.526	231195.825	3329654.424	231223.752	3329625.787
35	530+000	231220.454	3329643.492	231203.088	3329661.475	231230.874	3329632.702
36	530+010	231227.671	3329650.414	231210.430	3329668.519	231238.015	3329639.552
37	530+020	231234.943	3329657.279	231217.867	3329675.539	231245.188	3329646.323
38	530+030	231242.283	3329664.069	231225.413	3329682.519	231252.406	3329653.000
39	530+040	231249.705	3329670.772	231233.066	3329689.430	231259.689	3329659.576
40	530+050	231257.210	3329677.380	231240.805	3329696.245	231267.053	3329666.061
41	530+060	231264.797	3329683.895	231248.629	3329702.964	231274.497	3329672.454

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.139**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
42	530+070	231272.464	3329690.314	231256.536	3329709.583	231282.021	3329678.753
43	530+080	231280.212	3329696.637	231264.526	3329716.104	231289.623	3329684.957
44	530+090	231288.037	3329702.862	231272.596	3329722.524	231297.302	3329691.066
45	530+100	231295.939	3329708.991	231280.677	3329728.792	231305.063	3329697.084
46	530+110	231303.908	3329715.033	231291.900	3329731.027	231312.913	3329703.037
47	530+120	231311.929	3329721.004	231300.047	3329737.091	231320.841	3329708.938
48	530+130	231319.991	3329726.920	231308.201	3329743.076	231328.834	3329714.804
49	530+140	231328.080	3329732.799	231316.349	3329748.997	231336.879	3329720.651
50	530+150	231336.185	3329738.657	231324.479	3329754.873	231344.965	3329726.495
51	530+160	231344.293	3329744.510	231332.588	3329760.727	231353.072	3329732.347
52	530+170	231352.402	3329750.363	231340.697	3329766.579	231361.181	3329738.200
53	530+180	231360.510	3329756.215	231348.805	3329772.432	231369.289	3329744.052
54	530+190	231368.619	3329762.068	231356.914	3329778.285	231377.398	3329749.905
55	530+200	231376.727	3329767.920	231365.022	3329784.137	231385.506	3329755.758
56	530+210	231384.836	3329773.773	231373.130	3329789.990	231393.615	3329761.610
57	530+220	231392.944	3329779.626	231381.239	3329795.842	231401.723	3329767.463
58	530+230	231401.053	3329785.478	231389.347	3329801.695	231409.831	3329773.316
59	530+240	231409.161	3329791.331	231397.456	3329807.548	231417.940	3329779.168
60	530+250	231417.269	3329797.183	231405.564	3329813.400	231426.048	3329785.021
61	530+260	231425.378	3329803.036	231413.673	3329819.253	231434.157	3329790.873
62	530+270	231433.486	3329808.889	231421.781	3329825.106	231442.265	3329796.726
63	530+280	231441.595	3329814.741	231429.890	3329830.958	231450.374	3329802.579
64	530+290	231449.703	3329820.594	231437.998	3329836.811	231458.482	3329808.431
65	530+300	231457.812	3329826.447	231446.106	3329842.663	231466.591	3329814.284
66	530+310	231465.920	3329832.299	231454.214	3329848.516	231474.700	3329820.136
67	530+320	231474.029	3329838.152	231462.322	3329854.369	231482.808	3329825.989
68	530+330	231482.137	3329844.004	231470.430	3329860.222	231490.916	3329831.842
69	530+340	231490.245	3329849.857	231478.538	3329866.075	231499.024	3329837.694
70	530+350	231498.354	3329855.710	231486.646	3329871.928	231507.133	3329843.547
71	530+360	231506.462	3329861.562	231494.754	3329877.781	231515.241	3329849.400
72	530+370	231514.571	3329867.415	231502.862	3329883.634	231523.350	3329855.252
73	530+380	231522.679	3329873.267	231510.970	3329889.487	231531.458	3329861.105
74	530+390	231530.785	3329879.120	231519.078	3329895.340	231539.566	3329866.957
75	530+400	231538.893	3329884.973	231527.186	3329901.193	231547.674	3329872.810
76	530+410	231546.999	3329890.826	231535.294	3329907.046	231555.782	3329878.662
77	530+420	231554.994	3329896.679	231543.402	3329912.899	231563.890	3329884.515
78	530+430	231562.994	3329902.532	231551.510	3329918.752	231572.000	3329890.368
79	530+440	231570.994	3329908.385	231559.618	3329924.605	231580.108	3329896.221
80	530+450	231578.844	3329915.038	231567.726	3329930.458	231588.216	3329902.074
81	530+460	231586.693	3329921.235	231575.834	3329936.311	231596.324	3329907.927
82	530+470	231594.489	3329927.497	231583.942	3329942.164	231604.432	3329913.780
83	530+480	231602.233	3329933.824	231592.050	3329948.017	231612.540	3329919.633
84	530+490	231609.924	3329940.215	231600.158	3329953.870	231620.648	3329925.486
85	530+500	231617.562	3329946.670	231608.266	3329959.723	231628.756	3329931.339
86	530+510	231625.145	3329953.189	231616.374	3329965.576	231636.864	3329937.192

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.140**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
87	530+520	231632.674	3329959.770	231622.755	3329971.022	231642.593	3329948.518
88	530+530	231640.148	3329966.414	231630.135	3329977.583	231650.160	3329955.245
89	530+540	231647.566	3329973.120	231637.461	3329984.205	231657.671	3329962.035
90	530+550	231654.928	3329979.888	231644.731	3329990.888	231665.125	3329968.887
91	530+560	231662.233	3329986.716	231651.945	3329997.632	231672.522	3329975.801
92	530+570	231669.482	3329993.606	231659.102	3330004.435	231679.861	3329982.776
93	530+580	231676.672	3330000.555	231666.203	3330011.298	231687.141	3329989.813
94	530+590	231683.805	3330007.564	231673.246	3330018.219	231694.363	3329996.910
95	530+600	231690.878	3330014.633	231680.232	3330025.199	231701.525	3330004.066
96	530+610	231697.893	3330021.760	231687.158	3330032.237	231708.627	3330011.283
97	530+620	231704.848	3330028.945	231694.026	3330039.333	231715.669	3330018.558
98	530+630	231711.743	3330036.188	231700.835	3330046.485	231722.650	3330025.891
99	530+640	231718.577	3330043.488	231707.584	3330053.694	231729.570	3330033.283
100	530+650	231725.350	3330050.845	231714.272	3330060.959	231736.428	3330040.731
101	530+660	231732.062	3330058.258	231720.900	3330068.279	231743.223	3330048.237
102	530+670	231738.711	3330065.727	231727.467	3330075.655	231749.956	3330055.799
103	530+680	231745.298	3330073.251	231733.971	3330083.084	231756.625	3330063.417
104	530+690	231751.823	3330080.829	231740.414	3330090.568	231763.231	3330071.090
105	530+700	231758.283	3330088.462	231746.794	3330098.105	231769.773	3330078.818
106	530+710	231764.680	3330096.148	231753.111	3330105.696	231776.250	3330086.601
107	530+720	231771.013	3330103.887	231759.365	3330113.338	231782.662	3330094.437
108	530+730	231777.281	3330111.679	231765.554	3330121.032	231789.008	3330102.326
109	530+740	231783.484	3330119.523	231771.680	3330128.778	231795.288	3330110.268
110	530+750	231789.621	3330127.418	231769.820	3330142.679	231805.501	3330115.259
111	530+760	231795.693	3330135.364	231775.764	3330150.459	231811.635	3330123.288
112	530+770	231801.697	3330143.360	231781.644	3330158.289	231817.740	3330131.417
113	530+780	231807.636	3330151.406	231787.459	3330166.168	231823.777	3330139.597
114	530+790	231813.506	3330159.502	231793.207	3330174.094	231829.746	3330147.828
115	530+800	231819.310	3330167.645	231798.896	3330182.076	231835.641	3330156.100
116	530+810	231825.056	3330175.830	231804.551	3330190.132	231841.460	3330164.388
117	530+820	231830.756	3330184.046	231810.185	3330198.252	231847.213	3330172.680
118	530+830	231836.426	3330192.283	231815.812	3330206.429	231852.916	3330180.967
119	530+840	231842.077	3330200.533	231821.445	3330214.651	231858.583	3330189.239
120	530+850	231847.724	3330208.786	231827.091	3330222.903	231864.230	3330197.493
121	530+860	231853.370	3330217.040	231832.737	3330231.156	231869.877	3330205.746
122	530+870	231859.017	3330225.293	231838.384	3330239.409	231875.524	3330214.000
123	530+880	231864.664	3330233.546	231844.031	3330247.663	231881.170	3330222.253
124	530+890	231870.310	3330241.799	231849.677	3330255.916	231886.817	3330230.506
125	530+900	231875.961	3330250.050	231855.345	3330264.192	231892.453	3330238.736
126	530+910	231881.630	3330258.288	231861.062	3330272.498	231898.085	3330246.919
127	530+920	231887.335	3330266.500	231866.844	3330280.822	231903.728	3330255.043
128	530+930	231893.093	3330274.676	231872.710	3330289.151	231909.400	3330263.096
129	530+940	231898.921	3330282.803	231878.677	3330297.472	231915.116	3330271.067
130	530+950	231904.834	3330290.867	231884.763	3330305.771	231920.891	3330278.943
131	530+960	231910.846	3330298.858	231890.962	3330314.012	231926.753	3330286.735

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.141**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
132	530+970	231916.957	3330306.773	231897.265	3330322.175	231932.711	3330294.452
133	530+980	231923.167	3330314.612	231903.668	3330330.258	231938.766	3330302.094
134	530+990	231929.474	3330322.372	231910.172	3330338.261	231944.915	3330309.660
135	531+000	231935.878	3330330.052	<b>231916.776</b>	<b>3330346.181</b>	<b>231951.119</b>	<b>3330317.102</b>
136	531+010	231942.377	3330337.652	231931.038	3330347.472	231953.716	3330327.832
137	531+020	231948.970	3330345.170	231937.755	3330355.131	231960.186	3330335.209
138	531+030	231955.657	3330352.605	231944.568	3330362.706	231966.747	3330342.505
139	531+040	231962.437	3330359.956	231951.474	3330370.195	231973.400	3330349.718
140	531+050	231969.308	3330367.222	231958.474	3330377.596	231980.142	3330356.848
141	531+060	231976.269	3330374.401	231965.565	3330384.909	231986.973	3330363.893
142	531+070	231983.314	3330381.498	231972.724	3330392.122	231993.904	3330370.875
143	531+080	231990.428	3330388.526	231979.931	3330399.242	232000.925	3330377.811
144	531+090	231997.596	3330395.499	231987.171	3330406.284	232008.021	3330384.714
145	531+100	232004.803	3330402.431	231994.428	3330413.264	232015.179	3330391.598
146	531+110	232012.035	3330409.338	232001.686	3330420.196	232022.383	3330398.479
147	531+120	232019.277	3330416.234	232008.934	3330427.098	232029.620	3330405.370
148	531+130	232026.519	3330423.129	232016.176	3330433.993	232036.862	3330412.266
149	531+140	232033.762	3330430.025	232023.419	3330440.889	232044.105	3330419.161
150	531+150	232041.004	3330436.920	232030.661	3330447.784	232051.347	3330426.056
151	531+160	232048.247	3330443.815	232037.904	3330454.679	232058.590	3330432.951
152	531+170	232055.489	3330450.711	232045.146	3330461.574	232065.832	3330439.847
153	531+180	232062.732	3330457.606	232052.389	3330468.470	232073.075	3330446.742
154	531+190	232069.975	3330464.501	232059.632	3330475.365	232080.317	3330453.637
155	531+200	232077.217	3330471.397	232066.874	3330482.260	232087.560	3330460.533
156	531+210	232084.460	3330478.292	232074.117	3330489.156	232094.803	3330467.428
157	531+220	232091.702	3330485.187	232081.359	3330496.051	232102.045	3330474.323
158	531+230	232098.945	3330492.083	232088.602	3330502.946	232109.288	3330481.219
159	531+240	232106.187	3330498.978	232095.844	3330509.842	232116.530	3330488.114
160	531+250	232113.430	3330505.873	232103.087	3330516.737	232123.773	3330495.009
161	531+260	232120.672	3330512.769	232110.329	3330523.632	232131.015	3330501.905
162	531+270	232127.915	3330519.664	232117.572	3330530.528	232138.258	3330508.800
163	531+280	232135.157	3330526.559	232124.814	3330537.423	232145.500	3330515.695
164	531+290	232142.400	3330533.454	232132.057	3330544.318	232152.743	3330522.591
165	531+300	232149.643	3330540.350	232139.300	3330551.214	232159.986	3330529.486
166	531+310	232156.885	3330547.245	232146.542	3330558.109	232167.228	3330536.381
167	531+320	232164.128	3330554.140	232153.785	3330565.004	232174.471	3330543.277
168	531+330	232171.370	3330561.036	232161.027	3330571.900	232181.713	3330550.172
169	531+340	232178.613	3330567.931	232168.270	3330578.795	232188.956	3330557.067
170	531+350	232185.855	3330574.826	232175.512	3330585.690	232196.198	3330563.963
171	531+360	232193.098	3330581.722	232182.755	3330592.586	232203.441	3330570.858
172	531+370	232200.340	3330588.617	232189.997	3330599.481	232210.683	3330577.753
173	531+380	232207.583	3330595.512	232197.240	3330606.376	232217.926	3330584.649
174	531+390	232214.826	3330602.408	232204.483	3330613.271	232225.169	3330591.544
175	531+400	232222.068	3330609.303	232211.725	3330620.167	232232.411	3330598.439
176	531+410	232229.311	3330616.198	232218.968	3330627.062	232239.654	3330605.334

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.142**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
177	531+420	232236.553	3330623.094	232226.210	3330633.957	232246.896	3330612.230
178	531+430	232243.796	3330629.989	232233.453	3330640.853	232254.139	3330619.125
179	531+440	232251.038	3330636.884	232240.695	3330647.748	232261.381	3330626.020
180	531+450	232258.281	3330643.780	232247.938	3330654.643	232268.624	3330632.916
181	531+460	232265.523	3330650.675	232255.180	3330661.539	232275.866	3330639.811
182	531+470	232272.766	3330657.570	232262.423	3330668.434	232283.109	3330646.706
183	531+480	232280.009	3330664.466	232269.666	3330675.329	232290.351	3330653.602
184	531+490	232287.251	3330671.361	232276.908	3330682.225	232297.594	3330660.497
185	531+500	232294.494	3330678.256	232284.151	3330689.120	232304.837	3330667.392
186	531+510	232301.736	3330685.152	232291.393	3330696.015	232312.079	3330674.288
187	531+520	232308.979	3330692.047	232298.636	3330702.911	232319.322	3330681.183
188	531+530	232316.228	3330698.935	232305.920	3330709.832	232326.536	3330688.038
189	531+540	232323.510	3330705.789	232313.257	3330716.737	232333.764	3330694.840
190	531+550	232330.826	3330712.606	232320.628	3330723.605	232341.025	3330701.606
191	531+560	232338.176	3330719.387	232328.033	3330730.437	232348.320	3330708.336
192	531+570	232345.560	3330726.130	232335.472	3330737.231	232355.648	3330715.030
193	531+580	232352.977	3330732.837	232342.945	3330743.989	232363.010	3330721.686
194	531+590	232360.428	3330739.507	232350.452	3330750.708	232370.405	3330728.306
195	531+600	232367.912	3330746.139	232357.992	3330757.390	232377.833	3330734.888
196	531+610	232375.429	3330752.734	232365.565	3330764.035	232385.293	3330741.434
197	531+620	232382.979	3330759.291	232373.172	3330770.641	232392.787	3330747.942
198	531+630	232390.562	3330765.811	232380.812	3330777.209	232400.313	3330754.412
199	531+640	232398.177	3330772.292	232388.484	3330783.739	232407.871	3330760.845
200	531+650	232405.825	3330778.735	232396.189	3330790.231	232415.461	3330767.240
201	531+660	232413.505	3330785.140	232403.926	3330796.684	232423.083	3330773.597
202	531+670	232421.216	3330791.507	232411.696	3330803.098	232430.737	3330779.915
203	531+680	232428.960	3330797.834	232419.497	3330809.473	232438.422	3330786.196
204	531+690	232436.734	3330804.123	232427.330	3330815.809	232446.139	3330792.437
205	531+700	232444.541	3330810.373	232435.195	3330822.106	232453.886	3330798.640
206	531+710	232452.378	3330816.584	232443.091	3330828.363	232461.665	3330804.805
207	531+720	232460.246	3330822.756	232451.018	3330834.581	232469.474	3330810.930
208	531+730	232468.145	3330828.888	232458.977	3330840.760	232477.314	3330817.016
209	531+740	232476.075	3330834.981	232466.966	3330846.898	232485.184	3330823.063
210	531+750	232484.035	3330841.034	232474.986	3330852.996	232493.085	3330829.071
211	531+760	232492.025	3330847.047	232483.036	3330859.054	232501.015	3330835.039
212	531+770	232500.046	3330853.020	232491.116	3330865.072	232508.975	3330840.967
213	531+780	232508.095	3330858.952	232499.226	3330871.050	232516.964	3330846.855
214	531+790	232516.175	3330864.845	232507.366	3330876.986	232524.983	3330852.704
215	531+800	232524.284	3330870.697	232515.536	3330882.882	232533.031	3330858.512
216	531+810	232532.422	3330876.508	232523.735	3330888.737	232541.108	3330864.280
217	531+820	232540.589	3330882.279	232531.963	3330894.551	232549.214	3330870.007
218	531+830	232548.784	3330888.009	232540.221	3330900.324	232557.348	3330875.694
219	531+840	232557.009	3330893.698	232548.506	3330906.055	232565.511	3330881.340
220	531+850	232565.261	3330899.345	232556.821	3330911.745	232573.702	3330886.945
221	531+860	232573.542	3330904.951	232565.164	3330917.393	232581.920	3330892.509

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.143**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
222	531+870	232581.851	3330910.516	232573.535	3330923.000	232590.167	3330898.032
223	531+880	232590.187	3330916.039	232581.934	3330928.564	232598.440	3330903.514
224	531+890	232598.551	3330921.521	232590.360	3330934.087	232606.742	3330908.954
225	531+900	232606.942	3330926.960	232598.814	3330939.567	232615.070	3330914.353
226	531+910	232615.360	3330932.357	232607.296	3330945.005	232623.425	3330919.710
227	531+920	232623.806	3330937.713	232615.804	3330950.401	232631.807	3330925.025
228	531+930	232632.277	3330943.026	232624.340	3330955.753	232640.215	3330930.298
229	531+940	232640.776	3330948.296	232632.902	3330961.063	232648.650	3330935.529
230	531+950	232649.300	3330953.524	232641.490	3330966.331	232657.110	3330940.718
231	531+960	232657.851	3330958.710	232650.105	3330971.555	232665.597	3330945.864
232	531+970	232666.427	3330963.852	232658.746	3330976.736	232674.109	3330950.968
233	531+980	232675.029	3330968.952	232667.412	3330981.874	232682.646	3330956.030
234	531+990	232683.657	3330974.008	232676.104	3330986.968	232691.209	3330961.048
235	532+000	232692.309	3330979.021	232684.822	3330992.019	232699.797	3330966.024
236	532+010	232700.987	3330983.991	232693.564	3330997.026	232708.409	3330970.956
237	532+020	232709.689	3330988.918	232702.332	3331001.990	232717.046	3330975.846
238	532+030	232718.416	3330993.801	232711.124	3331006.909	232725.707	3330980.692
239	532+040	232727.167	3330998.640	232719.941	3331011.785	232734.393	3330985.495
240	532+050	232735.942	3331003.435	232728.782	3331016.616	232743.102	3330990.255
241	532+060	232744.741	3331008.187	232737.647	3331021.403	232751.835	3330994.971
242	532+070	232753.564	3331012.894	232746.536	3331026.146	232760.592	3330999.643
243	532+080	232762.410	3331017.558	232755.448	3331030.844	232769.371	3331004.271
244	532+090	232771.279	3331022.177	232764.384	3331035.498	232778.174	3331008.855
245	532+100	232780.171	3331026.751	232773.343	3331040.107	232787.000	3331013.396
246	532+110	232789.086	3331031.281	232782.325	3331044.671	232795.848	3331017.892
247	532+120	232798.019	3331035.776	232791.280	3331049.177	232804.758	3331022.375
248	532+130	232806.953	3331040.269	232800.215	3331053.670	232813.692	3331026.868
249	532+140	232815.887	3331044.761	232809.149	3331058.162	232822.626	3331031.360
250	532+150	232824.821	3331049.254	232818.083	3331062.655	232831.560	3331035.853
251	532+160	232833.756	3331053.746	232827.017	3331067.147	232840.494	3331040.345
252	532+170	232842.690	3331058.239	232835.951	3331071.640	232849.428	3331044.838
253	532+180	232851.624	3331062.731	232844.885	3331076.132	232858.362	3331049.330
254	532+190	232860.558	3331067.224	232853.819	3331080.625	232867.296	3331053.823
255	532+200	232869.492	3331071.716	232862.753	3331085.117	232876.231	3331058.315
256	532+210	232878.426	3331076.209	232871.687	3331089.610	232885.165	3331062.807
257	532+220	232887.360	3331080.701	232880.621	3331094.102	232894.099	3331067.300
258	532+230	232896.294	3331085.194	232889.555	3331098.595	232903.033	3331071.792
259	532+240	232905.228	3331089.686	232898.489	3331103.087	232911.967	3331076.285
260	532+250	232914.162	3331094.178	232907.423	3331107.580	232920.901	3331080.777
261	532+260	232923.096	3331098.671	232916.358	3331112.072	232929.835	3331085.270
262	532+270	232932.030	3331103.163	232925.292	3331116.565	232938.769	3331089.762
263	532+280	232940.964	3331107.656	232934.226	3331121.057	232947.703	3331094.255
264	532+290	232949.898	3331112.148	232943.160	3331125.549	232956.637	3331098.747
265	532+300	232958.833	3331116.641	232952.094	3331130.042	232965.571	3331103.240
266	532+310	232967.767	3331121.133	232961.028	3331134.534	232974.505	3331107.732

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.144**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
267	532+320	232976.701	3331125.626	232969.962	3331139.027	232983.439	3331112.225
268	532+330	232985.635	3331130.118	232978.896	3331143.519	232992.373	3331116.717
269	532+340	232994.569	3331134.611	232987.830	3331148.012	233001.308	3331121.210
270	532+350	233003.503	3331139.103	232996.764	3331152.504	233010.242	3331125.702
271	532+360	233012.437	3331143.596	233005.698	3331156.997	233019.176	3331130.195
272	532+370	233021.371	3331148.088	233014.632	3331161.489	233028.110	3331134.687
273	532+380	233030.305	3331152.581	233023.566	3331165.982	233037.044	3331139.180
274	532+390	233039.239	3331157.073	233032.500	3331170.474	233045.978	3331143.672
275	532+400	233048.173	3331161.566	233041.435	3331174.967	233054.912	3331148.164
276	532+410	233057.107	3331166.058	233050.369	3331179.459	233063.846	3331152.657
277	532+420	233066.041	3331170.551	233059.303	3331183.952	233072.780	3331157.149
278	532+430	233074.975	3331175.043	233068.237	3331188.444	233081.714	3331161.642
279	532+440	233083.910	3331179.535	233077.171	3331192.937	233090.648	3331166.134
280	532+450	233092.844	3331184.028	233086.105	3331197.429	233099.582	3331170.627
281	532+460	233101.778	3331188.520	233095.039	3331201.922	233108.516	3331175.119
282	532+470	233110.712	3331193.013	233103.973	3331206.414	233117.451	3331179.612
283	532+480	233119.646	3331197.505	233112.907	3331210.907	233126.385	3331184.104
284	532+490	233128.580	3331201.998	233121.841	3331215.399	233135.319	3331188.597
285	532+500	233137.514	3331206.490	233130.775	3331219.891	233144.253	3331193.089
286	532+510	233146.448	3331210.983	233139.709	3331224.384	233153.187	3331197.582
287	532+520	233155.382	3331215.475	233148.643	3331228.876	233162.121	3331202.074
288	532+530	233164.316	3331219.968	233157.578	3331233.369	233171.055	3331206.567
289	532+540	233173.249	3331224.463	233166.497	3331237.858	233180.001	3331211.069
290	532+550	233182.172	3331228.976	233175.380	3331242.350	233188.965	3331215.603
291	532+560	233191.077	3331233.526	233184.216	3331246.865	233197.939	3331220.187
292	532+570	233199.954	3331238.131	233192.996	3331251.420	233206.912	3331224.842
293	532+580	233208.792	3331242.809	233201.711	3331256.033	233215.873	3331229.586
294	532+590	233217.582	3331247.578	233210.351	3331260.720	233224.813	3331234.436
295	532+600	233226.313	3331252.454	233218.918	3331265.504	233233.708	3331239.403
296	532+610	233234.982	3331257.438	233227.425	3331270.395	233242.539	3331244.481
297	532+620	233243.588	3331262.530	233235.870	3331275.392	233251.307	3331249.668
298	532+630	233252.130	3331267.729	233244.251	3331280.493	233260.009	3331254.965
299	532+640	233260.607	3331273.035	233252.569	3331285.700	233268.645	3331260.370
300	532+650	233269.016	3331278.446	233260.820	3331291.009	233277.212	3331265.883
301	532+660	233277.357	3331283.962	233269.005	3331296.422	233285.709	3331271.502
302	532+670	233285.629	3331289.582	233277.122	3331301.936	233294.136	3331277.227
303	532+680	233293.829	3331295.305	233285.168	3331307.552	233302.490	3331283.057
304	532+690	233301.958	3331301.129	233293.144	3331313.267	233310.771	3331288.991
305	532+700	233310.013	3331307.055	233301.048	3331319.082	233318.977	3331295.028
306	532+710	233317.993	3331313.081	233308.879	3331324.995	233327.107	3331301.167
307	532+720	233325.897	3331319.207	233316.635	3331331.006	233335.159	3331307.408
308	532+730	233333.724	3331325.430	233324.315	3331337.113	233343.133	3331313.748
309	532+740	233341.473	3331331.751	233331.920	3331343.316	233351.026	3331320.187
310	532+750	233349.147	3331338.163	233339.470	3331349.624	233358.824	3331326.702
311	532+760	233356.758	3331344.649	233346.982	3331356.025	233366.535	3331333.273

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.145**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
312	532+770	233364.320	3331351.193	233354.468	3331362.504	233374.172	3331339.882
313	532+780	233371.844	3331357.780	233361.941	3331369.046	233381.748	3331346.514
314	532+790	233379.345	3331364.393	233369.414	3331375.634	233389.277	3331353.151
315	532+800	233386.837	3331371.016	233376.901	3331382.253	233396.774	3331359.780
316	532+810	233394.328	3331377.641	233384.392	3331388.877	233404.265	3331366.404
317	532+820	233401.819	3331384.265	233391.883	3331395.502	233411.756	3331373.028
318	532+830	233409.311	3331390.890	233399.374	3331402.126	233419.247	3331379.653
319	532+840	233416.802	3331397.514	233406.865	3331408.751	233426.738	3331386.277
320	532+850	233424.293	3331404.138	233414.356	3331415.375	233434.229	3331392.902
321	532+860	233431.784	3331410.763	233421.847	3331422.000	233441.721	3331399.526
322	532+870	233439.275	3331417.387	233429.338	3331428.624	233449.212	3331406.151
323	532+880	233446.766	3331424.012	233436.829	3331435.248	233456.703	3331412.775
324	532+890	233454.257	3331430.636	233444.321	3331441.873	233464.194	3331419.400
325	532+900	233461.748	3331437.261	233451.812	3331448.497	233471.685	3331426.024
326	532+910	233469.239	3331443.885	233459.303	3331455.122	233479.176	3331432.649
327	532+920	233476.730	3331450.510	233466.794	3331461.746	233486.667	3331439.273
328	532+930	233484.222	3331457.134	233474.285	3331468.371	233494.158	3331445.897
329	532+940	233491.713	3331463.759	233481.776	3331474.995	233501.649	3331452.522
330	532+950	233499.204	3331470.383	233489.267	3331481.620	233509.140	3331459.146
331	532+960	233506.695	3331477.007	233496.758	3331488.244	233516.632	3331465.771
332	532+970	233514.186	3331483.632	233504.249	3331494.869	233524.123	3331472.395
333	532+980	233521.677	3331490.256	233511.740	3331501.493	233531.614	3331479.020
334	532+990	233529.168	3331496.881	233519.232	3331508.117	233539.105	3331485.644
335	533+000	233536.660	3331503.504	233526.731	3331514.747	233546.590	3331492.261
336	533+010	233544.163	3331510.115	233534.263	3331521.384	233554.063	3331498.846
337	533+020	233551.690	3331516.699	233541.844	3331528.014	233561.537	3331505.383
338	533+030	233559.256	3331523.238	233549.487	3331534.621	233569.025	3331511.855
339	533+040	233566.872	3331529.718	233557.205	3331541.188	233576.539	3331518.249
340	533+050	233574.552	3331536.122	233565.012	3331547.697	233584.093	3331524.547
341	533+060	233582.309	3331542.433	233572.921	3331554.132	233591.698	3331530.735
342	533+070	233590.154	3331548.634	233580.944	3331560.474	233599.364	3331536.795
343	533+080	233598.098	3331554.709	233589.085	3331566.700	233607.110	3331542.718
344	533+090	233606.141	3331560.650	233597.330	3331572.790	233614.952	3331548.511
345	533+100	233614.283	3331566.456	233605.675	3331578.741	233622.890	3331554.172
346	533+110	233622.520	3331572.126	233614.118	3331584.553	233630.922	3331559.700
347	533+120	233630.850	3331577.658	233622.657	3331590.223	233639.044	3331565.093
348	533+130	233639.272	3331583.050	233631.289	3331595.750	233647.255	3331570.351
349	533+140	233647.782	3331588.301	233640.012	3331601.132	233655.552	3331575.471
350	533+150	233656.379	3331593.410	233648.823	3331606.368	233663.934	3331580.451
351	533+160	233665.059	3331598.374	233657.721	3331611.457	233672.397	3331585.292
352	533+170	233673.821	3331603.194	233666.702	3331616.397	233680.940	3331589.991
353	533+180	233682.662	3331607.866	233675.764	3331621.186	233689.560	3331594.546
354	533+190	233691.580	3331612.391	233684.905	3331625.824	233698.255	3331598.958
355	533+200	233700.572	3331616.766	233694.122	3331630.308	233707.022	3331603.223
356	533+210	233709.636	3331620.991	233703.412	3331634.639	233715.859	3331607.343

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.146**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
357	533+220	233718.768	3331625.064	233712.773	3331638.814	233724.764	3331611.314
358	533+230	233727.968	3331628.984	233722.202	3331642.832	233733.733	3331615.136
359	533+240	233737.231	3331632.751	233731.694	3331646.692	233742.769	3331618.810
360	533+250	233746.552	3331636.373	233741.218	3331650.393	233751.885	3331622.353
361	533+260	233755.921	3331639.869	233750.763	3331653.954	233761.079	3331625.783
362	533+270	233765.330	3331643.256	233760.319	3331657.395	233770.340	3331629.118
363	533+280	233774.770	3331646.556	233769.877	3331660.736	233779.662	3331632.376
364	533+290	233784.233	3331649.786	233779.430	3331663.996	233789.037	3331635.576
365	533+300	233793.714	3331652.968	233788.969	3331667.197	233798.458	3331638.738
366	533+310	233803.204	3331656.119	233798.490	3331670.359	233807.919	3331641.879
367	533+320	233812.698	3331659.260	233807.987	3331673.501	233817.409	3331645.019
368	533+330	233822.192	3331662.401	233817.481	3331676.642	233826.903	3331648.160
369	533+340	233831.686	3331665.541	233826.975	3331679.782	233836.397	3331651.300
370	533+350	233841.180	3331668.682	233836.469	3331682.923	233845.891	3331654.441
371	533+360	233850.674	3331671.823	233845.963	3331686.064	233855.385	3331657.582
372	533+370	233860.168	3331674.963	233855.457	3331689.204	233864.879	3331660.722
373	533+380	233869.662	3331678.104	233864.951	3331692.345	233874.373	3331663.863
374	533+390	233879.156	3331681.245	233874.445	3331695.486	233883.867	3331667.004
375	533+400	233888.650	3331684.385	233883.939	3331698.626	233893.361	3331670.144
376	533+410	233898.144	3331687.526	233893.433	3331701.767	233902.855	3331673.285
377	533+420	233907.638	3331690.667	233902.927	3331704.908	233912.349	3331676.426
378	533+430	233917.132	3331693.807	233912.421	3331708.049	233921.843	3331679.566
379	533+440	233926.626	3331696.948	233921.915	3331711.189	233931.337	3331682.707
380	533+450	233936.120	3331700.089	233931.409	3331714.330	233940.831	3331685.848
381	533+460	233945.614	3331703.230	233940.903	3331717.471	233950.325	3331688.989
382	533+470	233955.108	3331706.370	233950.397	3331720.611	233959.819	3331692.129
383	533+480	233964.602	3331709.511	233959.891	3331723.752	233969.313	3331695.270
384	533+490	233974.096	3331712.652	233969.385	3331726.893	233978.807	3331698.411
385	533+500	233983.590	3331715.792	233978.879	3331730.033	233988.301	3331701.551
386	533+510	233993.084	3331718.933	233988.373	3331733.174	233997.795	3331704.692
387	533+520	234002.578	3331722.074	233997.867	3331736.315	234007.289	3331707.833
388	533+530	234012.072	3331725.214	234007.361	3331739.455	234016.783	3331710.973
389	533+540	234021.566	3331728.355	234016.855	3331742.596	234026.277	3331714.114
390	533+550	234031.060	3331731.496	234026.349	3331745.737	234035.771	3331717.255
391	533+560	234040.554	3331734.636	234035.843	3331748.877	234045.265	3331720.395
392	533+570	234050.048	3331737.777	234045.337	3331752.018	234054.759	3331723.536
393	533+580	234059.542	3331740.918	234054.831	3331755.159	234064.253	3331726.677
394	533+590	234069.036	3331744.058	234064.325	3331758.299	234073.747	3331729.817
395	533+600	234078.530	3331747.199	234073.819	3331761.440	234083.241	3331732.958
396	533+610	234088.024	3331750.340	234083.313	3331764.581	234092.735	3331736.099
397	533+620	234097.518	3331753.480	234092.807	3331767.721	234102.229	3331739.239
398	533+630	234107.012	3331756.621	234102.301	3331770.862	234111.723	3331742.380
399	533+640	234116.506	3331759.762	234111.795	3331774.003	234121.217	3331745.521
400	533+650	234126.000	3331762.902	234121.289	3331777.143	234130.711	3331748.661
401	533+660	234135.494	3331766.043	234130.783	3331780.284	234140.205	3331751.802

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.147**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
402	533+670	234144.988	3331769.184	234140.277	3331783.425	234149.699	3331754.943
403	533+680	234154.482	3331772.324	234149.771	3331786.565	234159.194	3331758.083
404	533+690	234163.977	3331775.465	234159.265	3331789.706	234168.688	3331761.224
405	533+700	234173.471	3331778.606	234168.760	3331792.847	234178.182	3331764.365
406	533+710	234182.965	3331781.746	234178.254	3331795.987	234187.676	3331767.505
407	533+720	234192.459	3331784.887	234187.748	3331799.128	234197.170	3331770.646
408	533+730	234201.953	3331788.028	234197.242	3331802.269	234206.664	3331773.787
409	533+740	234211.447	3331791.168	234206.736	3331805.409	234216.158	3331776.927
410	533+750	234220.941	3331794.309	234216.230	3331808.550	234225.652	3331780.068
411	533+760	234230.435	3331797.450	234225.724	3331811.691	234235.146	3331783.209
412	533+770	234239.929	3331800.590	234235.218	3331814.831	234244.640	3331786.349
413	533+780	234249.423	3331803.731	234244.712	3331817.972	234254.134	3331789.490
414	533+790	234258.917	3331806.872	234254.206	3331821.113	234263.628	3331792.631
415	533+800	234268.411	3331810.012	234263.700	3331824.253	234273.122	3331795.771
416	533+810	234277.905	3331813.153	234273.194	3331827.394	234282.616	3331798.912
417	533+820	234287.399	3331816.294	234282.688	3331830.535	234292.110	3331802.053
418	533+830	234296.893	3331819.434	234292.182	3331833.675	234301.604	3331805.193
419	533+840	234306.387	3331822.575	234301.676	3331836.816	234311.098	3331808.334
420	533+850	234315.881	3331825.716	234311.170	3331839.957	234320.592	3331811.475
421	533+860	234325.375	3331828.856	234320.664	3331843.097	234330.086	3331814.615
422	533+870	234334.869	3331831.997	234330.158	3331846.238	234339.580	3331817.756
423	533+880	234344.363	3331835.138	234339.652	3331849.379	234349.074	3331820.897
424	533+890	234353.857	3331838.278	234349.146	3331852.519	234358.568	3331824.037
425	533+900	234363.351	3331841.419	234358.640	3331855.660	234368.062	3331827.178
426	533+910	234372.845	3331844.560	234368.134	3331858.801	234377.556	3331830.319
427	533+920	234382.339	3331847.700	234377.628	3331861.941	234387.050	3331833.459
428	533+930	234391.833	3331850.841	234387.122	3331865.082	234396.544	3331836.600
429	533+940	234401.327	3331853.982	234396.616	3331868.223	234406.038	3331839.741
430	533+950	234410.821	3331857.122	234406.110	3331871.363	234415.532	3331842.881
431	533+960	234420.315	3331860.263	234415.604	3331874.504	234425.026	3331846.022
432	533+970	234429.809	3331863.404	234425.098	3331877.645	234434.520	3331849.163
433	533+980	234439.303	3331866.544	234434.592	3331880.785	234444.014	3331852.303
434	533+990	234448.797	3331869.685	234444.086	3331883.926	234453.508	3331855.444
435	534+000	234458.291	3331872.826	234453.580	3331887.067	234463.002	3331858.585
436	534+010	234467.785	3331875.966	234463.074	3331890.207	234472.496	3331861.725
437	534+020	234477.279	3331879.107	234472.568	3331893.348	234481.990	3331864.866
438	534+030	234486.773	3331882.248	234482.062	3331896.489	234491.484	3331868.007
439	534+040	234496.267	3331885.388	234491.556	3331899.630	234500.978	3331871.147
440	534+050	234505.761	3331888.529	234501.050	3331902.770	234510.472	3331874.288
441	534+060	234515.255	3331891.670	234510.544	3331905.911	234519.966	3331877.429
442	534+070	234524.749	3331894.811	234520.038	3331909.052	234529.460	3331880.570
443	534+080	234534.243	3331897.951	234529.532	3331912.192	234538.954	3331883.710
444	534+090	234543.737	3331901.092	234539.026	3331915.333	234548.448	3331886.851
445	534+100	234553.231	3331904.233	234548.520	3331918.474	234557.942	3331889.992
446	534+110	234562.725	3331907.373	234558.014	3331921.614	234567.436	3331893.132

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.148**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
447	534+120	234572.219	3331910.514	234567.508	3331924.755	234576.930	3331896.273
448	534+130	234581.713	3331913.655	234577.002	3331927.896	234586.424	3331899.414
449	534+140	234591.207	3331916.795	234586.496	3331931.036	234595.918	3331902.554
450	534+150	234600.701	3331919.936	234595.990	3331934.177	234605.412	3331905.695
451	534+160	234610.195	3331923.077	234605.484	3331937.318	234614.906	3331908.836
452	534+170	234619.689	3331926.217	234614.978	3331940.458	234624.400	3331911.976
453	534+180	234629.183	3331929.358	234624.472	3331943.599	234633.894	3331915.117
454	534+190	234638.677	3331932.499	234633.966	3331946.740	234643.388	3331918.258
455	534+200	234648.171	3331935.639	234643.460	3331949.880	234652.882	3331921.398
456	534+210	234657.665	3331938.780	234652.954	3331953.021	234662.376	3331924.539
457	534+220	234667.159	3331941.921	234662.448	3331956.162	234671.870	3331927.680
458	534+230	234676.653	3331945.061	234671.942	3331959.302	234681.364	3331930.820
459	534+240	234686.147	3331948.202	234681.436	3331962.443	234690.858	3331933.961
460	534+250	234695.641	3331951.343	234690.930	3331965.584	234700.352	3331937.102
461	534+260	234705.135	3331954.483	234700.424	3331968.724	234709.846	3331940.242
462	534+270	234714.629	3331957.624	234709.918	3331971.865	234719.340	3331943.383
463	534+280	234724.123	3331960.765	234719.412	3331975.006	234728.834	3331946.524
464	534+290	234733.617	3331963.905	234728.906	3331978.146	234738.328	3331949.664
465	534+300	234743.111	3331967.046	234738.400	3331981.287	234747.822	3331952.805
466	534+310	234752.605	3331970.187	234747.894	3331984.428	234757.316	3331955.946
467	534+320	234762.099	3331973.327	234757.388	3331987.568	234766.810	3331959.086
468	534+330	234771.593	3331976.468	234766.882	3331990.709	234776.304	3331962.227
469	534+340	234781.087	3331979.609	234776.376	3331993.850	234785.798	3331965.368
470	534+350	234790.581	3331982.749	234785.870	3331996.990	234795.292	3331968.508
471	534+360	234800.075	3331985.890	234795.364	3332000.131	234804.786	3331971.649
472	534+370	234809.569	3331989.031	234804.858	3332003.272	234814.280	3331974.790
473	534+380	234819.063	3331992.171	234814.352	3332006.412	234823.774	3331977.930
474	534+390	234828.557	3331995.312	234823.846	3332009.553	234833.268	3331981.071
475	534+400	234838.051	3331998.453	234833.340	3332012.694	234842.762	3331984.212
476	534+410	234847.545	3332001.593	234842.834	3332015.834	234852.256	3331987.352
477	534+420	234857.039	3332004.734	234852.328	3332018.975	234861.750	3331990.493
478	534+430	234866.533	3332007.875	234861.822	3332022.116	234871.244	3331993.634
479	534+440	234876.027	3332011.015	234871.316	3332025.256	234880.738	3331996.774
480	534+450	234885.521	3332014.156	234880.810	3332028.397	234890.232	3331999.915
481	534+460	234895.015	3332017.297	234890.304	3332031.538	234899.726	3332003.056
482	534+470	234904.509	3332020.437	234899.798	3332034.678	234909.220	3332006.196
483	534+480	234914.003	3332023.578	234909.292	3332037.819	234918.714	3332009.337
484	534+490	234923.497	3332026.719	234918.786	3332040.960	234928.208	3332012.478
485	534+500	234932.991	3332029.859	234928.280	3332044.100	234937.702	3332015.618
486	534+510	234942.485	3332033.000	234937.774	3332047.241	234947.196	3332018.759
487	534+520	234951.979	3332036.141	234947.268	3332050.382	234956.690	3332021.900
488	534+530	234961.473	3332039.281	234956.762	3332053.522	234966.184	3332025.040
489	534+540	234970.967	3332042.422	234966.256	3332056.663	234975.678	3332028.181
490	534+550	234980.461	3332045.563	234975.750	3332059.804	234985.172	3332031.322
491	534+560	234989.955	3332048.703	234985.244	3332062.944	234994.666	3332034.462

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.149**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
492	534+570	234999.449	3332051.844	234994.738	3332066.085	235004.160	3332037.603
493	534+580	235008.943	3332054.985	235004.232	3332069.226	235013.654	3332040.744
494	534+590	235018.437	3332058.125	235013.726	3332072.366	235023.148	3332043.884
495	534+600	235027.931	3332061.266	235023.220	3332075.507	235032.642	3332047.025
496	534+610	235037.425	3332064.407	235032.714	3332078.648	235042.136	3332050.166
497	534+620	235046.919	3332067.547	235042.208	3332081.788	235051.630	3332053.306
498	534+630	235056.413	3332070.688	235051.702	3332084.929	235061.124	3332056.447
499	534+640	235065.907	3332073.829	235061.196	3332088.070	235070.618	3332059.588
500	534+650	235075.401	3332076.969	235070.690	3332091.211	235080.112	3332062.728
501	534+660	235084.895	3332080.110	235080.184	3332094.351	235089.606	3332065.869
502	534+670	235094.389	3332083.251	235089.678	3332097.492	235099.100	3332069.010
503	534+680	235103.883	3332086.392	235099.172	3332100.633	235108.594	3332072.150
504	534+690	235113.377	3332089.532	235108.666	3332103.773	235118.088	3332075.291
505	534+700	235122.871	3332092.673	235118.160	3332106.914	235127.582	3332078.432
506	534+710	235132.365	3332095.814	235127.654	3332110.055	235137.076	3332081.573
507	534+720	235141.859	3332098.954	235137.148	3332113.195	235146.570	3332084.713
508	534+730	235151.353	3332102.095	235146.642	3332116.336	235156.064	3332087.854
509	534+740	235160.847	3332105.236	235156.136	3332119.477	235165.558	3332090.995
510	534+750	235170.341	3332108.376	235165.630	3332122.617	235175.052	3332094.135
511	534+760	235179.835	3332111.517	235175.124	3332125.758	235184.546	3332097.276
512	534+770	235189.329	3332114.658	235184.618	3332128.899	235194.040	3332100.417
513	534+780	235198.823	3332117.798	235194.112	3332132.039	235203.534	3332103.557
514	534+790	235208.317	3332120.939	235203.606	3332135.180	235213.028	3332106.698
515	534+800	235217.811	3332124.080	235213.100	3332138.321	235222.522	3332109.839
516	534+810	235227.305	3332127.220	235222.594	3332141.461	235232.016	3332112.979
517	534+820	235236.799	3332130.361	235232.088	3332144.602	235241.510	3332116.120
518	534+830	235246.293	3332133.502	235241.582	3332147.743	235251.004	3332119.261
519	534+840	235255.787	3332136.642	235251.076	3332150.883	235260.498	3332122.401
520	534+850	235265.281	3332139.783	235260.570	3332154.024	235269.992	3332125.542
521	534+860	235274.775	3332142.924	235270.064	3332157.165	235279.486	3332128.683
522	534+870	235284.269	3332146.064	235279.558	3332160.305	235288.980	3332131.823
523	534+880	235293.763	3332149.205	235289.052	3332163.446	235298.474	3332134.964
524	534+890	235303.257	3332152.346	235298.546	3332166.587	235307.968	3332138.105
525	534+900	235312.751	3332155.486	235308.040	3332169.727	235317.462	3332141.245
526	534+910	235322.245	3332158.627	235317.534	3332172.868	235326.956	3332144.386
527	534+920	235331.739	3332161.768	235327.028	3332176.009	235336.450	3332147.527
528	534+930	235341.233	3332164.908	235336.522	3332179.149	235345.944	3332150.667
529	534+940	235350.727	3332168.049	235346.016	3332182.290	235355.438	3332153.808
530	534+950	235360.221	3332171.190	235355.510	3332185.431	235364.932	3332156.949
531	534+960	235369.715	3332174.330	235365.004	3332188.571	235374.426	3332160.089
532	534+970	235379.209	3332177.471	235374.498	3332191.712	235383.920	3332163.230
533	534+980	235388.703	3332180.612	235383.992	3332194.853	235393.414	3332166.371
534	534+990	235398.197	3332183.752	235393.486	3332197.993	235402.908	3332169.511
535	535+000	235407.691	3332186.893	235402.980	3332201.134	235412.402	3332172.652
536	535+010	235417.185	3332190.034	235412.474	3332204.275	235421.897	3332175.793

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.150**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
537	535+020	235426.680	3332193.174	235421.968	3332207.415	235431.391	3332178.933
538	535+030	235436.174	3332196.315	235431.463	3332210.556	235440.885	3332182.074
539	535+040	235445.668	3332199.456	235440.957	3332213.697	235450.379	3332185.215
540	535+050	235455.162	3332202.596	235450.451	3332216.837	235459.873	3332188.355
541	535+060	235464.656	3332205.737	235459.945	3332219.978	235469.367	3332191.496
542	535+070	235474.150	3332208.878	235469.439	3332223.119	235478.861	3332194.637
543	535+080	235483.644	3332212.018	235478.933	3332226.259	235488.355	3332197.777
544	535+090	235493.138	3332215.159	235488.427	3332229.400	235497.849	3332200.918
545	535+100	235502.632	3332218.300	235497.921	3332232.541	235507.343	3332204.059
546	535+110	235512.126	3332221.440	235507.415	3332235.681	235516.837	3332207.199
547	535+120	235521.620	3332224.581	235516.909	3332238.822	235526.331	3332210.340
548	535+130	235531.114	3332227.722	235526.403	3332241.963	235535.825	3332213.481
549	535+140	235540.608	3332230.862	235535.897	3332245.103	235545.319	3332216.621
550	535+150	235550.102	3332234.003	235545.391	3332248.244	235554.813	3332219.762
551	535+160	235559.596	3332237.144	235554.885	3332251.385	235564.307	3332222.903
552	535+170	235569.090	3332240.284	235564.379	3332254.525	235573.801	3332226.043
553	535+180	235578.584	3332243.425	235573.873	3332257.666	235583.295	3332229.184
554	535+190	235588.078	3332246.566	235583.367	3332260.807	235592.789	3332232.325
555	535+200	235597.572	3332249.706	235592.861	3332263.947	235602.283	3332235.465
556	535+210	235607.066	3332252.847	235602.355	3332267.088	235611.777	3332238.606
557	535+220	235616.560	3332255.988	235611.849	3332270.229	235621.271	3332241.747
558	535+230	235626.054	3332259.128	235621.343	3332273.369	235630.765	3332244.887
559	535+240	235635.548	3332262.269	235630.837	3332276.510	235640.259	3332248.028
560	535+250	235645.042	3332265.410	235640.331	3332279.651	235649.753	3332251.169
561	535+260	235654.536	3332268.550	235649.825	3332282.792	235659.247	3332254.309
562	535+270	235664.030	3332271.691	235659.319	3332285.932	235668.741	3332257.450
563	535+280	235673.524	3332274.832	235668.813	3332289.073	235678.235	3332260.591
564	535+290	235683.018	3332277.973	235678.307	3332292.214	235687.729	3332263.731
565	535+300	235692.512	3332281.113	235687.801	3332295.354	235697.223	3332266.872
566	535+310	235702.006	3332284.254	235697.295	3332298.495	235706.717	3332270.013
567	535+320	235711.500	3332287.395	235706.789	3332301.636	235716.211	3332273.154
568	535+330	235720.994	3332290.535	235716.283	3332304.776	235725.705	3332276.294
569	535+340	235730.488	3332293.676	235725.777	3332307.917	235735.199	3332279.435
570	535+350	235739.982	3332296.817	235735.271	3332311.058	235744.693	3332282.576
571	535+360	235749.476	3332299.957	235744.765	3332314.198	235754.187	3332285.716
572	535+370	235758.970	3332303.098	235754.259	3332317.339	235763.681	3332288.857
573	535+380	235768.464	3332306.239	235763.753	3332320.480	235773.175	3332291.998
574	535+390	235777.958	3332309.379	235773.247	3332323.620	235782.669	3332295.138
575	535+400	235787.452	3332312.520	235782.741	3332326.761	235792.163	3332298.279
576	535+410	235796.946	3332315.661	235792.235	3332329.902	235801.657	3332301.420
577	535+420	235806.440	3332318.801	235801.729	3332333.042	235811.151	3332304.560
578	535+430	235815.934	3332321.942	235811.223	3332336.183	235820.645	3332307.701
579	535+440	235825.428	3332325.083	235820.717	3332339.324	235830.139	3332310.842
580	535+450	235834.922	3332328.223	235830.211	3332342.464	235839.633	3332313.982
581	535+460	235844.416	3332331.364	235839.705	3332345.605	235849.127	3332317.123

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.151**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
582	535+470	235853.910	3332334.505	235849.199	3332348.746	235858.621	3332320.264
583	535+480	235863.404	3332337.645	235858.693	3332351.886	235868.115	3332323.404
584	535+490	235872.898	3332340.786	235868.187	3332355.027	235877.609	3332326.545
585	535+500	235882.392	3332343.927	235877.681	3332358.168	235887.103	3332329.686
586	535+510	235891.886	3332347.067	235887.175	3332361.308	235896.597	3332332.826
587	535+520	235901.380	3332350.208	235896.669	3332364.449	235906.091	3332335.967
588	535+530	235910.874	3332353.349	235906.163	3332367.590	235915.585	3332339.108
589	535+540	235920.368	3332356.489	235915.657	3332370.730	235925.079	3332342.248
590	535+550	235929.862	3332359.630	235925.151	3332373.871	235934.573	3332345.389
591	535+560	235939.356	3332362.771	235934.645	3332377.012	235944.067	3332348.530
592	535+570	235948.850	3332365.911	235944.139	3332380.152	235953.561	3332351.670
593	535+580	235958.344	3332369.052	235953.633	3332383.293	235963.055	3332354.811
594	535+590	235967.838	3332372.193	235963.127	3332386.434	235972.549	3332357.952
595	535+600	235977.332	3332375.333	235972.621	3332389.574	235982.043	3332361.092
596	535+610	235986.826	3332378.474	235982.115	3332392.715	235991.537	3332364.233
597	535+620	235996.320	3332381.615	235991.609	3332395.856	236001.031	3332367.374
598	535+630	236005.814	3332384.755	236001.103	3332398.996	236010.525	3332370.514
599	535+640	236015.308	3332387.896	236010.597	3332402.137	236020.019	3332373.655
600	535+650	236024.802	3332391.037	236020.091	3332405.278	236029.513	3332376.796
601	535+660	236034.296	3332394.177	236029.585	3332408.418	236039.007	3332379.936
602	535+670	236043.790	3332397.318	236039.079	3332411.559	236048.501	3332383.077
603	535+680	236053.284	3332400.459	236048.573	3332414.700	236057.995	3332386.218
604	535+690	236062.778	3332403.599	236058.067	3332417.840	236067.489	3332389.358
605	535+700	236072.272	3332406.740	236067.561	3332420.981	236076.983	3332392.499
606	535+710	236081.766	3332409.881	236077.055	3332424.122	236086.477	3332395.640
607	535+720	236091.260	3332413.021	236086.549	3332427.262	236095.971	3332398.780
608	535+730	236100.754	3332416.162	236096.043	3332430.403	236105.465	3332401.921
609	535+740	236110.248	3332419.303	236105.537	3332433.544	236114.959	3332405.062
610	535+750	236119.742	3332422.443	236115.031	3332436.684	236124.453	3332408.202
611	535+760	236129.236	3332425.584	236124.525	3332439.825	236133.947	3332411.343
612	535+770	236138.730	3332428.725	236134.019	3332442.966	236143.441	3332414.484
613	535+780	236148.224	3332431.865	236143.513	3332446.106	236152.935	3332417.624
614	535+790	236157.718	3332435.006	236153.007	3332449.247	236162.429	3332420.765
615	535+800	236167.212	3332438.147	236162.501	3332452.388	236171.923	3332423.906
616	535+810	236176.706	3332441.287	236171.995	3332455.528	236181.417	3332427.046
617	535+820	236186.200	3332444.428	236181.489	3332458.669	236190.911	3332430.187
618	535+830	236195.694	3332447.569	236190.983	3332461.810	236200.405	3332433.328
619	535+840	236205.188	3332450.709	236200.477	3332464.950	236209.899	3332436.468
620	535+850	236214.682	3332453.850	236209.971	3332468.091	236219.393	3332439.609
621	535+860	236224.176	3332456.991	236219.465	3332471.232	236228.887	3332442.750
622	535+870	236233.670	3332460.131	236228.959	3332474.373	236238.381	3332445.890
623	535+880	236243.164	3332463.272	236238.453	3332477.513	236247.875	3332449.031
624	535+890	236252.658	3332466.413	236247.947	3332480.654	236257.369	3332452.172
625	535+900	236262.152	3332469.554	236257.441	3332483.795	236266.863	3332455.312
626	535+910	236271.646	3332472.694	236266.935	3332486.935	236276.357	3332458.453

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.152**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
627	535+920	236281.140	3332475.835	236276.429	3332490.076	236285.851	3332461.594
628	535+930	236290.634	3332478.976	236285.923	3332493.217	236295.345	3332464.735
629	535+940	236300.128	3332482.116	236295.417	3332496.357	236304.839	3332467.875
630	535+950	236309.622	3332485.257	236304.911	3332499.498	236314.333	3332471.016
631	535+960	236319.116	3332488.398	236314.405	3332502.639	236323.827	3332474.157
632	535+970	236328.610	3332491.538	236323.899	3332505.779	236333.321	3332477.297
633	535+980	236338.104	3332494.679	236333.393	3332508.920	236342.815	3332480.438
634	535+990	236347.598	3332497.820	236342.887	3332512.061	236352.309	3332483.579
635	536+000	236357.092	3332500.960	236352.381	3332515.201	236361.803	3332486.719
636	536+010	236366.586	3332504.101	236361.875	3332518.342	236371.297	3332489.860
637	536+020	236376.080	3332507.242	236371.369	3332521.483	236380.791	3332493.001
638	536+030	236385.574	3332510.382	236380.863	3332524.623	236390.285	3332496.141
639	536+040	236395.068	3332513.523	236390.357	3332527.764	236399.779	3332499.282
640	536+050	236404.562	3332516.664	236399.851	3332530.905	236409.273	3332502.423
641	536+060	236414.056	3332519.804	236409.345	3332534.045	236418.767	3332505.563
642	536+070	236423.550	3332522.945	236418.839	3332537.186	236428.261	3332508.704
643	536+080	236433.044	3332526.086	236428.333	3332540.327	236437.755	3332511.845
644	536+090	236442.538	3332529.226	236437.827	3332543.467	236447.249	3332514.985
645	536+100	236452.032	3332532.367	236447.321	3332546.608	236456.743	3332518.126
646	536+110	236461.526	3332535.508	236456.815	3332549.749	236466.237	3332521.267
647	536+120	236471.020	3332538.648	236466.309	3332552.889	236475.731	3332524.407
648	536+130	236480.514	3332541.789	236475.803	3332556.030	236485.225	3332527.548
649	536+140	236490.008	3332544.930	236485.297	3332559.171	236494.719	3332530.689
650	536+150	236499.502	3332548.070	236494.791	3332562.311	236504.213	3332533.829
651	536+160	236508.996	3332551.211	236504.285	3332565.452	236513.707	3332536.970
652	536+170	236518.490	3332554.352	236513.779	3332568.593	236523.201	3332540.111
653	536+180	236527.984	3332557.492	236523.273	3332571.733	236532.695	3332543.251
654	536+190	236537.478	3332560.634	236532.760	3332574.873	236542.196	3332546.395
655	536+200	236546.967	3332563.789	236542.214	3332578.016	236551.720	3332549.562
656	536+210	236556.445	3332566.978	236551.628	3332581.183	236561.263	3332552.773
657	536+220	236565.905	3332570.219	236560.993	3332584.393	236570.817	3332556.046
658	536+230	236575.340	3332573.533	236570.305	3332587.663	236580.375	3332559.404
659	536+240	236584.742	3332576.939	236579.555	3332591.014	236589.930	3332562.865
660	536+250	236594.103	3332580.456	236588.735	3332594.463	236599.471	3332566.450
661	536+260	236603.414	3332584.103	236597.837	3332598.028	236608.992	3332570.179
662	536+270	236612.666	3332587.898	236606.859	3332601.728	236618.474	3332574.067
663	536+280	236621.854	3332591.846	236615.817	3332605.578	236627.891	3332578.114
664	536+290	236630.974	3332595.946	236624.710	3332609.576	236637.239	3332582.317
665	536+300	236640.025	3332600.198	236633.534	3332613.721	236646.516	3332586.675
666	536+310	236649.004	3332604.601	236642.288	3332618.014	236655.720	3332591.188
667	536+320	236657.908	3332609.152	236650.970	3332622.451	236664.846	3332595.853
668	536+330	236666.735	3332613.851	236659.576	3332627.033	236673.894	3332600.669
669	536+340	236675.483	3332618.697	236668.105	3332631.757	236682.860	3332605.636
670	536+350	236684.148	3332623.687	236676.554	3332636.623	236691.742	3332610.752
671	536+360	236692.729	3332628.822	236684.921	3332641.629	236700.538	3332616.014

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.153**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
672	536+370	236701.224	3332634.098	236693.203	3332646.774	236709.245	3332621.423
673	536+380	236709.629	3332639.516	236701.398	3332652.056	236717.860	3332626.976
674	536+390	236717.943	3332645.073	236709.504	3332657.474	236726.382	3332632.672
675	536+400	236726.163	3332650.767	236717.518	3332663.026	236734.807	3332638.509
676	536+410	236734.287	3332656.598	236725.439	3332668.711	236743.134	3332644.485
677	536+420	236742.312	3332662.564	236733.264	3332674.527	236751.361	3332650.600
678	536+430	236750.238	3332668.662	236740.991	3332680.473	236759.484	3332656.851
679	536+440	236758.060	3332674.891	236748.618	3332686.547	236767.502	3332663.236
680	536+450	236765.777	3332681.250	236756.143	3332692.747	236775.412	3332669.754
681	536+460	236773.388	3332687.737	236763.563	3332699.072	236783.213	3332676.403
682	536+470	236780.889	3332694.350	236770.876	3332705.519	236790.902	3332683.181
683	536+480	236788.279	3332701.087	236778.082	3332712.088	236798.477	3332690.086
684	536+490	236795.556	3332707.946	236785.177	3332718.775	236805.935	3332697.117
685	536+500	236802.717	3332714.925	236792.159	3332725.580	236813.276	3332704.271
686	536+510	236809.762	3332722.023	236799.027	3332732.500	236820.496	3332711.546
687	536+520	236816.686	3332729.237	236805.779	3332739.534	236827.594	3332718.940
688	536+530	236823.490	3332736.566	236812.412	3332746.680	236834.568	3332726.452
689	536+540	236830.171	3332744.007	236818.926	3332753.934	236841.415	3332734.079
690	536+550	236836.726	3332751.558	236825.318	3332761.297	236848.135	3332741.819
691	536+560	236843.155	3332759.217	236831.586	3332768.765	236854.724	3332749.670
692	536+570	236849.455	3332766.983	236837.728	3332776.336	236861.182	3332757.630
693	536+580	236855.626	3332774.852	236843.746	3332784.011	236867.505	3332765.694
694	536+590	236861.671	3332782.818	236849.658	3332791.800	236873.685	3332773.836
695	536+600	236867.607	3332790.865	236855.481	3332799.695	236879.733	3332782.036
696	536+610	236873.449	3332798.982	236861.230	3332807.682	236885.668	3332790.282
697	536+620	236879.213	3332807.153	236866.920	3332815.749	236891.505	3332798.558
698	536+630	236884.915	3332815.368	236872.567	3332823.885	236897.263	3332806.852
699	536+640	236890.574	3332823.613	236878.189	3332832.076	236902.958	3332815.151
700	536+650	236896.205	3332831.877	236883.801	3332840.312	236908.609	3332823.442
701	536+660	236901.825	3332840.148	236889.418	3332848.578	236914.232	3332831.718
702	536+670	236907.445	3332848.419	236895.039	3332856.849	236919.852	3332839.989
703	536+680	236913.066	3332856.691	236900.659	3332865.121	236925.473	3332848.260
704	536+690	236918.686	3332864.962	236906.279	3332873.392	236931.093	3332856.532
705	536+700	236924.306	3332873.233	236911.899	3332881.663	236936.713	3332864.803
706	536+710	236929.926	3332881.504	236917.519	3332889.935	236942.333	3332873.074
707	536+720	236935.546	3332889.776	236923.139	3332898.206	236947.953	3332881.346
708	536+730	236941.166	3332898.047	236928.759	3332906.477	236953.573	3332889.617
709	536+740	236946.786	3332906.318	236934.379	3332914.748	236959.193	3332897.888
710	536+750	236952.406	3332914.590	236940.000	3332923.020	236964.813	3332906.159
711	536+760	236958.027	3332922.861	236945.620	3332931.291	236970.434	3332914.431
712	536+770	236963.647	3332931.132	236951.240	3332939.562	236976.054	3332922.702
713	536+780	236969.267	3332939.403	236956.860	3332947.834	236981.674	3332930.973
714	536+790	236974.887	3332947.675	236962.480	3332956.105	236987.294	3332939.245
715	536+800	236980.507	3332955.946	236968.100	3332964.376	236992.914	3332947.516
716	536+810	236986.127	3332964.217	236973.720	3332972.647	236998.534	3332955.787

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.154**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
717	536+820	236991.747	3332972.489	236979.340	3332980.919	237004.154	3332964.058
718	536+830	236997.367	3332980.760	236984.961	3332989.190	237009.774	3332972.330
719	536+840	237002.988	3332989.031	236990.581	3332997.461	237015.395	3332980.601
720	536+850	237008.608	3332997.302	236996.201	3333005.733	237021.015	3332988.872
721	536+860	237014.228	3333005.574	237001.821	3333014.004	237026.635	3332997.144
722	536+870	237019.848	3333013.845	237007.441	3333022.275	237032.255	3333005.415
723	536+880	237025.468	3333022.116	237013.061	3333030.546	237037.875	3333013.686
724	536+890	237031.088	3333030.388	237018.681	3333038.818	237043.495	3333021.957
725	536+900	237036.708	3333038.659	237024.301	3333047.089	237049.115	3333030.229
726	536+910	237042.329	3333046.930	237029.922	3333055.360	237054.735	3333038.500
727	536+920	237047.949	3333055.201	237035.542	3333063.632	237060.356	3333046.771
728	536+930	237053.569	3333063.473	237041.162	3333071.903	237065.976	3333055.043
729	536+940	237059.189	3333071.744	237046.782	3333080.174	237071.596	3333063.314
730	536+950	237064.809	3333080.015	237052.402	3333088.445	237077.216	3333071.585
731	536+960	237070.429	3333088.287	237058.022	3333096.717	237082.836	3333079.856
732	536+970	237076.049	3333096.558	237063.642	3333104.988	237088.456	3333088.128
733	536+980	237081.669	3333104.829	237069.262	3333113.259	237094.076	3333096.399
734	536+990	237087.290	3333113.100	237074.883	3333121.531	237099.696	3333104.670
735	537+000	237092.910	3333121.372	237080.503	3333129.802	237105.317	3333112.942
736	537+010	237098.530	3333129.643	237086.123	3333138.073	237110.937	3333121.213
737	537+020	237104.150	3333137.914	237091.743	3333146.344	237116.557	3333129.484
738	537+030	237109.770	3333146.186	237097.363	3333154.616	237122.177	3333137.755
739	537+040	237115.390	3333154.457	237102.983	3333162.887	237127.797	3333146.027
740	537+050	237121.009	3333162.729	237108.597	3333171.152	237133.421	3333154.306
741	537+060	237126.616	3333171.009	237114.185	3333179.404	237139.047	3333162.615
742	537+070	237132.197	3333179.307	237119.733	3333187.653	237144.661	3333170.961
743	537+080	237137.739	3333187.631	237125.228	3333195.907	237150.249	3333179.355
744	537+090	237143.227	3333195.990	237130.657	3333204.175	237155.797	3333187.806
745	537+100	237148.648	3333204.393	237136.011	3333212.473	237161.286	3333196.313
746	537+110	237154.000	3333212.841	237141.295	3333220.815	237166.705	3333204.866
747	537+120	237159.281	3333221.332	237146.510	3333229.201	237172.052	3333213.464
748	537+130	237164.491	3333229.868	237151.655	3333237.630	237177.327	3333222.106
749	537+140	237169.630	3333238.447	237156.730	3333246.101	237182.530	3333230.792
750	537+150	237174.697	3333247.068	237161.733	3333254.614	237187.660	3333239.521
751	537+160	237179.692	3333255.731	237166.666	3333263.169	237192.717	3333248.293
752	537+170	237184.614	3333264.435	237171.527	3333271.765	237197.702	3333257.106
753	537+180	237189.464	3333273.180	237176.316	3333280.401	237202.612	3333265.960
754	537+190	237194.241	3333281.966	237181.033	3333289.076	237207.449	3333274.855
755	537+200	237198.945	3333290.791	237185.678	3333297.791	237212.211	3333283.790
756	537+210	237203.574	3333299.654	237190.250	3333306.543	237216.899	3333292.765
757	537+220	237208.130	3333308.556	237194.749	3333315.334	237221.511	3333301.778
758	537+230	237212.612	3333317.496	237199.174	3333324.162	237226.049	3333310.829
759	537+240	237217.018	3333326.472	237203.526	3333333.026	237230.511	3333319.918
760	537+250	237221.350	3333335.485	237207.804	3333341.927	237234.897	3333329.044
761	537+260	237225.607	3333344.534	237212.007	3333350.862	237239.207	3333338.206

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.155**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
762	537+270	237229.788	3333353.618	237216.136	3333359.833	237243.440	3333347.403
763	537+280	237233.893	3333362.737	237220.190	3333368.837	237247.596	3333356.636
764	537+290	237237.922	3333371.889	237224.168	3333377.875	237251.676	3333365.903
765	537+300	237241.875	3333381.075	237228.072	3333386.946	237255.678	3333375.203
766	537+310	237245.751	3333390.293	237231.899	3333396.049	237259.602	3333384.537
767	537+320	237249.550	3333399.543	237235.651	3333405.184	237263.449	3333393.902
768	537+330	237253.271	3333408.825	237239.326	3333414.349	237267.217	3333403.300
769	537+340	237256.916	3333418.137	237242.925	3333423.545	237270.907	3333412.729
770	537+350	237260.482	3333427.479	237246.447	3333432.771	237274.518	3333422.188
771	537+360	237263.971	3333436.851	237249.892	3333442.025	237278.050	3333431.677
772	537+370	237267.381	3333446.251	237253.259	3333451.308	237281.503	3333441.195
773	537+380	237270.713	3333455.680	237256.550	3333460.619	237284.877	3333450.741
774	537+390	237273.966	3333465.136	237259.762	3333469.957	237288.171	3333460.315
775	537+400	237277.141	3333474.619	237262.897	3333479.321	237291.385	3333469.917
776	537+410	237280.236	3333484.128	237265.953	3333488.711	237294.519	3333479.544
777	537+420	237283.252	3333493.662	237268.931	3333498.126	237297.572	3333489.198
778	537+430	237286.188	3333503.221	237271.831	3333507.566	237300.545	3333498.877
779	537+440	237289.045	3333512.805	237274.652	3333517.029	237303.437	3333508.580
780	537+450	237291.821	3333522.411	237277.394	3333526.516	237306.249	3333518.307
781	537+460	237294.518	3333532.041	237280.056	3333536.025	237308.979	3333528.056
782	537+470	237297.134	3333541.693	237282.640	3333545.556	237311.628	3333537.829
783	537+480	237299.669	3333551.366	237285.144	3333555.109	237314.195	3333547.623
784	537+490	237302.124	3333561.060	237287.568	3333564.681	237316.680	3333557.438
785	537+500	237304.498	3333570.774	237289.912	3333574.274	237319.084	3333567.274
786	537+510	237306.791	3333580.507	237292.177	3333583.886	237321.406	3333577.129
787	537+520	237309.003	3333590.260	237294.361	3333593.516	237323.645	3333587.003
788	537+530	237311.133	3333600.030	237296.465	3333603.165	237325.802	3333596.895
789	537+540	237313.182	3333609.818	237298.488	3333612.830	237327.877	3333606.806
790	537+550	237315.150	3333619.622	237300.431	3333622.512	237329.869	3333616.733
791	537+560	237317.036	3333629.443	237302.294	3333632.214	237331.778	3333626.672
792	537+570	237318.849	3333639.277	237304.090	3333641.951	237333.609	3333636.603
793	537+580	237320.607	3333649.121	237305.834	3333651.724	237335.379	3333646.519
794	537+590	237322.324	3333658.973	237307.544	3333661.528	237337.105	3333656.418
795	537+600	237324.019	3333668.828	237309.234	3333671.360	237338.803	3333666.296
796	537+610	237325.705	3333678.685	237310.920	3333681.215	237340.490	3333676.155
797	537+620	237327.392	3333688.542	237312.606	3333691.071	237342.177	3333686.012
798	537+630	237329.078	3333698.399	237314.293	3333700.928	237343.863	3333695.869
799	537+640	237330.764	3333708.255	237315.979	3333710.785	237345.550	3333705.726
800	537+650	237332.451	3333718.112	237317.666	3333720.642	237347.236	3333715.582
801	537+660	237334.137	3333727.969	237319.352	3333730.498	237348.922	3333725.439
802	537+670	237335.824	3333737.826	237321.038	3333740.355	237350.609	3333735.296
803	537+680	237337.510	3333747.682	237322.725	3333750.212	237352.295	3333745.153
804	537+690	237339.196	3333757.539	237324.411	3333760.069	237353.982	3333755.010
805	537+700	237340.883	3333767.396	237326.098	3333769.926	237355.668	3333764.866
806	537+710	237342.569	3333777.253	237327.784	3333779.782	237357.354	3333774.723

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.156**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
807	537+720	237344.256	3333787.110	237329.470	3333789.639	237359.041	3333784.580
808	537+730	237345.942	3333796.966	237331.157	3333799.496	237360.727	3333794.437
809	537+740	237347.628	3333806.823	237332.843	3333809.353	237362.414	3333804.293
810	537+750	237349.315	3333816.680	237334.530	3333819.209	237364.100	3333814.150
811	537+760	237351.001	3333826.537	237336.216	3333829.066	237365.786	3333824.007
812	537+770	237352.688	3333836.393	237337.902	3333838.923	237367.473	3333833.864
813	537+780	237354.376	3333846.250	237339.593	3333848.795	237369.158	3333843.704
814	537+790	237356.089	3333856.102	237341.315	3333858.697	237370.863	3333853.507
815	537+800	237357.835	3333865.948	237343.070	3333868.592	237372.600	3333863.304
816	537+810	237359.614	3333875.789	237344.858	3333878.482	237374.370	3333873.096
817	537+820	237361.426	3333885.623	237346.679	3333888.366	237376.173	3333882.881
818	537+830	237363.271	3333895.452	237348.533	3333898.243	237378.009	3333892.660
819	537+840	237365.148	3333905.274	237350.419	3333908.114	237379.876	3333902.433
820	537+850	237367.058	3333915.090	237352.339	3333917.979	237381.777	3333912.200
821	537+860	237369.001	3333924.899	237354.291	3333927.838	237383.710	3333921.961
822	537+870	237370.976	3333934.702	237356.277	3333937.690	237385.676	3333931.715
823	537+880	237372.984	3333944.499	237358.295	3333947.535	237387.674	3333941.462
824	537+890	237375.025	3333954.288	237360.346	3333957.374	237389.704	3333951.203
825	537+900	237377.098	3333964.071	237362.429	3333967.205	237391.767	3333960.936
826	537+910	237379.204	3333973.847	237364.546	3333977.030	237393.863	3333970.663
827	537+920	237381.343	3333983.615	237366.695	3333986.847	237395.990	3333980.383
828	537+930	237383.514	3333993.377	237368.877	3333996.658	237398.151	3333990.096
829	537+940	237385.717	3334003.131	237371.092	3334006.461	237400.343	3333999.801
830	537+950	237387.954	3334012.878	237373.339	3334016.256	237402.568	3334009.499
831	537+960	237390.222	3334022.617	237375.619	3334026.044	237404.825	3334019.190
832	537+970	237392.523	3334032.349	237377.931	3334035.824	237407.115	3334028.873
833	537+980	237394.857	3334042.072	237380.277	3334045.597	237409.437	3334038.548
834	537+990	237397.223	3334051.789	237382.654	3334055.362	237411.791	3334048.215
835	538+000	237399.621	3334061.497	237385.065	3334065.118	237414.177	3334057.875
836	538+010	237402.051	3334071.197	237387.507	3334074.867	237416.595	3334067.527
837	538+020	237404.514	3334080.889	237389.983	3334084.607	237419.046	3334077.170
838	538+030	237407.009	3334090.572	237392.490	3334094.339	237421.529	3334086.805
839	538+040	237409.537	3334100.248	237395.030	3334104.063	237424.044	3334096.432
840	538+050	237412.097	3334109.915	237397.603	3334113.778	237426.590	3334106.051
841	538+060	237414.689	3334119.573	237400.208	3334123.485	237429.169	3334115.661
842	538+070	237417.313	3334129.222	237402.845	3334133.183	237431.780	3334125.262
843	538+080	237419.969	3334138.863	237405.514	3334142.872	237434.423	3334134.855
844	538+090	237422.656	3334148.495	237408.212	3334152.540	237437.101	3334144.450
845	538+100	237425.353	3334158.125	237410.909	3334162.170	237439.797	3334154.080
846	538+110	237428.049	3334167.754	237413.605	3334171.799	237442.494	3334163.710
847	538+120	237430.746	3334177.384	237416.302	3334181.429	237445.190	3334173.339
848	538+130	237433.443	3334187.014	237418.998	3334191.058	237447.887	3334182.969
849	538+140	237436.139	3334196.643	237421.695	3334200.688	237450.584	3334192.598
850	538+150	237438.836	3334206.273	237424.392	3334210.318	237453.280	3334202.228
851	538+160	237441.533	3334215.902	237427.088	3334219.947	237455.977	3334211.857

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.157**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
852	538+170	237444.229	3334225.532	<b>237422.563</b>	<b>3334231.599</b>	<b>237465.896</b>	<b>3334219.464</b>
853	538+180	237446.926	3334235.161	237425.259	3334241.229	237468.592	3334229.094
854	538+190	237449.622	3334244.791	237427.956	3334250.858	237471.289	3334238.724
855	538+200	237452.319	3334254.420	237430.652	3334260.488	237473.985	3334248.353
856	538+210	237455.016	3334264.050	237433.349	3334270.117	237476.682	3334257.983
857	538+220	237457.712	3334273.680	237436.046	3334279.747	237479.379	3334267.612
858	538+230	237460.409	3334283.309	237438.742	3334289.376	237482.075	3334277.242
859	538+240	237463.105	3334292.939	237441.439	3334299.006	237484.772	3334286.871
860	538+250	237465.802	3334302.568	237444.135	3334308.636	237487.468	3334296.501
861	538+260	237468.499	3334312.198	237446.832	3334318.265	237490.165	3334306.130
862	538+270	237471.195	3334321.827	237449.529	3334327.895	237492.862	3334315.760
863	538+280	237473.892	3334331.457	237452.225	3334337.524	237495.558	3334325.390
864	538+290	237476.588	3334341.086	237454.922	3334347.154	237498.255	3334335.019
865	538+300	237479.285	3334350.716	237457.618	3334356.783	237500.951	3334344.649
866	538+310	237481.982	3334360.346	237460.315	3334366.413	237503.648	3334354.278
867	538+320	237484.678	3334369.975	237463.012	3334376.042	237506.345	3334363.908
868	538+330	237487.375	3334379.605	237465.708	3334385.672	237509.041	3334373.537
869	538+340	237490.071	3334389.234	237468.405	3334395.302	237511.738	3334383.167
870	538+350	237492.768	3334398.864	237471.101	3334404.931	237514.434	3334392.796
871	538+360	237495.465	3334408.493	237473.798	3334414.561	237517.131	3334402.426
872	538+370	237498.161	3334418.123	237476.495	3334424.190	237519.828	3334412.056
873	538+380	237500.858	3334427.752	237479.191	3334433.820	237522.524	3334421.685
874	538+390	237503.554	3334437.382	237481.888	3334443.449	237525.221	3334431.315
875	538+400	237506.251	3334447.012	<b>237482.177</b>	<b>3334453.753</b>	<b>237530.325</b>	<b>3334440.270</b>
876	538+410	237508.948	3334456.641	237484.874	3334463.383	237533.021	3334449.900
877	538+420	237511.644	3334466.271	237487.570	3334473.012	237535.718	3334459.529
878	538+430	237514.341	3334475.900	237490.267	3334482.642	237538.415	3334469.159
879	538+440	237517.037	3334485.530	237492.963	3334492.271	237541.111	3334478.788
880	538+450	237519.734	3334495.159	237495.660	3334501.901	237543.808	3334488.418
881	538+460	237522.431	3334504.789	237498.357	3334511.530	237546.504	3334498.047
882	538+470	237525.127	3334514.418	237501.053	3334521.160	237549.201	3334507.677
883	538+480	237527.824	3334524.048	237503.750	3334530.790	237551.898	3334517.306
884	538+490	237530.520	3334533.678	237506.447	3334540.419	237554.594	3334526.936
885	538+500	237533.217	3334543.307	237509.143	3334550.049	237557.291	3334536.566
886	538+510	237535.914	3334552.937	237511.840	3334559.678	237559.987	3334546.195
887	538+520	237538.610	3334562.566	237514.536	3334569.308	237562.684	3334555.825
888	538+530	237541.307	3334572.196	237517.233	3334578.937	237565.381	3334565.454
889	538+540	237544.003	3334581.825	237519.930	3334588.567	237568.077	3334575.084
890	538+550	237546.700	3334591.455	237522.626	3334598.196	237570.774	3334584.713
891	538+560	237549.397	3334601.084	237525.323	3334607.826	237573.471	3334594.343
892	538+570	237552.093	3334610.714	237528.019	3334617.455	237576.167	3334603.972
893	538+580	237554.790	3334620.344	237530.716	3334627.085	237578.864	3334613.602
894	538+590	237557.486	3334629.973	237533.413	3334636.715	237581.560	3334623.232
895	538+600	237560.183	3334639.603	237536.109	3334646.344	237584.257	3334632.861
896	538+610	237562.870	3334649.235	237538.774	3334655.999	237586.965	3334642.571

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.158**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
897	538+620	237565.511	3334658.880	237541.383	3334665.423	237589.640	3334652.336
898	538+630	237568.104	3334668.538	237543.943	3334674.960	237592.265	3334662.115
899	538+640	237570.649	3334678.208	237546.456	3334684.510	237594.842	3334671.907
900	538+650	237573.146	3334687.892	237548.922	3334694.073	237597.370	3334681.711
901	538+660	237575.594	3334697.588	237551.339	3334703.647	237599.848	3334691.528
902	538+670	237577.993	3334707.295	237553.709	3334713.234	237602.278	3334701.357
903	538+680	237580.344	3334717.015	237556.030	3334722.832	237604.658	3334711.198
904	538+690	237582.646	3334726.746	237558.304	3334732.441	237606.989	3334721.051
905	538+700	237584.900	3334736.489	237560.529	3334742.062	237609.271	3334730.916
906	538+710	237587.105	3334746.243	237562.707	3334751.694	237611.503	3334740.792
907	538+720	237589.261	3334756.008	237564.836	3334761.337	237613.687	3334750.679
908	538+730	237591.368	3334765.783	237566.917	3334770.990	237615.820	3334760.576
909	538+740	237593.427	3334775.569	237568.949	3334780.654	237617.904	3334770.484
910	538+750	237595.436	3334785.365	237570.934	3334790.327	237619.939	3334780.403
911	538+760	237597.397	3334795.171	237572.869	3334800.011	237621.924	3334790.331
912	538+770	237599.308	3334804.987	237574.757	3334809.704	237623.859	3334800.270
913	538+780	237601.170	3334814.812	237576.596	3334819.406	237625.744	3334810.218
914	538+790	237602.983	3334824.646	237578.386	3334829.117	237627.580	3334820.175
915	538+800	237604.747	3334834.489	237580.128	3334838.837	237629.366	3334830.141
916	538+810	237606.462	3334844.341	237581.821	3334848.566	237631.102	3334840.116
917	538+820	237608.127	3334854.201	237583.466	3334858.303	237632.788	3334850.100
918	538+830	237609.743	3334864.070	237585.062	3334868.048	237634.425	3334860.092
919	538+840	237611.310	3334873.947	237586.609	3334877.802	237636.011	3334870.092
920	538+850	237612.827	3334883.831	237588.107	3334887.562	237637.547	3334880.099
921	538+860	237614.295	3334893.722	237589.557	3334897.330	237639.033	3334890.115
922	538+870	237615.713	3334903.621	237590.957	3334907.105	237640.469	3334900.137
923	538+880	237617.082	3334913.527	237592.309	3334916.887	237641.855	3334910.167
924	538+890	237618.402	3334923.440	237593.612	3334926.676	237643.191	3334920.203
925	538+900	237619.671	3334933.359	237594.866	3334936.471	237644.477	3334930.246
926	538+910	237620.891	3334943.284	237596.071	3334946.272	237645.712	3334940.296
927	538+920	237622.062	3334953.215	237597.226	3334956.079	237646.897	3334950.351
928	538+930	237623.183	3334963.152	237598.333	3334965.892	237648.032	3334960.412
929	538+940	237624.254	3334973.095	237599.391	3334975.710	237649.117	3334970.479
930	538+950	237625.275	3334983.042	237600.400	3334985.534	237650.151	3334980.551
931	538+960	237626.247	3334992.995	237601.359	3334995.362	237651.135	3334990.628
932	538+970	237627.169	3335002.953	237602.269	3335005.195	237652.068	3335000.710
933	538+980	237628.041	3335012.914	237603.131	3335015.032	237652.951	3335010.797
934	538+990	237628.863	3335022.881	237603.943	3335024.874	237653.783	3335020.887
935	539+000	237629.635	3335032.851	237604.705	3335034.719	237654.565	3335030.982
936	539+010	237630.358	3335042.825	237605.419	3335044.569	237655.343	3335040.889
937	539+020	237631.031	3335052.802	237606.081	3335054.414	237656.117	3335050.802
938	539+030	237631.653	3335062.782	237597.023	3335064.256	237702.146	3335058.561
939	539+040	237632.226	3335072.766	237590.996	3335074.098	237697.378	3335069.191
940	539+050	237632.749	3335082.752	237588.007	3335083.940	237683.496	3335080.222
941	539+060	237633.222	3335092.741	237586.894	3335093.782	237679.491	3335090.666

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.159**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
942	539+070	237633.645	3335102.732	237583.758	3335104.720	237678.516	3335100.945
943	539+080	237634.018	3335112.725	237576.592	3335114.725	237675.497	3335111.280
944	539+090	237634.341	3335122.720	237578.980	3335124.371	237669.265	3335121.678
945	539+100	237634.614	3335132.716	237586.369	3335133.914	237659.607	3335132.096
946	539+110	237634.838	3335142.714	237607.799	3335143.250	237659.833	3335142.218
947	539+120	237635.011	3335152.712	237610.014	3335153.083	237660.008	3335152.342
948	539+130	237635.134	3335162.711	237610.135	3335162.957	237660.133	3335162.466
949	539+140	237635.207	3335172.711	237610.207	3335172.832	237660.207	3335172.591
950	539+150	237635.230	3335182.711	237610.230	3335182.707	237660.230	3335182.716
951	539+160	237635.203	3335192.711	237610.204	3335192.581	237660.203	3335192.841
952	539+170	237635.127	3335202.711	237610.128	3335202.456	237660.125	3335202.965
953	539+180	237635.000	3335212.710	237610.003	3335212.330	237659.997	3335213.090
954	539+190	237634.834	3335222.709	237609.837	3335222.286	237659.830	3335223.131
955	539+200	237634.665	3335232.707	237609.669	3335232.285	237659.661	3335233.129
956	539+210	237634.496	3335242.706	237609.500	3335242.284	237659.493	3335243.128
957	539+220	237634.327	3335252.704	237609.331	3335252.282	237659.324	3335253.126
958	539+230	237634.158	3335262.703	237609.162	3335262.281	237659.155	3335263.125
959	539+240	237633.989	3335272.701	237608.993	3335272.279	237658.986	3335273.124
960	539+250	237633.821	3335282.700	237608.824	3335282.278	237658.817	3335283.122
961	539+260	237633.652	3335292.699	237608.655	3335292.276	237658.648	3335293.121
962	539+270	237633.483	3335302.697	237608.486	3335302.275	237658.479	3335303.119
963	539+280	237633.314	3335312.696	237608.318	3335312.274	237658.310	3335313.118
964	539+290	237633.145	3335322.694	237608.149	3335322.272	237658.142	3335323.116
965	539+300	237632.976	3335332.693	237607.980	3335332.271	237657.973	3335333.115
966	539+310	237632.807	3335342.691	237607.811	3335342.269	237657.804	3335343.114
967	539+320	237632.638	3335352.690	237607.642	3335352.268	237657.635	3335353.112
968	539+330	237632.470	3335362.689	237607.473	3335362.266	237657.466	3335363.111
969	539+340	237632.301	3335372.687	237607.304	3335372.265	237657.297	3335373.109
970	539+350	237632.132	3335382.686	237607.135	3335382.264	237657.128	3335383.108
971	539+360	237631.963	3335392.684	237606.967	3335392.262	237656.959	3335393.107
972	539+370	237631.794	3335402.683	237606.798	3335402.261	237656.791	3335403.105
973	539+380	237631.625	3335412.681	237606.629	3335412.259	237656.622	3335413.104
974	539+390	237631.456	3335422.680	237606.460	3335422.258	237656.453	3335423.102
975	539+400	237631.287	3335432.679	237606.291	3335432.256	237656.284	3335433.101
976	539+410	237631.119	3335442.677	237606.122	3335442.255	237656.115	3335443.099
977	539+420	237630.950	3335452.676	237605.953	3335452.254	237655.946	3335453.098
978	539+430	237630.781	3335462.674	237605.784	3335462.252	237655.777	3335463.097
979	539+440	237630.612	3335472.673	237605.615	3335472.251	237655.608	3335473.095
980	539+450	237630.443	3335482.671	237605.447	3335482.249	237655.439	3335483.094
981	539+460	237630.274	3335492.670	237605.278	3335492.248	237655.271	3335493.092
982	539+470	237630.105	3335502.669	237605.109	3335502.246	237655.102	3335503.091
983	539+480	237629.936	3335512.667	237604.940	3335512.245	237654.933	3335513.089
984	539+490	237629.768	3335522.666	237604.771	3335522.244	237654.764	3335523.088
985	539+500	237629.599	3335532.664	237604.602	3335532.242	237654.595	3335533.087
986	539+510	237629.430	3335542.663	237604.433	3335542.241	237654.426	3335543.085

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.160**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
987	539+520	237629.261	3335552.662	237604.264	3335552.239	237654.257	3335553.084
988	539+530	237629.092	3335562.660	237604.096	3335562.238	237654.088	3335563.082
989	539+540	237628.923	3335572.659	237603.927	3335572.236	237653.920	3335573.081
990	539+550	237628.754	3335582.657	237603.758	3335582.235	237653.751	3335583.079
991	539+560	237628.585	3335592.656	237603.589	3335592.234	237653.582	3335593.078
992	539+570	237628.417	3335602.654	237603.420	3335602.232	237653.413	3335603.077
993	539+580	237628.248	3335612.653	237603.251	3335612.231	237653.244	3335613.075
994	539+590	237628.079	3335622.652	237603.082	3335622.229	237653.075	3335623.074
995	539+600	237627.915	3335632.650	237605.417	3335632.310	237652.912	3335633.029
996	539+610	237627.792	3335642.649	237605.293	3335642.455	237650.291	3335642.844
997	539+620	237627.758	3335652.649	237605.258	3335652.710	237650.258	3335652.589
998	539+630	237627.862	3335662.649	237605.365	3335663.072	237650.358	3335662.226
999	539+640	237628.150	3335672.644	237605.667	3335673.538	237650.633	3335671.751
1000	539+650	237628.672	3335682.630	237606.219	3335684.102	237651.124	3335681.159
1001	539+660	237629.474	3335692.598	237607.077	3335694.755	237651.871	3335690.441
1002	539+670	237630.604	3335702.533	237608.298	3335705.480	237652.912	3335699.586
1003	539+680	237632.104	3335712.419	237609.926	3335716.221	237654.282	3335708.618
1004	539+690	237633.983	3335722.241	237611.968	3335726.892	237655.998	3335717.589
1005	539+700	237636.237	3335731.983	237614.418	3335737.477	237658.057	3335726.488
1006	539+710	237638.865	3335741.631	237617.273	3335747.960	237660.458	3335735.301
1007	539+720	237641.862	3335751.170	237620.529	3335758.325	237663.195	3335744.015
1008	539+730	237645.223	3335760.588	237624.181	3335768.558	237666.266	3335752.618
1009	539+740	237648.944	3335769.869	237628.224	3335778.642	237669.665	3335761.096
1010	539+750	237653.020	3335779.000	237632.696	3335788.543	237673.432	3335769.416
1011	539+760	237657.443	3335787.968	237637.502	3335798.285	237677.469	3335777.607
1012	539+770	237662.208	3335796.759	237642.678	3335807.836	237681.821	3335785.636
1013	539+780	237667.307	3335805.361	237648.218	3335817.180	237686.478	3335793.491
1014	539+790	237672.734	3335813.760	237654.084	3335826.323	237691.406	3335801.180
1015	539+800	237678.479	3335821.944	237660.354	3335835.195	237696.681	3335808.636
1016	539+810	237684.534	3335829.901	237666.933	3335843.839	237702.211	3335815.903
1017	539+820	237690.892	3335837.619	237673.839	3335852.224	237708.017	3335822.952
1018	539+830	237697.541	3335845.088	237681.062	3335860.337	237714.090	3335829.773
1019	539+840	237704.473	3335852.295	237688.592	3335868.167	237720.420	3335836.355
1020	539+850	237711.676	3335859.230	237696.418	3335875.701	237726.999	3335842.689
1021	539+860	237719.141	3335865.883	237704.528	3335882.928	237733.817	3335848.765
1022	539+870	237726.856	3335872.244	237712.909	3335889.839	237740.863	3335854.574
1023	539+880	237734.810	3335878.304	237721.550	3335896.422	237748.127	3335860.108
1024	539+890	237742.991	3335884.053	237730.438	3335902.668	237755.599	3335865.359
1025	539+900	237751.388	3335889.484	237739.559	3335908.567	237763.267	3335870.319
1026	539+910	237759.987	3335894.587	237748.900	3335914.112	237771.120	3335874.980
1027	539+920	237768.775	3335899.356	237758.448	3335919.293	237779.147	3335879.335
1028	539+930	237777.741	3335903.784	237768.188	3335924.103	237787.335	3335883.379
1029	539+940	237786.870	3335907.864	237778.105	3335928.535	237795.672	3335887.105
1030	539+950	237796.150	3335911.590	237788.186	3335932.582	237804.147	3335890.508
1031	539+960	237805.565	3335914.956	237798.400	3335936.284	237812.732	3335893.624

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.161**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
1032	539+970	237815.101	3335917.966	237808.719	3335939.498	237821.507	3335896.353
1033	539+980	237824.733	3335920.654	237819.023	3335942.380	237830.460	3335898.858
1034	539+990	237834.438	3335923.064	237829.301	3335944.939	237839.588	3335901.131
1035	540+000	237844.197	3335925.241	237839.532	3335947.228	237848.873	3335903.208
1036	540+010	237853.997	3335927.231	237849.699	3335949.298	237858.302	3335905.129
1037	540+020	237863.825	3335929.080	237859.789	3335951.203	237867.865	3335906.934
1038	540+030	237873.669	3335930.836	237869.790	3335952.993	237877.551	3335908.667
1039	540+040	237883.522	3335932.545	237879.693	3335954.717	237887.351	3335910.373
1040	540+050	237893.376	3335934.247	237889.547	3335956.418	237897.205	3335912.075
1041	540+060	237903.231	3335935.948	237899.402	3335958.120	237907.060	3335913.777
1042	540+070	237913.085	3335937.650	237909.256	3335959.822	237916.914	3335915.478
1043	540+080	237922.939	3335939.352	237919.110	3335961.524	237926.768	3335917.180
1044	540+090	237932.793	3335941.054	237928.964	3335963.226	237936.622	3335918.882
1045	540+100	237942.647	3335942.755	237938.818	3335964.927	237946.476	3335920.584
1046	540+110	237952.501	3335944.457	237948.672	3335966.629	237956.330	3335922.285
1047	540+120	237962.355	3335946.159	237958.526	3335968.331	237966.184	3335923.987
1048	540+130	237972.210	3335947.861	237968.381	3335970.033	237976.038	3335925.689
1049	540+140	237982.064	3335949.563	237978.235	3335971.734	237985.893	3335927.391
1050	540+150	237991.918	3335951.264	237988.089	3335973.436	237995.747	3335929.092
1051	540+160	238001.772	3335952.966	237997.943	3335975.138	238005.601	3335930.794
1052	540+170	238011.626	3335954.668	238007.797	3335976.840	238015.455	3335932.496
1053	540+180	238021.480	3335956.370	238017.651	3335978.541	238025.309	3335934.198
1054	540+190	238031.334	3335958.071	238027.505	3335980.243	238035.163	3335935.900
1055	540+200	238041.188	3335959.773	238037.360	3335981.945	238045.017	3335937.601
1056	540+210	238051.043	3335961.475	238047.214	3335983.647	238054.872	3335939.303
1057	540+220	238060.897	3335963.177	238057.068	3335985.348	238064.726	3335941.005
1058	540+230	238070.751	3335964.878	238066.922	3335987.050	238074.580	3335942.707
1059	540+240	238080.605	3335966.580	238076.776	3335988.752	238084.434	3335944.408
1060	540+250	238090.459	3335968.282	238086.630	3335990.454	238094.288	3335946.110
1061	540+260	238100.313	3335969.984	238096.484	3335992.155	238104.142	3335947.812
1062	540+270	238110.167	3335971.685	238106.338	3335993.857	238113.996	3335949.514
1063	540+280	238120.022	3335973.387	238116.193	3335995.559	238123.851	3335951.215
1064	540+290	238129.876	3335975.089	238126.047	3335997.261	238133.705	3335952.917
1065	540+300	238139.730	3335976.791	238135.901	3335998.962	238143.559	3335954.619
1066	540+310	238149.584	3335978.492	238145.755	3336000.664	238153.413	3335956.321
1067	540+320	238159.438	3335980.194	238155.609	3336002.366	238163.267	3335958.022
1068	540+330	238169.292	3335981.896	238165.463	3336004.068	238173.121	3335959.724
1069	540+340	238179.146	3335983.598	238175.317	3336005.770	238182.975	3335961.426
1070	540+350	238189.001	3335985.299	238185.172	3336007.471	238192.830	3335963.128
1071	540+360	238198.855	3335987.001	238195.026	3336009.173	238202.684	3335964.829
1072	540+370	238208.709	3335988.703	238204.880	3336010.875	238212.538	3335966.531
1073	540+380	238218.563	3335990.405	238214.734	3336012.577	238222.392	3335968.233
1074	540+390	238228.417	3335992.107	238224.588	3336014.278	238232.246	3335969.935
1075	540+400	238238.271	3335993.808	238234.442	3336015.980	238242.100	3335971.636
1076	540+410	238248.125	3335995.510	238244.296	3336017.682	238251.954	3335973.338

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.162**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
1077	540+420	238257.980	3335997.212	238254.151	3336019.384	238261.808	3335975.040
1078	540+430	238267.834	3335998.914	238264.005	3336021.085	238271.663	3335976.742
1079	540+440	238277.688	3336000.615	238273.859	3336022.787	238281.517	3335978.443
1080	540+450	238287.542	3336002.317	238283.713	3336024.489	238291.371	3335980.145
1081	540+460	238297.396	3336004.019	238293.567	3336026.191	238301.225	3335981.847
1082	540+470	238307.250	3336005.721	238303.421	3336027.892	238311.079	3335983.549
1083	540+480	238317.104	3336007.422	238313.275	3336029.594	238320.933	3335985.251
1084	540+490	238326.958	3336009.124	238323.130	3336031.296	238330.787	3335986.952
1085	540+500	238336.813	3336010.826	238332.984	3336032.998	238340.642	3335988.654
1086	540+510	238346.667	3336012.528	238342.838	3336034.699	238350.496	3335990.356
1087	540+520	238356.521	3336014.229	238352.692	3336036.401	238360.350	3335992.058
1088	540+530	238366.375	3336015.931	238362.546	3336038.103	238370.204	3335993.759
1089	540+540	238376.229	3336017.633	238372.400	3336039.805	238380.058	3335995.461
1090	540+550	238386.083	3336019.335	238382.254	3336041.506	238389.912	3335997.163
1091	540+560	238395.937	3336021.036	238392.108	3336043.208	238399.766	3335998.865
1092	540+570	238405.792	3336022.737	238401.974	3336044.909	238409.610	3336000.562
1093	540+580	238415.649	3336024.422	238411.893	3336046.602	238419.406	3336002.233
1094	540+590	238425.512	3336026.068	238421.874	3336048.270	238429.151	3336003.862
1095	540+600	238435.387	3336027.649	238431.923	3336049.869	238438.854	3336005.406
1096	540+610	238445.275	3336029.140	238442.041	3336051.392	238448.513	3336006.859
1097	540+620	238455.179	3336030.517	238452.231	3336052.805	238458.133	3336008.194
1098	540+630	238465.102	3336031.754	238462.496	3336054.082	238467.714	3336009.386
1099	540+640	238475.045	3336032.828	238472.836	3336055.195	238477.258	3336010.413
1100	540+650	238485.005	3336033.711	238483.251	3336056.116	238486.763	3336011.253
1101	540+660	238494.983	3336034.380	238493.740	3336056.825	238496.228	3336011.894
1102	540+670	238504.973	3336034.810	238504.288	3336057.268	238505.660	3336012.289
1103	540+680	238514.971	3336034.990	238514.848	3336057.459	238515.095	3336012.459
1104	540+690	238524.971	3336034.920	238525.409	3336057.385	238524.532	3336012.393
1105	540+700	238534.965	3336034.600	238535.965	3336057.047	238533.963	3336012.092
1106	540+710	238544.949	3336034.031	238546.509	3336056.445	238543.384	3336011.554
1107	540+720	238554.915	3336033.212	238557.035	3336055.580	238552.789	3336010.781
1108	540+730	238564.858	3336032.144	238567.536	3336054.453	238562.172	3336009.773
1109	540+740	238574.770	3336030.828	238578.006	3336053.063	238571.526	3336008.532
1110	540+750	238584.647	3336029.264	238588.437	3336051.411	238580.847	3336007.056
1111	540+760	238594.482	3336027.455	238598.824	3336049.500	238590.127	3336005.348
1112	540+770	238604.268	3336025.399	238609.160	3336047.329	238599.362	3336003.409
1113	540+780	238614.000	3336023.100	238619.439	3336044.901	238608.546	3336001.239
1114	540+790	238623.671	3336020.559	238629.653	3336042.217	238617.673	3335998.841
1115	540+800	238633.276	3336017.776	238639.798	3336039.278	238626.736	3335996.215
1116	540+810	238642.808	3336014.754	238649.865	3336036.086	238635.732	3335993.363
1117	540+820	238652.262	3336011.495	238659.850	3336032.644	238644.653	3335990.288
1118	540+830	238661.631	3336008.001	238669.746	3336028.953	238653.494	3335986.990
1119	540+840	238670.910	3336004.273	238679.546	3336025.016	238662.251	3335983.473
1120	540+850	238680.093	3336000.315	238689.245	3336020.835	238670.916	3335979.737
1121	540+860	238689.174	3335996.128	238698.836	3336016.414	238679.486	3335975.786

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.163**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
1122	540+870	238698.148	3335991.716	238708.314	3336011.753	238687.954	3335971.622
1123	540+880	238707.008	3335987.080	238717.672	3336006.858	238696.315	3335967.248
1124	540+890	238715.750	3335982.225	238726.905	3336001.730	238704.565	3335962.666
1125	540+900	238724.368	3335977.152	238736.007	3335996.372	238712.697	3335957.880
1126	540+910	238732.856	3335971.866	238744.972	3335990.789	238720.707	3335952.891
1127	540+920	238741.210	3335966.370	238753.794	3335984.984	238728.590	3335947.704
1128	540+930	238749.423	3335960.666	238762.469	3335978.959	238736.341	3335942.321
1129	540+940	238757.492	3335954.758	238770.991	3335972.720	238743.955	3335936.747
1130	540+950	238765.410	3335948.651	238779.244	3335966.357	238751.538	3335930.896
1131	540+960	238773.173	3335942.348	238782.773	3335953.874	238763.573	3335930.822
1132	540+970	238780.776	3335935.853	238790.661	3335947.135	238770.890	3335924.570
1133	540+980	238788.214	3335929.169	238798.378	3335940.201	238778.050	3335918.137
1134	540+990	238795.483	3335922.302	238805.920	3335933.076	238785.046	3335911.528
1135	541+000	238802.578	3335915.255	238813.280	3335925.765	238791.875	3335904.745
1136	541+010	238809.494	3335908.033	238820.456	3335918.272	238798.532	3335897.794
1137	541+020	238816.228	3335900.641	238827.443	3335910.603	238805.013	3335890.679
1138	541+030	238822.775	3335893.082	238834.235	3335902.761	238811.315	3335883.404
1139	541+040	238829.131	3335885.362	238840.829	3335894.752	238817.433	3335875.973
1140	541+050	238835.298	3335877.490	238847.211	3335886.605	238823.384	3335868.376
1141	541+060	238841.289	3335869.484	238853.390	3335878.349	238829.188	3335860.619
1142	541+070	238847.123	3335861.362	238859.384	3335870.004	238834.862	3335852.721
1143	541+080	238852.817	3335853.142	238865.213	3335861.589	238840.422	3335844.695
1144	541+090	238858.392	3335844.840	238870.899	3335853.122	238845.885	3335836.559
1145	541+100	238863.866	3335836.472	238876.461	3335844.618	238851.271	3335828.326
1146	541+110	238869.260	3335828.051	238881.923	3335836.092	238856.597	3335820.010
1147	541+120	238874.595	3335819.593	238887.303	3335827.561	238861.886	3335811.625
1148	541+130	238879.891	3335811.110	238892.626	3335819.036	238867.156	3335803.185
1149	541+140	238885.169	3335802.617	238897.911	3335810.532	238872.428	3335794.702
1150	541+150	238890.446	3335794.123	238903.188	3335802.038	238877.704	3335786.208
1151	541+160	238895.723	3335785.628	238908.464	3335793.543	238882.981	3335777.713
1152	541+170	238900.999	3335777.134	238913.741	3335785.049	238888.258	3335769.219
1153	541+180	238906.276	3335768.639	238919.018	3335776.554	238893.535	3335760.724
1154	541+190	238911.553	3335760.145	238924.293	3335768.063	238898.813	3335752.227
1155	541+200	238916.840	3335751.657	238929.562	3335759.604	238904.118	3335743.709
1156	541+210	238922.157	3335743.187	238934.840	3335751.195	238909.473	3335735.179
1157	541+220	238927.524	3335734.750	238940.149	3335742.850	238914.900	3335726.649
1158	541+230	238932.964	3335726.359	238945.509	3335734.583	238920.419	3335718.135
1159	541+240	238938.496	3335718.029	238950.939	3335726.406	238926.054	3335709.651
1160	541+250	238944.141	3335709.774	238956.458	3335718.335	238931.823	3335701.213
1161	541+260	238949.917	3335701.611	238962.084	3335710.384	238937.749	3335692.839
1162	541+270	238955.843	3335693.557	238967.835	3335702.569	238943.852	3335684.545
1163	541+280	238961.938	3335685.629	238973.726	3335694.906	238950.151	3335676.352
1164	541+290	238968.218	3335677.847	238979.774	3335687.411	238956.662	3335668.283
1165	541+300	238974.689	3335670.223	238986.002	3335680.073	238963.376	3335660.374
1166	541+310	238981.349	3335662.764	238992.413	3335672.894	238970.286	3335652.635

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.164**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
1167	541+320	238988.193	3335655.474	238999.000	3335665.877	238977.387	3335645.071
1168	541+330	238995.218	3335648.357	239005.761	3335659.027	238984.674	3335637.687
1169	541+340	239002.418	3335641.418	239012.691	3335652.348	238992.145	3335630.488
1170	541+350	239009.789	3335634.661	239019.786	3335645.844	238999.792	3335623.477
1171	541+360	239017.327	3335628.090	239027.042	3335639.520	239007.613	3335616.660
1172	541+370	239025.027	3335621.710	239034.453	3335633.379	239015.602	3335610.041
1173	541+380	239032.884	3335615.524	239042.015	3335627.425	239023.753	3335603.623
1174	541+390	239040.893	3335609.537	239049.724	3335621.662	239032.063	3335597.411
1175	541+400	239049.050	3335603.751	239057.574	3335616.094	239040.525	3335591.409
1176	541+410	239057.348	3335598.172	239065.562	3335610.724	239049.134	3335585.620
1177	541+420	239065.783	3335592.801	239073.680	3335605.554	239057.886	3335580.048
1178	541+430	239074.350	3335587.643	239081.926	3335600.590	239066.774	3335574.697
1179	541+440	239083.043	3335582.701	239090.293	3335595.833	239075.793	3335569.569
1180	541+450	239091.857	3335577.978	239098.777	3335591.287	239084.938	3335564.669
1181	541+460	239100.786	3335573.477	239107.371	3335586.954	239094.202	3335559.999
1182	541+470	239109.825	3335569.200	239116.071	3335582.838	239103.580	3335555.561
1183	541+480	239118.968	3335565.150	239124.871	3335578.940	239113.066	3335551.360
1184	541+490	239128.210	3335561.330	239133.766	3335575.264	239122.654	3335547.397
1185	541+500	239137.544	3335557.743	239142.750	3335571.811	239132.338	3335543.675
1186	541+510	239146.965	3335554.390	239151.818	3335568.583	239142.112	3335540.196
1187	541+520	239156.466	3335551.273	239160.963	3335565.584	239151.970	3335536.963
1188	541+530	239166.043	3335548.395	239170.180	3335562.814	239161.906	3335533.977
1189	541+540	239175.689	3335545.757	239179.464	3335560.275	239171.913	3335531.240
1190	541+550	239185.397	3335543.362	239188.809	3335557.969	239181.985	3335528.754
1191	541+560	239195.162	3335541.209	239198.208	3335555.897	239192.117	3335526.521
1192	541+570	239204.979	3335539.301	239207.656	3335554.061	239202.301	3335524.542
1193	541+580	239214.839	3335537.640	239217.147	3335552.462	239212.532	3335522.818
1194	541+590	239224.738	3335536.225	239226.675	3335551.100	239222.802	3335521.350
1195	541+600	239234.670	3335535.058	239236.401	3335551.575	239233.106	3335520.140
1196	541+610	239244.627	3335534.140	239246.870	3335562.314	239242.854	3335511.869
1197	541+620	239254.605	3335533.471	239256.849	3335574.659	239252.568	3335496.096
1198	541+630	239264.596	3335533.052	239266.027	3335581.659	239263.227	3335486.594
1199	541+640	239274.594	3335532.883	239274.830	3335586.027	239274.362	3335480.653
1200	541+650	239284.593	3335532.963	239283.382	3335591.872	239285.735	3335477.449
1201	541+660	239294.588	3335533.294	239291.163	3335608.423	239297.344	3335472.833
1202	541+670	239304.571	3335533.874	239299.366	3335607.520	239309.798	3335459.905
1203	541+680	239314.536	3335534.704	239308.857	3335593.951	239321.280	3335464.343
1204	541+690	239324.477	3335535.782	239318.534	3335584.839	239330.200	3335488.546
1205	541+700	239334.389	3335537.109	239328.205	3335579.287	239340.053	3335498.465
1206	541+710	239344.264	3335538.683	239339.012	3335569.175	239348.596	3335513.528
1207	541+720	239354.096	3335540.503	239350.666	3335557.820	239357.011	3335525.788
1208	541+730	239363.880	3335542.568	239360.599	3335557.205	239367.162	3335527.931
1209	541+740	239373.610	3335544.878	239369.963	3335559.428	239377.256	3335530.328
1210	541+750	239383.278	3335547.430	239379.269	3335561.884	239387.288	3335532.975
1211	541+760	239392.880	3335550.223	239388.511	3335564.573	239397.249	3335535.873

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.165**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
1212	541+770	239402.409	3335553.255	239397.683	3335567.491	239407.136	3335539.018
1213	541+780	239411.859	3335556.524	239406.779	3335570.637	239416.940	3335542.410
1214	541+790	239421.225	3335560.028	239415.793	3335574.011	239426.657	3335546.046
1215	541+800	239430.500	3335563.766	239424.720	3335577.608	239436.280	3335549.924
1216	541+810	239439.679	3335567.734	239433.555	3335581.427	239445.803	3335554.041
1217	541+820	239448.755	3335571.930	239442.291	3335585.466	239455.220	3335558.395
1218	541+830	239457.724	3335576.352	239450.923	3335589.722	239464.525	3335562.982
1219	541+840	239466.580	3335580.997	239459.447	3335594.193	239473.713	3335567.801
1220	541+850	239475.317	3335585.862	239467.856	3335598.875	239482.777	3335572.848
1221	541+860	239483.929	3335590.943	239476.145	3335603.766	239491.712	3335578.120
1222	541+870	239492.412	3335596.239	239484.310	3335608.863	239500.513	3335583.614
1223	541+880	239500.759	3335601.744	239492.344	3335614.162	239509.174	3335589.326
1224	541+890	239508.967	3335607.457	239500.244	3335619.660	239517.689	3335595.253
1225	541+900	239517.029	3335613.373	239508.004	3335625.354	239526.053	3335601.391
1226	541+910	239524.940	3335619.488	239515.619	3335631.241	239534.262	3335607.736
1227	541+920	239532.696	3335625.800	239523.084	3335637.316	239542.309	3335614.284
1228	541+930	239540.293	3335632.303	239530.395	3335643.575	239550.190	3335621.032
1229	541+940	239547.726	3335638.992	239537.560	3335650.023	239557.891	3335627.962
1230	541+950	239555.004	3335645.849	239544.604	3335656.658	239565.405	3335635.040
1231	541+960	239562.142	3335652.853	239551.538	3335663.462	239572.747	3335642.244
1232	541+970	239569.154	3335659.982	239558.376	3335670.414	239579.933	3335649.550
1233	541+980	239576.057	3335667.218	239565.133	3335677.497	239586.981	3335656.938
1234	541+990	239582.866	3335674.541	239571.824	3335684.694	239593.908	3335664.389
1235	542+000	239589.599	3335681.934	239578.466	3335691.987	239600.733	3335671.882
1236	542+010	239596.275	3335689.380	239585.076	3335699.359	239607.474	3335679.401
1237	542+020	239602.911	3335696.861	239591.671	3335706.795	239614.150	3335686.927
1238	542+030	239609.526	3335704.360	239598.271	3335714.277	239620.781	3335694.444
1239	542+040	239616.136	3335711.864	239604.881	3335721.780	239627.391	3335701.948
1240	542+050	239622.753	3335719.362	239611.520	3335729.303	239633.986	3335709.421
1241	542+060	239629.401	3335726.832	239618.233	3335736.845	239640.570	3335716.818
1242	542+070	239636.114	3335734.244	239625.054	3335744.377	239647.174	3335724.111
1243	542+080	239642.922	3335741.568	239632.015	3335751.866	239653.829	3335731.270
1244	542+090	239649.855	3335748.775	239639.149	3335759.282	239660.560	3335738.268
1245	542+100	239656.940	3335755.832	239646.485	3335766.588	239667.395	3335745.075
1246	542+110	239664.204	3335762.703	239654.053	3335773.747	239674.356	3335751.660
1247	542+120	239671.671	3335769.354	239661.879	3335780.718	239681.463	3335757.990
1248	542+130	239679.362	3335775.745	239669.990	3335787.458	239688.734	3335764.033
1249	542+140	239687.288	3335781.841	239678.373	3335793.906	239696.203	3335769.777
1250	542+150	239695.443	3335787.628	239686.999	3335800.026	239703.887	3335775.230
1251	542+160	239703.814	3335793.097	239695.853	3335805.811	239711.775	3335780.383
1252	542+170	239712.390	3335798.240	239704.923	3335811.250	239719.856	3335785.229
1253	542+180	239721.156	3335803.049	239714.196	3335816.337	239728.117	3335789.761
1254	542+190	239730.102	3335807.518	239723.657	3335821.064	239736.546	3335793.972
1255	542+200	239739.211	3335811.642	239733.277	3335825.419	239745.145	3335797.865
1256	542+210	239748.461	3335815.441	239742.988	3335829.408	239753.933	3335801.474

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.166**

S. No.	Design Chainage (Km)	CENTER LINE		LHS ROW		LHS ROW	
		EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
1257	542+220	239757.825	3335818.951	239752.759	3335833.070	239762.890	3335804.831
1258	542+230	239767.279	3335822.207	239762.564	3335836.447	239771.994	3335807.967
1259	542+240	239776.805	3335825.250	239772.382	3335839.583	239781.228	3335810.917
1260	542+250	239786.385	3335828.118	239782.194	3335842.520	239790.575	3335813.715
1261	542+260	239796.004	3335830.851	239791.985	3335845.302	239800.023	3335816.399
1262	542+270	239805.649	3335833.490	239801.741	3335847.971	239809.558	3335819.008
1263	542+280	239815.309	3335836.076	239811.449	3335850.570	239819.169	3335821.581
1264	542+290	239824.973	3335838.647	239821.115	3335853.143	239828.830	3335824.152
1265	542+300	239834.636	3335841.219	239830.779	3335855.715	239838.494	3335826.724
1266	542+310	239844.300	3335843.791	239840.443	3335858.286	239848.158	3335829.295
1267	542+320	239853.964	3335846.363	239850.106	3335860.858	239857.821	3335831.867
1268	542+330	239863.627	3335848.934	239859.770	3335863.430	239867.485	3335834.439
1269	542+340	239873.291	3335851.506	239869.434	3335866.001	239877.149	3335837.011
1270	542+350	239882.955	3335854.078	239879.097	3335868.573	239886.812	3335839.582
1271	542+360	239892.618	3335856.649	239888.761	3335871.145	239896.476	3335842.154
1272	542+370	239902.282	3335859.221	239898.425	3335873.717	239906.140	3335844.726
1273	542+380	239911.946	3335861.793	239908.088	3335876.288	239915.803	3335847.297
1274	542+390	239921.609	3335864.364	239917.752	3335878.860	239925.467	3335849.869
1275	542+400	239931.273	3335866.936	239927.416	3335881.432	239935.131	3335852.441
1276	542+410	239940.937	3335869.508	239937.079	3335884.003	239944.794	3335855.012
<b>APPROACH ROAD</b>							
1	542+420	239950.602	3335872.077	239946.806	3335886.582	239954.403	3335857.560
2	542+430	239960.390	3335874.087	239958.662	3335888.956	239962.125	3335859.154
3	542+440	239970.335	3335873.714	239973.602	3335888.283	239967.037	3335859.010
4	542+450	239979.402	3335869.658	239988.121	3335881.858	239970.658	3335857.421
5	542+460	239986.461	3335862.625	239998.330	3335871.789	239974.559	3335853.434
6	542+470	239992.059	3335854.344	240004.731	3335862.370	239979.388	3335846.317
7	542+480	239997.410	3335845.896	240010.082	3335853.922	239984.738	3335837.869
8	542+490	240002.761	3335837.448	240015.433	3335845.474	239990.089	3335829.421
9	542+500	240008.112	3335829.000	240020.784	3335837.026	239995.440	3335820.973
10	542+510	240013.463	3335820.552	240026.135	3335828.578	240000.791	3335812.525
11	542+520	240018.814	3335812.104	240031.486	3335820.130	240006.142	3335804.077
12	542+530	240024.165	3335803.656	240036.837	3335811.682	240011.493	3335795.630
13	542+540	240029.516	3335795.208	240042.188	3335803.234	240016.844	3335787.182
14	542+550	240034.867	3335786.760	240047.539	3335794.786	240022.195	3335778.734
15	542+560	240040.218	3335778.312	240052.889	3335786.338	240027.546	3335770.286
16	542+570	240045.575	3335769.868	240058.230	3335777.965	240032.959	3335761.796
17	542+580	240051.084	3335761.523	240063.489	3335770.070	240038.785	3335753.049
18	542+590	240057.009	3335753.470	240068.762	3335762.796	240045.258	3335744.145
19	542+600	240063.582	3335745.939	240074.391	3335756.357	240052.786	3335735.534
20	542+610	240070.870	3335739.097	240080.585	3335750.543	240061.167	3335727.666
21	542+620	240078.804	3335733.018	240087.328	3335745.376	240070.291	3335720.675
22	542+630	240087.304	3335727.758	240094.584	3335740.891	240080.038	3335714.650
23	542+640	240096.227	3335723.248	240102.581	3335736.909	240089.930	3335709.707
24	542+650	240105.383	3335719.227	240111.200	3335733.071	240099.578	3335705.414

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**A.167**

**Annex - III**

*(Schedule-A)*

**Alignment Plans**

The alignment of the Project Highway shall be modified in the following sections as per the alignment plan indicated below:

- i. The alignment of the Project Highway is enclosed in the alignment plan as a part of Drawings (Plan and profile). Finished road level indicated in the alignment plan shall be followed by the contractor as minimum FRL. In any case, the finished road level of the project highway shall not be less than those indicated in the alignment plan. However, the contractor shall improve/upgrade the Road profile as indicated in Annex-III based on site/design requirement.
- ii. Traffic Signage plan of the Project Highway showing numbers & location of traffic signs is enclosed. The contractor shall, however, improve/upgrade upon the traffic signage plan as indicated in Annex-III based on site/design requirement as per IRC: SP: 84-2019 & IRC: 67-2015.

The following drawings are enclosed in digital form.

- a. Alignment Plan & Longitudinal Profile
- b. GAD of Structures
- c. Utility shifting plan
- d. Traffic signage plan.
- e. Pavement marking Plan

**Annex - IV***(Schedule-A)***Statutory Clearances**

S. no.	Statutory Obligation	Status
1	Environmental clearance	Environmental clearance is not required
2	Forest clearance	The permission/clearances by forest department shall be obtained the proposal is with DFO for consideration in PSC-II
3	Wildlife clearance	The GADs of EUP have been vetted by Wildlife Institute of India (WII). Formal NOC for 2 no of Elephant Underpasses (EUPs) have been applied to Wildlife Warden Forest
4	CRZ Clearance	Not Applicable
5	ROB GAD approval	ROB GAD has been recommended by RVNL to Sr DEN-I Moradabad. Approval of ROB GAD is awaited from Railways.

## **SCHEDULE - B**

(See Clause 2.1)

### **DEVELOPMENT OF THE PROJECT HIGHWAY**

#### **1. Development of the Project**

Development of the Project shall include the design and construction of the Project as described in this **Schedule-B** and in **Schedule-C**.

#### **2. Four-Laning with paved shoulders**

2. 4 laning of Rishikesh Bypass from Design Chainage km 529+750 (Near Teenpani Flyover on NH-7) to Design Chainage km 542+420 (Near Khrasrote Bridge), passing through Khairi Kalan, Garhi Maychak and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km). in EPC mode as described in Annex-I of this Schedule-B and Annex-I of Schedule-C.

#### **1. Specifications and Standards**

The Project Highway shall be designed and constructed in conformity with the Specifications and Standards specified in Schedule-D.

**Annex - I****(Schedule-B)****Description of the Project****1. Development of the Project Highway**

The Project Highway shall generally follow the horizontal alignment shown in the plan specified in Annex-III of Schedule-A, unless otherwise specified by the Authority. Notwithstanding anything to the contrary contained in this Agreement or IRC: SP: 84, the proposed plan & profile, locations of different structures/drains/service & slip road/RE walls, chainages of different structures/ drains/ service & slip road/RE walls, length of different structures/drains/service & slip road/RE walls etc. of the project highway as indicated in the Schedule A, Schedule B, Schedule C and their Annexes shall be treated as minimum requirement. Based on site/design requirement, the Contractor shall finalize their Detailed Designs (Development Stage) including plan & profile of the project highway and submit the same to Authority & its Engineer for its Consent/Approval and Safety Audit by Safety Auditor, before the start of the execution of project. The designs so approved shall not be in contradiction with the scope of the project. For avoidance of doubt, the provisions mentioned in schedule B & C cannot be changed, only the design of the components is to be submitted for consent/ approval.

*The Contractor shall deploy at its own Cost and Expenses, the Grading /Paving/Compaction Equipment fitted with System of **Automated & Intelligent Machine Construction (AI-MC)** for finishing of all Grades including Embankment, Subgrade, GSB, WMM. The System of **Automated & Intelligent Machine-aided Construction (AI-MC)** used by the Contractor shall be capable of delivering accuracy as per the applicable IRC specification. During the Construction Period, the Contractor shall furnish all the Physical Progress Data (All desired type of Surface Grading Data, Compaction and temperature Data etc.) obtained through system of **Automated & Intelligent Machine-aided Construction (AI-MC)/CMS** to Authority for monitoring of construction and daily Basis. These Digital Data and desired output shall be made available at the Location (Server/Cloud) finalized by Authority.*

**1.1. Width of Carriageway**

1.1.1. Four lane with paved shoulders shall be undertaken. The paved carriageway shall be 18.0 metre for four laning (including paved shoulder and kerb shyness/edge strip). The paved carriageway width shall be as per chainage-wise typical cross-section schedule provided in section 2.10 of Schedule-B.

Four-Laning with paved shoulders shall be undertaken. The paved carriageway width shall be adjusted to fit into appropriate plans and cross-sections developed in accordance with TCS enclosed.

1.1.2. In built-up sections/areas the width of paved carriageway shall be 20.2/27.2 metre for four/six laning (including paved shoulder and kerb shyness/edge strip). – **Not applicable.**

- 1.1.3. Except as otherwise provided in this Agreement, the width shall be adjusted to fit into appropriate plans and cross sections developed in accordance with TCS enclosed.
- 1.1.4. The entire cross-sectional elements shall be accommodated in the available/proposed ROW. If required, suitable retaining structures shall be provided to accommodate the highway cross section within the available/ proposed ROW. The details of such sections are mentioned in this Schedule-B. In case of any other section not included in Schedule-B, where retaining structures are to be provided, shall constitute a Change of Scope.
- 1.1.5. In addition to the width of paved carriageway mentioned in above clauses, additional lanes shall be provided as acceleration/deceleration lane and taper to the required length at entry/exit locations as per manual.

## 1.2. Width of Median

- 1.2.1. The width of median including kerb shyness shall be 2.50 metre for flush median throughout the project length.
- 1.2.2. In case of depressed median, a minimum of 0.6 metre width adjacent to carriageway in either direction shall be paved. In case of depressed/ flushed median, the metal beam (thrie beam) crash barrier shall be provided on either side of the median. In case width of median is more than 9 metre, no crash barrier is required to be provided in the median side. (clause No. 2.5 IRC:SP:84-2019/ IRC:SP:87-2019 & Circular RW/NH-29023/02/2019-S&R(P&B)).
- 1.2.3. 200 mm X 200 mm (100 mm thick ) suitable flushed kerb of CC M25 Mix shall be proposed provided in case of flush median to prevent spreading of soil on carriageway. The thrie beam metal crash barrier face to match with paving face for the carriageway on the median side.
- 1.2.4. A suitable anti-glare measures shall be proposed. (Clause No. 2.5.6 & 2. 5. 7 IRC: SP:84-2019).

## 2. Geometric Design and General Features

### 2.1. General:

The geometric design and general features of the Project Highway shall be in accordance with Section 2 of the manual. Intermediate Sight distance (Desirable Minimum Sight Distance) shall be followed for design of all vertical curves including structures as well as highways

### 2.2. Design Speed:

Project road is passing through plain terrain. General geometric features have been designed for ruling speed, of 100 kmph for main carriageway except for the locations given below table and of 40 kmph for Ramps and service Road in plain and rolling terrain.

S. no.	Design Chainage		Length (km.)	Design Speed
	From	To		
1	539+600	540+050	0.450	80 KMPH
2	542+050	542+290	0.240	80 KMPH
		<b>Total Length</b>	<b>0.690</b>	

### 2.3. Improvement of the existing road geometrics

2.3.1. The existing road geometrics shall be improved as per the codal provisions. In the sections, where improvement of the existing road geometrics to the prescribed standards is not possible, the existing road geometrics shall be improved to the extent possible within the given right of way and appropriate road signs, pavement markings and safety measures shall be provided.

S. no.	Stretch (Design Chainage) Km.		Type of Deficiency	Remarks
	From	To		
Nil				

2.3.2. Realignments: The existing road shall be improved to the standards as specified in the manual at the following locations:

S. no.	Existing Chainage (Km.)		Design Chainage (Km.)		Length (km.)
	From	To	From	To	
Nil					

2.3.3. Bypasses: The existing road shall be bypassed to the standards as specified in the manual at the following locations:

S. no.	Name of Bypass	Existing Chainage		Design Chainage		Length (km.)
		From	To	From	To	
1	Rishikesh	Near teenpani flyover	Kharasrote bridge	529+750 NH-7	542+420 NH-7	12.67

### 2.4. Right of Way

Details of the Right of Way along Project Highway are given in **Annex-II of Schedule-A**.

### 2.5. Type of shoulders

2.5.1. Width of shoulder in plain and rolling terrain shall be as follows:

S. no.	Type of section	Width of shoulder (m)			Extra earthen width (m)
		Paved	Earthen	Total	
1	Open country with isolated builtup area	1.50	1.0	2.50	1.0*
2	Approaches to grade separated structure /bridges/ROB/with full height RS wall/Retaining wall **	2.50	-	2.50	-
3	Approaches to bridges/ grade separated structure /ROB with free slope	1.50	1.0	2.50	1.0*

Note : \* - To have desirable offset for installation of W beam/thrie beam barrier along free slope stretches, placement of road signs on either side of the crash barrier and provision of kerb and channel drain for chut drain on high embankment slope as

per site requirement, additional 1.0m earthen width in all terrains shall be constructed.

\*\* - inclusive of 0.50m shyness width required for RCC crash barrier/parapet/drain side (in case of builtup area)

2.5.2.The Design Specification of paved shoulder shall conform to the requirements specified in paragraph 5.10 of the manual.

2.5.3.Paved shoulders and edge strip on the median side shall be of same specification and composition as of main carriageway.

2.5.4.The overlay on the main carriageway pavement and on the paved shoulders shall be uniform in thickness and composition. (Clause No. 5.10 IRC: SP:84-2019) – **Not applicable**

2.5.5.In Built-up sections, footpaths/fully paved shoulder shall be provided with width 1.5m/2.5m respectively.

2.5.6.In open country, paved shoulders of 1.5m width shall be provided.

2.5.7.The earthen shoulder width shall be 1 metre on either outer sides in open country or isolated built up area and approaches to bridges/grade separated structures/ROB with free slopes. To have desirable offset for installation of W-Beam/ Thrie Beam barrier along free slope stretches, placement of road signs on outer side of the crash barrier and provision of kerb and channel drain for chute drain on high embankment slope as per site requirement, additional 1.0m earthen width in all terrains shall be constructed. { Circular: Width of Shoulder (Paved & Earthen for National Highways- Dated: 4th June, 2024 } . It shall be provided with top 150 mm on earthen shoulder with well graded naturals and morrum gravel crust stones or combination thereof, confirming to Clause 401 of MoRTH specification.

2.5.8. The Design Specification of earthen shoulder shall conform to the requirements specified in paragraph 5.11 of the manual

For Service Road/Connecting Road/Cross Roads/Ramp, earthen shoulders shall be covered with 150mm thick compacted granular material. Design and specifications shall conform to the requirements specified in the manual

## 2.6. Lateral and vertical clearances at underpasses

2.6.1.In case of VUP/ LVUP/SVUP, the FRL of crossroad beneath the structure shall be kept 150 mm above the ground level/service road level/ FRL of crossroad along approaches (whichever is higher) to ensure that these VUP/LVUP/SVUP don't become water accumulation points.

2.6.2.The vertical and horizontal clearance at the underpasses shall be as per Clause 2.10.2 of IRC: SP: 84-2019.

Clear width of opening and Vertical clearances at following Structures shall be as per below table:.

A) Flyover/ Viaduct

S. No.	Design Chainage	Structure	Span arrangement No. x L (m)	Vertical clearance (m)	Remarks
1	534+790	Flyover/ Viaduct	76x40	5.5	
2	0+548 Ramp1	Flyover/ Viaduct	14 X 40 + 2 X 37	5.5	

**B) VUP**

S. No.	Design Chainage	Structure	Clear square Span No. x L (m)	Vertical clearance (m)	Remarks
			nil		

**C) LVUP**

S. No.	Design Chainage	Structure	Clear square Span No. x L (m)	Vertical clearance (m)	Remarks
			nil		

**D) SVUP**

S. No.	Design Chainage	Structure	Clear square Span No. x L (m)	Vertical clearance (m)	Remarks
1	0+137, ramp3	SVUP	1 X 7	4.0	
2	532+075	SVUP	1 X 7	4.0	

**E) Overpass**

S. No.	Design Chainage	Structure	Clear square Span No.xL(m)	Vertical clearance (m)	Remarks
1	542+010	Overpass	2 X 11.25	5.50	Length = 100m for local movement at herbal park.
2	542+070	Overpass	2 X 11.25	5.50	

**2.7. Lateral and vertical clearances at overpasses: - Nil**

2.7.1.Lateral and vertical clearances for overpasses shall be as per paragraph 2.11 of the Manual.

2.7.2.Lateral clearance: The width of the opening at the Overpasses shall be as specified in section 2.9 of this schedule B.

S. no.	Location Chainage (Km.)	Span/Opening (m)	Remarks

**2.8. Service roads/Slip roads/Connecting Roads: -**

2.8.1.Service/Slip Road: The height of embankment of service road shall confirm to clause 4.2.1 of IRC: SP: 84-2019.

2.8.2.The Service/Slip roads shall be constructed at the locations and for the lengths indicated below:

S. no.	Design Chainage (Km.)		Length (m.)		Paved carriageway width including shyness (m.)	Total length (m)	Remarks
	From	To	LHS	RHS			
1	529+750	529+790		220		220	
2	Service road at Ramp-1 0+390	1+525	1135		7.5	1135	Service road at Ramp 3
3	Service road at Ramp 3 0+000	0+380		380	7.5	380	Service road at Ramp 3
	<b>Sub Total</b>		<b>1135</b>	600		1735	

Note: Refer Drawing Volume for Plan for the above location.

2.8.3. The Parking bays shall be provided along service road (clause No. 2.12.2.1 IRC:SP:84-2019) at the following locations:

S. no.	Design Chainage (Km.) of Parking Bay		Remarks
	LHS Service Road	RHS Service Road	
- NIL -			

2.8.4. Slip Road: The height of embankment of slip road shall confirm to clause 4.2.1 of IRC: SP: 84-2019.

The slip roads shall be constructed at the locations and for the lengths indicated below:

S. no.	Design Chainage (Km.)		Length (m.)		Paved carriageway width including shyness (m.)	Total length (m)	Remarks
	From	To	LHS	RHS			
1	538+500	539+027	527	527	7.5	1054	TCS-5
2	539+103	539+110	7	7	7.5	14	
					<b>Total</b>	<b>1068</b>	

\* Excluding taper at applicable locations.

2.8.5. Separator Between Main Carriageway and Service/Slip Road (clause No. 2.15.1 IRC: SP: 84-2019 / IRC: SP: 87-2019). A separator between main carriageway and service/slip road shall be provided to prevent the pedestrians, local vehicles and animals entering the highway.

2.8.6. Connecting Road: Location wise details of connecting roads to be developed as follows:

S. no.	Design Chainage (Km.)		Length (m.)		Paved carriageway width including shyness (m.)	Total	Remarks
	From	To	LHS	RHS			

Note:

- i. Above length of the service/slip roads is minimum specified. The actual length of the service/slip/connecting roads shall be determined by the Contractor in accordance with

the approved plan & profile and design approved from the Authority Engineer. Any increase/decrease up to 5 percent length from the length specified in this Clause of Schedule-B shall not constitute a Change of Scope. Any additional length shall be dealt in Change of Scope.

- ii. The Acceleration, deceleration lane, right turning storage lane, entry/exit lanes shall be constructed in addition to length given in above table and shall be deemed to be part of the scope and no Change of Scope shall be considered for the same. (Clause No. 2 . 12.2 IRC: SP: 84-2019 / IRC: SP: 87-2019).
- iii. any structures falling within acceleration/ deceleration lane/ taper shall be constructed to the required width. This increase in width of structures shall not be treated as change of scope.

#### 2.9. Grade Separated Structures: (clause No. 3.4 IRC:SP:84-2019)

Grade separated structures shall be constructed as per paragraph 2.13 of the Manual. Proposed levels at structure locations as shown in plan & profile specified in Annex-III of schedule A are the minimum requirement and only for guidance and any increase in levels shall not constitute any change of scope. Entry/Exit arrangement from main carriageway shall be 50m before/after the start/end of approach road to grade separator i.e. start/end of valley curve (clause No.2.12.2.2 IRC: SP: 84-2019 / IRC: SP: 87-2019). RCC barrier shall start from start of valley curve and end after grade separator at end of valley curve.

The sub-structure shall be continued in the median portion with RCC barrier wherever superstructure has not been proposed in median portion. (Clause 7.1 (vii) IRC: SP:84-2019).

50m long MBCB Safety barriers on structure approaches shall be provided on all four faces of each structure. MBCB provided towards median side of each structures shall be joined on ends in semi-circular shape. (Clause No. 4.3.5 and 4.9, IRC 119 )

2.5m. wide footpaths for VUP and Flyovers and 1.5m for LVUP and SVUP shall be provided at grade intersection below structures for each direction of pedestrian movement.

The requisite particulars are given below:

##### 2.9.1. Flyover/Viaduct

S. no.	Design Chainage (Km.)	LHS Roadway width (m)	RHS Roadway width (m)	Superstructure provision in median	Span arrangement (m)	Minimum vertical clearance	Skew angle	Remarks
1	534+790	11.1	11.1	no	76x40	5.5	0	

##### 2.9.2. Vehicle Underpasses (VUP)

S. no.	Design Chainage (Km.)	LHS Roadway width (m)	RHS Roadway width (m)	Superstructure provision in median	Square clear Span arrangement (m)	Minimum vertical clearance	Skew angle degree	Remarks
				nil				

## 2.9.3. Light Vehicle Underpasses (LVUP)

S. no.	Design Chainage (Km.)	LHS Roadway width (m)	RHS Roadway width (m)	Superstructure provision in median	Square clear Span arrangement (m)	Minimum vertical clearance	Skew angle degree	Remarks
				nil				

## 2.9.4. Small Vehicle Underpasses (SVUP)

S. no.	Design Chainage (Km.)	LHS Roadway width (m)	RHS Roadway width (m)	Superstructure provision in median	Square clear Span arrangement (m)	Minimum vertical clearance	Skew angle	Remarks
1	532+075	10	10	1x7	7	4	0	
2	0+137 Ramp 3	10.1	yes	1x7	7	4	0	

## 2.9.5. Vehicle Overpass (VOP)

S. no.	Design Chainage (Km.)	LHS Roadway width (m)	RHS Roadway width (m)	Superstructure provision in median	Clear Span arrangement (m)	Minimum vertical clearance	Skew angle	Remarks
1	542+010*	10	10	-	2x11.25	5.5	0	Length = 100m for local movement at herbal park.
2	542+070	10	10		2x11.25	5.5	0	

Note - \*Approach of VOP from km. 541+760 to km. 541+960, length = 200m shall be provided with canopy.

## 2.9.6. Cattle and Pedestrian underpasses Cattle and pedestrian underpass shall be constructed as follows:

S. no.	Design Chainage (Km.)	LHS Roadway width (m)	RHS Roadway width (m)	Superstructure	Span arrangement (m)	Minimum vertical clearance	Skew angle	Remarks
				nil				

## 2.9.7. Interchanges (IC) (clause No. 3.4 IRC: SP: 84-2019)

Sr. no.	Design Chainage (Km.)	Name of Structure	Square CI to CI clear exp. Joint Span arrangement (m)	Total width (m)	Typical cross section	Skew Angle n deg
1	0+548 Ramp1	Viaduct	14x40+2x37	1x10.10	TCS-17	0

Note for clause 2.9:

- (i) The Grade Separated Structures shall be constructed using such construction material/methods/ technologies so as to ensure uninterrupted flow of traffic on crossroads. Diversion of traffic or restriction of paved width of crossroads shall not be constructed. The diversion road shall have paved width not less than the width of the existing crossroad, which shall be designed for a minimum 10 MSA as per IRC: SP: 84-2019 / IRC: SP: 87-2019. The diversion road shall be constructed and maintained in good condition to the satisfaction of Authority Engineer, during the construction of Structures. The cost of the diversion road shall be borne by Contractor.
- (ii) Special Vehicle loading as per IRC-6 is to be considered for design of all structures.
- (iii) In addition to above, in case of structure, damage caused to existing NH (if any) over which structure has been proposed shall be repaired and NH shall be restored to original condition to the satisfaction of the IE. There will be no COS in this regard.

## 2.10. Typical Cross Section (TCS) of the Project Highway

The Project Highway shall be constructed as Four lane configuration. Typical cross sections required to be developed in different sections of the Project Highway are given below Typical cross sections are given in **Annex II of Schedule B**.

### Typical Cross Section Schedule – Main Carriageway

S No	From	To	Length	TCS Type	Remarks
<b>A</b>	<b>Main carriageway</b>				
1	529+750	529+970	220	TCS-12	4 lane divided highway approach with LHS Ramp
2	529+970	530+130	160	TCS-11	4 lane divided highway with variable carriageway width
3	530+130	530+290	160	TCS-10	4 lane divided highway at grade separated deck level with variable deck width
4	530+290	530+530	240	TCS-7	4 lane divided highway at bridge deck level with footpath on both sides
5	530+530	530+580	50	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
6	530+580	530+730	150	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
7	530+730	530+960	230	TCS-3	4 lane divided highway without service road with flush median for Box cutting

S No	From	To	Length	TCS Type	Remarks
8	530+960	531+000	40	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
9	531+000	531+200	200	TCS-7	4 lane divided highway at bridge deck level with footpath on both sides
10	531+200	531+300	100	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
11	531+300	531+500	200	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
12	531+500	531+830	330	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
13	531+830	531+910	80	TCS-7	4 lane divided highway at bridge deck level with footpath on both sides
14	531+910	531+940	30	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
15	531+940	532+120	180	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
16	532+120	532+300	180	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
17	532+300	532+380	80	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
18	532+380	532+430	50	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
19	532+430	532+570	140	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
20	532+570	532+600	30	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
21	532+600	532+710	110	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
22	532+710	533+270	560	TCS-2	4 lane divided highway without service road with flush median for

S No	From	To	Length	TCS Type	Remarks
					embankment height greater than 3m
23	533+270	536+310	3040	TCS-7	4 lane divided highway at bridge deck level with footpath on both sides
24	536+310	536+610	300	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
25	536+610	537+030	420	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
26	537+030	537+610	580	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
27	537+610	537+660	50	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
28	537+660	537+770	110	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
29	537+770	538+500	730	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
30	538+500	539+000	500	TCS-5	4 lane divided highway approach with RE wall and slip lane on both sides
31	539+000	539+100	100	TCS-6	4 lane divided highway at grade separated deck level
32	539+100	539+430	330	TCS-8	4 lane divided highway at Minor bridge deck level with service road bridges and footpath
33	539+430	539+590	160	TCS-7	4 lane divided highway at bridge deck level with footpath on both sides
34	539+590	539+820	230	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
35	539+820	539+950	130	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
36	539+950	540+056	106	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
37	540+056	540+374	318	TCS-9	4 lane divided highway at ROB deck level

S No	From	To	Length	TCS Type	Remarks
38	540+374	540+470	96	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
39	540+470	540+560	90	TCS-3	4 lane divided highway without service road with flush median for Box cutting
40	540+560	540+640	80	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m
41	540+640	540+840	200	TCS-3	4 lane divided highway without service road with flush median for Box cutting
42	540+840	540+890	50	TCS-4	4 lane divided highway without service road with flush median for cut and fill
43	540+890	540+950	60	TCS-3	4 lane divided highway without service road with flush median for Box cutting
44	540+950	540+980	30	TCS-4	4 lane divided highway without service road with flush median for cut and fill
45	540+980	541+220	240	TCS-7	4 lane divided highway at bridge deck level with footpath on both sides
46	541+220	541+310	90	TCS-4	4 lane divided highway without service road with flush median for cut and fill
47	541+310	541+400	90	TCS-3	4 lane divided highway without service road with flush median for Box cutting
48	541+400	541+450	50	TCS-4	4 lane divided highway without service road with flush median for cut and fill
49	541+450	541+570	120	TCS-3	4 lane divided highway without service road with flush median for Box cutting
50	541+570	541+610	40	TCS-4	4 lane divided highway without service road with flush median for cut and fill
51	541+610	541+700	90	Roundabout	Roundabout
52	541+700	541+760	60	TCS-4	4 lane divided highway without service road with flush median for cut and fill
53	541+760	541+960	200	TCS-19	4 lane divided highway at Herbal Park underpass (Approach )
54	541+960	542+130	170	TCS-3	4 lane divided highway without service road with flush median for Box cutting
55	542+130	542+150	20	TCS-1	4 lane divided highway without service road with flush median for embankment height upto 3m

S No	From	To	Length	TCS Type	Remarks
56	542+150	542+170	20	TCS-2	4 lane divided highway without service road with flush median for embankment height greater than 3m
57	542+170	542+270	100	TCS-3	4 lane divided highway without service road with flush median for Box cutting
58	542+270	542+285	15	TCS-4	4 lane divided highway without service road with flush median for cut and fill
59	542+285	542+410	125	TCS-7	4 lane divided highway at bridge deck level with footpath on both sides
60	542+410	542+420	10	TCS-4	4 lane divided highway without service road with flush median for cut and fill
<b>Sub total</b>			<b>12670</b>		
<b>B</b>	<b>Approach road</b>				
61	542+420	542+465	45	TCS-13	Transition from 4 lane divided carriageway to two lane carriageway
62	542+465	542+530	65	TCS-14	Variable carriageway width
63	542+530	542+664	134	TCS-15	2 lane carriageway width
<b>Sub Total</b>			<b>244</b>		

#### Typical Cross Section Schedule – Loop/Ramps at Interchanges

Interchange Location	Ramp/ Loop No.	Description	Chainage		Length (m)	TCS Type
			Start	End		
Trumpet Interchange at Design.Ch. 529+750	Ramp-1	2 lane Approach ramp with RE wall	529+970/0+000 Ramp-1	529+750/0+230 Ramp-1	230	TCS-12
	Ramp-1	Viaduct	0+230 ramp-1	0+864 ramp-1	634	TCS-17
	Ramp-1	2 lane Ramp with RE wall	0+864 ramp-1	1+270 ramp-1	406	TCS-16
	Ramp-2	2 lane Ramp with RE wall	529+750/0+000 Ramp-2	0+150 Ramp-2	150	TCS-16
	Ramp-3	2 lane Ramp with RE wall	529+750/0+000 Ramp-3	0+215 Ramp-3	215	TCS-16
				<b>Total (m)</b>		<b>1635</b>

Note:

- Any variations in the lengths specified in the above table shall not constitute a Change of Scope.

2. Lengths mentioned in the above list for cross section types concerned with structures are inclusive of structure length.
3. Retaining wall/ RE wall shall be provided for full height on all structures.
4. Carriageway width tapering shall be provided 1 in 50 as per manual Clause no 2.5.4.
5. Intermediate Sight Distance (Desirable Minimum Sight Distance) shall be followed for design of all vertical curves (Summit and Valley Curves) including structures as well as highways. (Clause No.2.9.5 IRC: SP: 84-2019).
6. Chainages may be adjusted according to location of structures as per Site conditions.
7. A 2m wide utility corridor, along with earthen Drain/ Lined drain/Covered Drain as per TCS shall be accommodated in the ROW.

### 3. INTERSECTIONS AND GRADE SEPARATORS

All intersections and Grade separators shall be as per Section 3 of Manual. Existing intersections which are deficient shall be improved to the prescribed standards.

The service road pavement composition shall be continued on crossroads of the intersections for the length specified for at-grade.

Properly designed intersections shall be provided at the locations and of types and features given in the tables below:

#### 3.1. At-grade intersections (clause No. 3.2 IRC: SP: 84-2019 / IRC: SP: 87-2019):

##### a) Major Intersection:

The following junctions shall be developed below elevated structure.

S.No.	Design Ch	Type of Junction	Remarks
1	539+065	Roundabout	Rishikesh – Baniyawala road
2	541+665	Roundabout	With NH-34

##### b) Minor Intersection:

S. no.	Design Chainage (Km.)	Junction type	Leads to		Median opening (yes/no)	Category of road of cross road	Carriageway width of cross road (m)	Length of cross road to be developed (m)		Remarks
			Left	Right				LH S	RH S	
1	542+070	+	Rishikesh - Chamba - Tehri road Cross Road on overpass	Rishikesh – Chamba - Tehri	No	Village road	10	50	50	
2	542+664	T	Swami Omkarananda Saraswati marg		No	Village road	10	50	50	

Note: Typical Layout, Geometric Design and Typical Cross Sections of Major Junction are given Annex – III to schedule-A.

- a) Type of Junction to be improved as per type Designs for Intersections on National Highways, 1992 Manual..
- b) The Contractor shall take up 'Detailed Engineering study' to ascertain further details of all intersections and treatment of the intersections shall be designed in accordance with the latest guidelines mentioned in section-3 of the manual. Auxiliary lanes include storage, acceleration and deceleration lane along with physical islands to be provided.
- c) The crossroad at the junctions which have a level difference from the main carriageway, are to be improved at the level of main carriageway for the length of 30 metre and then to be merged with the crossroad at the gradient not more than 1 : 50 . (Clause No. 3.2.2 IRC: SP: 84-2019 / IRC: SP: 87-2019).
- d) For minor / major layout for left-in / left out arrangement with physical islands with hazard marking. Where there is space constraint to provide physical islands, the effect of junction kept wide opened can be avoided by ghost island with marking. (Fig 3.7, IRC: SP: 84-2019 / IRC: SP: 87-2019).
- e) Entry / Exit:

All major junctions are grade separated which are covered under the provision of grade separated structure (Refer para 2.9 of this Schedule B). Following Entry / Exits are provided for grade separated structures:

S. No	Chainage	LHS	RHS	Remarks
1	1+270 ( Ramp 1)	Entry		Ramp 1 of Interchange at Km. 529+750
2	0+215 (Ramp 3)		Exit	Ramp 3 of Interchange at Km. 529+750
3	1+270	Entry	exit	Service road
4	0+150 (Ramp 2)	Entry		Ramp 2
5	538+500	Exit	Entry	

3.2. At-Grade Intersections below Grade Separators/ Interchanges: These shall be provided as given at para 3.1 of this Annex-I of the Schedule B.

S. no.	Design Chain age (Km.)	Juncti on type	Leads to		U-turn provisi on in via duct span	Category of road of cross road	Carriage way width of cross road (m)	Length of cross road to be developed (m)		Rema rks
			Left	Right				LHS	RHS	
Nil										

**Note:**

- a) The Contractor shall take up 'Detailed Engineering study to ascertain further details of all intersections and treatment of the intersections shall be designed in accordance with the latest guidelines mentioned out in section-3 of manual.

- b) Junction improvement under grade separators shall be carried out as per manual with proper entry/exit to cross roads and slip/service roads, etc. Auxiliary lanes including storage, acceleration and deceleration lane along with physical islands to be provided.
- c) Location of grade-separated structures are indicative. Exact location should be decided in consultation with Authority Engineer
- d) Intersection Layout, Entry/Exit, Right Turning Lane, U-Turns, Geometric Design and Typical Cross Sections of Interchange are included in alignment plan enclosed in Annex-III Schedule A.
- e) Only Entry or Exit shall be designed at any location (provision of entry/exit by ghost island not permitted). (Clause No. 2.13.1 IRC: SP: 84-2019 / IRC: SP: 87-2019).

#### 4. ROAD EMBANKMENT AND CUT SECTION

- 4.1. Construction of Road Embankment/cuttings shall confirm to the Specifications and Standards given in Section 4 of the Manual and the specified cross sectional details. Notwithstanding anything to the contrary contained in this Agreement or Manual, the proposed profile of the project highway as indicated in the Annex-III of Schedule A shall be treated as minimum requirement.
- 4.2. *The Contractor/Contractor shall deploy Grading, Paving and Compaction Equipment equipped with system of **Automated & Intelligent Machine-Aided Construction (AI-MC)** for finishing of all grades including Embankment, and subgrade. The System of **Automated & Intelligent Machine-aided Construction (AI-MC)** for Motor Graders/Paver and the same in Compactors and Dozers shall be done with help of 3D Digital Model generated from Design to ensure quality Standards as per IRC Specifications and Productivity Improvement. Further, Contractor shall ensure the generation of measurable Digital Records that can be shared on a Digital Drive or can be viewed in real time. The Hardware and Software used by the Contractor shall have Features and Specifications mentioned at Schedule D.*
- 4.3. Based on site/design requirement, the Contractor shall design the alignment plans and profiles of the project highway based on site/design requirement mentioned in Schedule B with approval from the Authority Engineer/Authority Engineer within the available Right of Way. However, it is clarified that bottom of subgrade level shall be at-least 1500 mm above HFL/Existing ground level for a greenfield/ bypass stretch.
- 4.4. The side slopes shall not be steeper than 2H:1V. In case, there is a ROW constraint than, suitable soil retaining structures shall be provided.(Clause No. 4.2 IRC: SP: 84-2019 / IRC: SP: 87-2019)
- 4.5. For stability of slope upto 3 metre height the turfing can be adopted. For the slope from 3m to 6 metre suitable, geocell, geo-grid, geo-green etc. can be provided with suitable drainage chutes as per IRC 56. For the slope more than 6 metre height, a complete slope stability analysis as per IRC:75 shall be done and the slopes shall be compulsory protected with stone pitching within stone masonry grid structure of 4x4 metre and suitable drains/chutes etc. shall be provided for effective drainage of the water.
- 4.6. Use of Pond Ash and Design of Pond Ash embankment shall be specified Procurement of Pond/ flyash shall be obligation of concessionaire and non availability of the same shall not constitute to COS. Contractor is also not obliged for transferring savings (if any) due to use of pond/ flyash. Mitigation measures work for slope be provided as per specifications wherever steep cutting section is involved.

## 5. PAVEMENT DESIGN

Pavement design shall be carried out as per section 5 of the manual.

5.1. Contractor shall develop 3D Digital Models and use Suitable System of **Automated & Intelligent Machine-aided Construction (AI-MC)** for Motor Graders and Paver and the same is Compactors and Dozers to ensure Quality Standards as per IRC Specifications and Productivity improvement. Further, Contractor shall generate measurable Digital Records that can be shared on a Digital Drive or can be viewed in real time. The Hardware and software used by the Contractor shall have Features and Specification mentioned at Schedule D.

5.2. Type of pavement and Design requirement: -

The pavement shall be Flexible for main carriageway, Loops and Ramps Interchanges, service road and slip road.

Minimum design traffic for flexible pavement in Main carriageway, Loops & Ramps at interchange including exit / entry ramps shall be 55 MSA. Service road and slip road shall be designed for flexible pavement with Minimum design traffic of 20 MSA.

5.2.1. Design Period and Strategy - Pavement shall be constructed for the entire length of Project Highway including paved shoulders. Flexible Pavement shall be designed for 20 Years and Rigid Pavement shall be designed for 30 years and minimum sub grade CBR of 8% and maximum subgrade CBR of 10%. Stage construction shall not be permitted.

5.3. In order to meet the intended functional requirement of respective pavement layers on Loops, Ramps/Service roads, the minimum thickness of respective pavement layers for loops, Ramps and connecting cross roads/ service roads/ slip roads/ entry/exit locations, acceleration/ deceleration lane, right turning lanes shall, however, in no case be less than as given below:

5.3.1. Minimum crust for Main carriageway, ramps at MCW, loops & Ramps at interchanges, paved shoulder, edge strip, entry/exit locations, acceleration/ deceleration lane, right turning lanes (Flexible) with CTSB/WMM.

Pavement composition	Minimum crust thickness in mm	Remarks
Subgrade	500	Main carriageway, loops & Ramps at interchanges
CTSB	200	
CTB	140	
DBM	60	
BC	40	

5.3.2. Minimum crust of pavement for service/ slip road with (Flexible) with GSB/WMM

Pavement composition	Minimum crust thickness in mm	Remarks
Subgrade	500	Service/ slip road
CTSB	200	
CTB	150	
DBM	50	
BC	30	

## 5.4. Reconstruction Existing Road

Following stretches of the existing road shall be reconstructed. These shall be provided with new pavement as per para 5 above:

S. No.	Design Chainage		Distance in (Km)	Remarks
	Start	End		
	Nil			

## 5.5. Bituminous Mix for Overlay (Clause No. 5.9.8 IRC: SP: 84-2019 / IRC: SP: 87-2019)

The following stretches of the existing road shall be provided bituminous overlay as follows.

S. no	Existing chainage		Pavement composition	Remarks
	From	To		
	Nil			

## 6. ROADSIDE DRAINAGE

6.1. **Drainage system** including surface and subsurface drains for the Project Highway including crossroads shall be provided as per section 6 of the manual. Lined drain shall be adequate to discharge main water flow anticipated from all the probable sources/catchment area up to nearest cross drain/out fall point. RCC Drain cum footpaths shall conform to the cross-sectional features and other details as given in Annexes to Schedule-B and shall be provided as under:

## a) RCC Covered Drain

RCC Covered drain shall be provided at the following locations:

RCC covered drain						
S. no.	Chainage		Length (m)	TCS Type	Side	Total length (m)
	From	To				
<b>A</b>	<b>Main carriageway</b>					
1	529+750	529+970	220	TCS-12	one side	220
2	541+760	541+960	200	TCS-19	Both side	400
3	541+960	542+060	100	TCS-18	Both side	200
4	Rotary 1 junction at Km. 539+065 Jolly grant road inner Radius = 30m and carriageway width = 11.50m		188			188
5	Rotary 2 at km. 541+665 on NH-34 near harbal park, Inner Radius = 40m and carriageway width = 11.50m		252			252
					<b>Sub Total</b>	<b>1260</b>

b) **lined Open drain** – Open lined drain has been proposed for nala diversion for the said location below. Size of lined open drain shall be trapezoidal width inner bottom of 2.5m,

side slope of 1:1 and height of 1.5m.

S. no.	Chainage		Length (m)	TCS Type	Side	Total length (m)
	From	To				
1	530+730	530+960	230	TCS-3	both	460
2	540+470	540+560	90	TCS-3	both	180
3	540+640	540+840	200	TCS-3	both	400
4	540+840	540+890	50	TCS-4	one	50
5	540+890	540+950	60	TCS-3	both	120
6	540+950	540+980	30	TCS-4	one	30
7	541+220	541+310	90	TCS-4	one	90
8	541+310	541+400	90	TCS-3	both	180
9	541+400	541+450	50	TCS-4	one	50
10	541+450	541+570	120	TCS-3	both	240
11	541+570	541+610	40	TCS-4	one	40
12	541+700	541+760	60	TCS-4	one	60
13	542+060	542+130	70	TCS-3	both	140
14	542+170	542+270	100	TCS-3	both	200
15	542+270	542+285	15	TCS-4	one	15
16	542+410	542+420	10	TCS-4	one	10
17	542+465	542+530	65	TCS-14	one	65
18	542+530	542+664	134	TCS-15	one	134
		<b>Total</b>	-			<b>2464</b>

- 6.2. **Unlined Drains** other than above mentioned locations shall be provided in the entire project length which gets terminated at all crossroad locations. In case, the definite outfall is not available, a rainwater harvesting system shall be provided at the deepest location for dispersal of water.
- 6.3. **lined Median drain** – Lined drain shall be provided in the center of the median at super elevation locations and depressed median. Draining of storm water from one carriageway to other carriageway is not permitted. the Concessionaire shall design the median drain based on site/design requirement mentioned in Schedule D with approval from the Independent Engineer and shall be connected with the nearest culvert/outfall or existing drain.

S. no.	Chainage		Length (m)	location	Remarks
	From	To			
			nil		
		<b>Total</b>	-		

- 6.4. **Drainage arrangement between Main Carriageway and Service/Slip Roads:** A suitable drainage arrangement for draining storm water of main carriageway shall be provided. Storm water of main carriageway to service road is not permitted.
- 6.5. **Drainage where Embankment Height is more than 3m**

Drainage chutes shall be provided at suitable interval on embankment slopes. The drainage arrangement shall include kerb, cement concrete drainage channel at the edge roadway, Cement Concrete Chutes, CC bedding, energy dissipation basin, etc. Mountable Kerb shall be provided beyond the post of MBCB to channelize storm water into chute.

**6.6. Drainage for Structures :**

A suitable drainage arrangement for draining storm water from deck slab shall be provided. Water shall not fall on any surface of the structures, or remain standing or flowing over the road below structure.

**6.7. Drainage for Underpass and Subways Structures** { Clause No. 6.8.3 IRC: SP:84-2019/ IRC: SP:87-2019 }. A suitable drainage arrangement for draining storm water from Underpass and Subways shall be provided.

**6.8. Drainage arrangement of Retaining Structures**

Vertical Drop-down drainage pipes with suitable cleaning provision shall be provided at suitable interval. Drainage fixtures and dropdown pipes shall be of rigid, corrosion resistant material not less than 100mm dia. The Storm water of main carriageway draining on service road carriageway is not permitted.

**7. DESIGN OF STRUCTURES**

**7.1. General**

Project Highway is proposed to be constructed to Four configuration with provision for widening to six-lane configuration in future. As such, superstructure of all bridges, culverts and structures is to be designed for edge movement of the vehicle considering stitching of new superstructure in future due to widening for additional lane.

**All structures except wherever expansion joints have been provided, The pavement layers WMM, DBM & BC shall be continued over the structures for smooth riding quality of the project highway.** These structures shall be designed considering the dead load of pavement (WMM, DBM, BC, etc) layers

All major structures will be designed preferably as continuous slab to reduce the number of expansion joints on the MJB/ ROBs/ flyover/ Interchange etc.

**7.1.1.** For any proprietary product such as Reinforced Soil Wall, Retaining Wall, Expansion Joints, Bridge Bearing, Pre-stressing Systems, Commercial Stabiliser, Geosynthetics Products, UHPFRC elements, etc., Contractor shall ensure signing of agreement between the Contractor and Technology Provider before use of such material/ technology/ design in NH Project. The agreement shall have the provision of involvement of the Technology Provider during execution. Technology Provider shall deploy the requisite design experts/ material technologist/ skilled & trained construction supervision personnel to certify material testing & material characterization for design, proof check of the design, approve construction methodology including field trial sections before actual construction, quality control and supervision & certification of the day-to-day construction/execution. The warranty for proprietary product(s) shall be submitted by Technology Provider along with all other document(s) as required by IRC: SP: 112-2017 "Manual for Quality Control in Road and Bridge works". A copy of such agreement shall be furnished to AE and to RO of the Ministry /

NHAI/NHIDCL for reference and record..

7.1.2.All structures to be designed for Special Vehicle (SV) loading, Class 70R, Class A and congestion factor, whichever is critical, as per latest IRC provisions and constructed in accordance with section-7 of the Manual and shall conform to the cross-sectional features and other details specified therein.

7.1.3.Staircase (with Stone Masonry/ Concrete) in the approaches to Box/Slab Culverts (near the end of Return Wall) /Minor and Major Bridge by the Side of abutments on either Side of the carriageway to access the underneath of Box/Slab Culverts/Bridges.



7.1.4. Clear deck width of bridges/grade separated structures/RoBs (measured from inside to inside of crash barrier) shall be equal to the roadway width (carriageway width+ paved shoulder width+ earthen shoulder width+ width of median including shyness for raised median /depressed median as applicable) in their approaches. Wherever footpath is provided on bridge/RoB, RCC crash barrier should be provided between footpath and carriageway and pedestrian guard rail at outer edges of the bridge/RoB. In case of footpath on bridge/RoB, the width of earthen shoulder shall be tapered at the rate of 1:15 { Circular: EFile No.RW/NH-33044/22/2020-S&R dated 4th June, 2024 }..

7.1.5.The Safety Barrier and Footpath on Bridges and RoB shall continue on approaches. The footpath shall be provided with paved surface & railing till the embankment height is more than 3m. (Clause No. 7.17 IRC: SP: 84-2019 / IRC: SP: 87-2019)

Details of Structures with footpaths (Clause No. 7.2 ii IRC: SP: 84-2019 / IRC: SP: 87-2019)

S. no.	Location at Km.	Skew Angle in degree	Footpath width (m)		Remarks
			LHS	RHS	
1	530+330	0	1.5	1.5	Major Bridge cum animal underpass
2	531+100	0	1.5	1.5	Major Bridge cum via duct
3	531+870	0	1.5	1.5	Major Bridge
4	532+920	0	1.5	1.5	Minor Bridge

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km)..

**B.192**

S. no.	Location at Km.	Skew Angle in degree	Footpath width (m)		Remarks
			LHS	RHS	
5	540+215	0	1.5	1.5	ROB
6	540+470	0	1.5	1.5	Minor Bridge
7	540+860	0	1.5	1.5	Minor Bridge
8	541+100	0	1.5	1.5	Major Bridge
9	542+140	0	1.5	1.5	Minor Bridge
10	542+347	0	1.5	1.5	Kharasrote river

7.1.6. All bridges shall be high level bridges.

7.1.7. All structures shall be designed to carry utility services on the outer side of RCC barrier/Railing as per site requirement.

7.1.8. Any structures falling within acceleration / deceleration lane /taper shall be constructed to the required width. This increase in width of structures shall not be treated as change of scope.

## 7.2. Culverts (Clause No. 7.3 (i) IRC: SP: 84-2019 / IRC: SP: 87-2019)

7.2.1. The overall width of all culverts (measured from inside to inside of Parapet/ headwall) shall be equal to the roadway width of the approaches. The overall width of culverts shall be including width of main carriageway and slip/ service roads /Entry ramps/ Exit Ramps/ Acceleration/ Deceleration lanes, etc. All culverts shall also be continued in median and in gap between main carriageway and service road.

7.2.2. New/Reconstruction of RCC pipe culverts: The existing culverts at the following locations shall be re-constructed as new culverts.

### Main Carriageway:

S. no.	Design Chainage (km)	Culvert type	Skew angle	Span/ Opening (m)	New/ Reconst ruction	Culvert crossing type (Balancing/Stream etc.)	Remarks
				Nil			

### Ramps:

S. no.	Design Chainage (km)	Culvert type	Skew angle	Span/ Opening (m)	New/ Reconst ruction	Culvert crossing type (Balancing/Stream etc.)	Remarks
				Nil			

7.2.3. Widening of existing RCC pipe culverts (Clause No. 7.3 iii IRC: SP: 84-2019 / IRC: SP: 87-2019)

All existing culverts which are to be retained shall be widened to the proposed roadway width of the Project Highway as per the typical cross section given in section 7 of the Manual. Repairs and strengthening of existing structures where required shall be carried out.

S. no.	Design Chainage (km)	Culvert type	Skew angle	Span/ Opening (m)	Repairs Rehabilitation proposals	Culvert crossing type (Balancing/ Stream etc.)	Remarks
	0+415 Ramp1 & Service Road	Pipe	0	1x1.2m dia	Widen		
	0+173 Ramp 3 & Service Road	Pipe	0	1x1.2m dia	Widen		

#### 7.2.4. Construction of Box Culvert

7.2.5. New Box culverts (given in table below) shall be constructed for width (measured from inside to inside of Parapet/ headwall) equal to the proposed roadway width of the Project Highway & as per typical cross-section given in schedule B. The details are given as under Additional new culverts shall be constructed at following locations:

S. no.	Design Chainage (km)	Culvert type	Skew angle	Span/ Opening (m)	New/ Reconst ruction	Remarks
<b>A</b>	<b>Main Carriageway</b>					
1	530+040	Box	0	1x3x3	New	
2	531+400	Box	0	1x2x2	New	
3	531+620	Box	0	1x3X3	New	
4	532+220	Box	0	1x3X3	New	
5	532+400	Box	0	1x2x2	New	
6	532+590	Box	0	1x3x3	New	
7	536+600	Box	0	1x3x3	New	
8	536+900	Box	0	1x3x3	New	
9	537+250	Box	0	1x6	New	
10	537+550	Box	0	1x3x3	New	
11	537+900	Box	0	1x2x2	New	
12	538+200	Box	0	1x2x2	New	
13	538+530	Box	0	1x3x3	New	
14	539+800	Box	0	1x3x3	New	
15	539+950	Box	0	1x6	New	
16	540+030	Box	0	1x6	New	
17	540+620	Box	0	1X6	New	
18	541+430	Box	0	1X6	New	
19	541+580	Box	0	1X6	New	
20	541+750	Box	0	1X6	New	
21	541+930	Box	0	1X6	New	
22	542+650	Box	0	1X2X2	New	
<b>B</b>	<b>Approach road</b>					
23	542+650	Box	0	1x2x2	New	

## 7.2.6. Reconstruction of existing Culverts to Box Culverts:

The existing culverts at the following locations shall be re-constructed as new culverts:

Sr. No.	Design Chainage*	Proposed Span Arrangement (No. x Span)	Skew Angle	Culvert crossing type	Remarks
					Nil

Note : \*Actual chainage shall be decided at site in consultation with Authority Engineer/ Authority.

Repairs/ replacements of railing /parapets, flooring and protection works of the existing culverts shall be undertaken as follows:

Repairs/Replacement of railings/ parapets and any other defects noticed at the time of construction shall be undertaken by the contractor for all the retained culverts.

Floor protection works shall be as specified in the relevant IRC Codes and Specifications.

## 7.2.7. Widening of existing box culverts:

All existing culverts which are to be retained shall be widened to the proposed roadway width of the Project Highway as per the typical cross section given in Schedule-B. Repairs and strengthening of existing structures where required shall be carried out:

S. No.	Design Chainage*	Culvert Type	Proposed Span Arrangement (no x span x height)	Improvement Proposal
1	0+966 Ramp 1	Box	1no.x4mx1.6m	Widen

## 7.2.8. Culverts on Crossroads:

S. no.	Design Chainage (km)	Span arrangement (m)	Type (Box/Pipe)	Length pf culvert (m)	Remarks
					Nil

7.2.9. Utility ducts (Greenfield as well as Brownfield which is being upgraded) shall be provided in form of NP-4 RCC Pipe dia 600 mm to the proposed roadway width of the Project Highway and along with inspection chamber where directed for crossing of utilities anywhere as per Manual requirements..

## 7.3. Bridge

7.3.1. Existing Bridges to be re-constructed / widened. - Nil

7.3.2. Additional new Bridges on Main Carriageway

A) New Major Bridges at the following locations on the Project Highway shall be constructed.

S. No	Chainage	Name of Stream	Square Span C/C of Exp. Joint (m)	Width of Structure (m)	Remarks
1	530+330	Nala	10 X 40	2x13.00	
2	531+100	Nala	5 X 40	2x13.00	

S. No	Chainage	Name of Stream	Square Span C/C of Exp. Joint (m)	Width of Structure (m)	Remarks
3	531+870	Bangolikhola	2 X 40	2x13.00	
4	539+280	Chandrabhagariver	13X40 +2X35 (LHS-MCW) 14X40 +1X30 (RHS-MCW) 7X40 +1X30 (LHS-SR) 7X40 +1X30 (LHS-SR)	1x11+ 2x11.10+ 1x11	Bridge for MCW and SR on both sides
5	541+100	nala	6 X 40	2x13.00	
6	542+350	Kharasrote river	2X50 + 1X25	2x13.00	

B) New Minor Bridges at the following locations on the Project Highway shall be constructed.

Sl. No	Chainage	Name of Stream	Clear Square Span (m)	Width of Structure (m)	Remarks
1	532+920	nala	1 X 10	2x13	Minor Bridge
2	540+470	nala	2 X 6	2x13	Minor Bridge
3	540+860	nala	1 X 10	2x13	Minor Bridge
4	542+140	nala	1 X 10	2x13	Minor Bridge

### 7.3.3. Additional new Bridges on Ramps

New Bridges at the following locations on the Ramps Road shall be constructed.

Sl. No	Chainage	Name of Stream	Square Span C/C of Exp. Joint (m)	Width of Structure (m)	Remarks
			nil		

#### Note:

S. no.	Design Chainage	Minimum Design Discharge for 100 years return period	Maximum silt factor	Minimum velocity of water at bridge location	Type of foundation	Total length of structure over water body (minimum)	Maximum scour level for piers shall not be above RL	Maximum scour level for abutments shall not be above RL	Remarks
1	530+330	25.68	9.64	1.216	Open	10X40	357.575	358.095	Major Bridge
2	531+100	83.79	9.64	1.388	PILE	5X40	359.726	360.994	Major Bridge
3	531+870	211.13	9.64	2.885	Open	2x40	363.624	364.674	Major Bridge
4	539+280	428.12	9	2.072	pile	13x40 +2x35 LHS - MCW 14x4	391.06	392.389	Major Bridge for MCW and SR

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Kharasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km)..

**B.196**

S. no.	Design Chainage	Minimum Design Discharge for 100 years return period	Maximum silt factor	Minimum velocity of water at bridge location	Type of foundation	Total length of structure over water body (minimum)	Maximum scour level for piers shall not be above RL	Maximum scour level for abutments shall not be above RL	Remarks
						0+1X30 RHS - MCW 7X40 +1X45 (RHS-SR) 7X40 +1X30 (LHS - SR)			on both sides
5	541+100	10.28	9.64	3.1	PILE	6X40	397.785	398.466	Major Bridge
6	542+347	51.88	9.64	3.345	PILE	2X50+1X25	397.074	397.731	Major Bridge
7	532+920					1 x 10			Minor Bridge
8	540+470					1 x10			Minor Bridge
9	540+860					1 x10			Minor Bridge
10	542+140					1 x 10			Minor Bridge

- a) If the length of Structure required is more than the given value due to reasons well established and approved by the Authority, the extra length shall come under the clause of Change of Scope.
- b) Well /pile cap top level cannot be lowered below the level shown in the GAD
- c) Diameter of well foundation shown in the GAD cannot be reduced further.
- d) Span arrangement - to be decided as per IWAI/ Irrigation Authority/Other concerned Authority Guidelines considering Navigational requirement.
- e) All Structures to be designed for Special Vehicle (SV) loading, Class 70R, Class A and Congestion Factor, whichever is critical, as per latest IRC Provisions.
- f) Individual length of spans proposed in GAD are not to be reduced.
- g) Maximum Scour Level for Piers shall not be above RL
- h) Maximum Scour Level for abutments shall not be above RL
- i) Project Highway is proposed to be constructed to four lane configurations with provision for widening in future. As such, Superstructure of all Bridges, Culverts and Structures is to be designed for Edge Movement of the Vehicle considering stitching of New Superstructure in future due to widening for additional lane.

7.3.4. **Retained Bridges:** - Repairs and strengthening of bridges and structures.

Sl. No.	Design Chainage	Type of Structure	Span Arrangement	Width (m)	Location	Type of repair
Nil						

## 7.4. Rail road Bridges (ROB/Low Height Subway) (Clause No. 7.18 IRC: SP: 84-2019 / IRC: SP: 87-2019)

## 7.4.1. Road over bridges (road over rail) shall be provided at the following locations:

Sl. No	Railway Chainage (km)	Road Chainage (Km)	Span Arrangement (m)	Total Width of Structure (m)	Type of Foundation	Type of Sub Structure	Type of Super Structure
1	6+651.318 (Rishikesh – Rudraprayag Rail Line Under Construction)	540+209 (RHS)	3X106.1	1x17.0	Pile	RCC Wall	Steel Truss
		540+230 (LHS)	3X106.1	1x17.0	Pile	RCC Wall	Steel Truss

**Note:**

- If the length/width of the span/ type of super-structure is changed due to any reason the COS shall be considered.
- ROB shall be designed, constructed and maintained as per the requirements of Railway authorities. The construction plan shall be prepared in consultation with the concerned railway authority.
- The ROB shall be constructed and maintained by the Contractor under supervision of the Railways.
- All charges payable to the Railways like D&G, Capitalized maintenance, signaling, cabling, OHE modification, any other Utility Shifting pertains to Railway Department, earthing etc. except P&E charges shall be borne by the Contractor.
- Wearing coat shall be as per approved ROB GAD according to RDSO drawings.
- The instrumentation for measurement of vibration shall be installed as per guidelines issued by Indian Railways.

7.4.2. **Road under bridges (road under railway line) Limited Height Subway** shall be provided at the following level crossings, as per GAD drawings attached:

Sl. No.	Location of Structure	Length (m)	No x span Length x height (m)	Type of structure	Remarks
Nil					

7.5. Grade Separated Structures The grade separated structures shall be provided at the locations and of the type and length specified in paragraphs 2.9,2.10 and 3 of Annex-I of Schedule-B.

7.6. Foot Over Bridge:- Nil

7.7. A summary of Culverts, Bridges and Structures shall be presented as follows:

S. no.	Name of Structures	Total numbers	Remarks
1	Major Bridge	6	
2	Minor Bridge	4	
3	ROB	1	
4	VUP (Single Span)	-	
5	VUP (Multi span)	-	
6	LVUP	-	
7	SVUP	2	
8	FOB	-	
9	Box culvert	24	
10	Pipe Culvert	2	

## 8. TRAFFIC CONTROL DEVICES AND ROAD SAFETY WORKS

8.1. Traffic control devices and road safety works shall be provided in accordance with section 9 of the Manual.

8.2. Traffic Sign

Traffic signs shall be provided as per IRC 67 and MoRTH guidelines dated 24th December 2024 and NHAI policy circular no 12.40/ 2025 dated 20th September 2025 and as mentioned in Schedule-C.

8.3. Pavement Marking:

Pavement markings shall be completed as per IRC 35 & RT-25035/07/2023-RS (Part) (221534) dated 20th July 2023 as mentioned in Schedule-C..

8.4. Safety Barrier:

The safety barriers shall be provided in accordance with Section-9 of the Clause 9. 7 of the manual.

The Safety Barrier length proposed are excluding the safety barrier already proposed on Culverts, Grade Separated Structures, Interchange, Bridges, RoB and RUB as applicable cross sections respectively.

End Treatment of Steel barriers/Rope Barrier shall be specified i.e. MELT or P-4 confirming to EN 1317-4, TT, MBCB barrier to Concrete Barrier (Clause No. 9.7.2 (b) IRC: SP: 84-2019 / IRC: SP: 87-2019)

End Treatment to Concrete barrier shall be done as specified in Clause No. 9.7.3 (b) IRC: SP: 84-2019 / IRC: SP: 87-2019.

The details of the location are as below:

S. no.	Item	Chainage		Length (m)	TCS	Total length (m)	Remarks
		From	To				
A	Thrie-beam Single faced metal crash barrier			14943		25532	
1	Median on MCW	529+750	529+970	220	TCS-12	440	
2	Median on MCW	529+970	530+130	160	TCS-11	320	
3	Median on MCW	530+530	530+580	50	TCS-2	100	
4	Median on MCW	530+580	530+730	150	TCS-1	300	
5	On Both Median and Carriageway edge	530+730	530+960	230	TCS-3	920	
6	Median on MCW	530+960	531+000	40	TCS-2	80	
7	Median on MCW	531+200	531+300	100	TCS-2	200	
8	Median on MCW	531+300	531+500	200	TCS-1	400	
9	Median on MCW	531+500	531+830	330	TCS-2	660	
10	Median on MCW	531+910	531+940	30	TCS-2	60	
11	Median on MCW	531+940	532+120	173	TCS-1	346	
12	Median on MCW	532+120	532+300	180	TCS-2	360	
13	Median on MCW	532+300	532+380	80	TCS-1	160	
14	Median on MCW	532+380	532+430	50	TCS-2	100	
15	Median on MCW	532+430	532+570	140	TCS-1	280	
16	Median on MCW	532+570	532+600	30	TCS-2	60	
17	Median on MCW	532+600	532+710	110	TCS-1	220	
18	Median on MCW	532+710	533+270	550	TCS-2	1100	
19	Median on MCW	536+310	536+610	300	TCS-2	600	
20	Median on MCW	536+610	537+030	420	TCS-1	840	
21	Median on MCW	537+030	537+610	580	TCS-2	1160	
22	Median on MCW	537+610	537+660	50	TCS-1	100	
23	Median on MCW	537+660	537+770	110	TCS-2	220	
24	Median on MCW	537+770	538+500	730	TCS-1	1460	
25	Median on MCW	538+500	539+000	500	TCS-5	1000	
26	Median on MCW	539+590	539+820	230	TCS-2	460	
27	Median on MCW	539+820	539+950	130	TCS-1	260	
28	Median on MCW	539+950	540+056	106	TCS-2	212	
29	Median on MCW	540+374	540+470	96	TCS-1	192	
30	On Both Median and	540+470	540+560	78	TCS-3	312	

S. no.	Item	Chainage		Length (m)	TCS	Total length (m)	Remarks
		From	To				
	Carriageway edge						
31	Median on MCW	540+560	540+640	80	TCS-1	160	
32	On Both Median and Carriageway edge	540+640	540+840	200	TCS-3	800	
33	Median on MCW	540+840	540+890	40	TCS-4	80	
34	On Both Median and Carriageway edge	540+890	540+950	60	TCS-3	240	
35	Median on MCW	540+950	540+980	30	TCS-4	60	
36	Median on MCW	541+220	541+310	90	TCS-4	180	
37	On Both Median and Carriageway edge	541+310	541+400	90	TCS-3	360	
38	Median on MCW	541+400	541+450	50	TCS-4	100	
39	On Both Median and Carriageway edge	541+450	541+570	120	TCS-3	480	
40	Median on MCW	541+570	541+610	40	TCS-4	80	
41	Median on MCW	541+700	541+760	60	TCS-4	120	
42	Median on MCW	541+760	541+960	200	TCS-19	400	
43	On Both Median and Carriageway edge	541+960	542+130	50	TCS-3	200	
44	Median on MCW	542+130	542+150	10	TCS-1	20	
45	Median on MCW	542+150	542+170	20	TCS-2	40	
46	On Both Median and Carriageway edge	542+170	542+270	100	TCS-3	400	
47	Median on MCW	542+270	542+285	15	TCS-4	30	
48	Median on MCW	542+410	542+420	10	TCS-4	20	
49	Median on MCW	542+420	542+465	45	TCS-13	90	
45	Median on MCW	529+750	529+970	220	TCS-12	440	
46	Median on MCW	529+970	530+130	160	TCS-11	320	
47	Median on MCW	530+530	530+580	50	TCS-2	100	
48	Median on MCW	530+580	530+730	150	TCS-1	300	
49	On Both Median and	530+730	530+960	230	TCS-3	920	

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km)..

**B.201**

S. no.	Item	Chainage		Length (m)	TCS	Total length (m)	Remarks
		From	To				
	Carriageway edge						
50	Outer edge on MCW for emb ht >3m	variable chainage		6670		6670	
B	W-beam Single faced metal crash barrier						
C	wire rope safety barrier						
D	W-beam double faced metal crash barrier						
E	Thrie-beam double faced metal crash barrier						
F	Concrete Single faced barrier						
G	Concrete double faced barrier i.e. Jersey type crash barrier at median with antiglare						
H	Concrete crash barrier with friction slab					<b>3190</b>	
	Main carriageway						
1		529+750	529+970	220	TCS-12	220	
2		538+500	539+005	505	TCS-5	1010	
3	Interchange at Km. 529+750						
4	Ramp-1	0+000	1+270		TCS-16	1280	
5	Ramp-2	0+000	0+235		TCS-10	335	
6	Ramp-3	0+000	0+215		TCS-11	345	
I	Pedestrian guard rail						
J	End treatment for steel barrier						

## 9. ROADSIDE FURNITURE

9.1. Road side Furniture shall be provided in accordance with section 9 of the Manual and relevant IRC codes.

## 10. COMPULSORY AFFORESTATION - Nil

## 11. HAZARDOUS LOCATIONS

The safety barriers shall be provided at the following hazardous location such as ponds, well, electric sub-station, Electric tower, spilt carriageway, etc.

S. no.	Location stretch (km.)		Type of safety barrier	LHS/RHS
	From	To		
Nil				

## 12. SPECIAL REQUIREMENT:

Retaining Structure and protection works shall be provided at locations as indicated below and as provided in TCS schedule in cl. 2.11 of schedule-B. The length of the Retaining wall/RE wall/Toe wall as indicated below is excluding the sections of Major Bridges, Minor Bridges, LVUP, VUP and Flyover, however the length is inclusive of the sections of Box Crossing, Box culverts The retaining wall (RCC / RE), and breast wall shall be constructed as per requirement of site condition in accordance with manual requirement. However, minimum length of protection works shall be construction as per details given below:

Location for RE wall/Retaining wall are as given below:

a. Location of RE wall are as given below:

S. No.	Location of RE wall		Length (m)	TCS	Side	Total Length (m)
	From	To				
<b>A.</b>	<b>Main Carriageway</b>					
1	529+750	529+970	220	TCS-12	one side	220
2	538+500	539+005	505	TCS-2	BHS	1010
		<b>Sub total</b>				<b>1230</b>
<b>B.</b>	<b>Interchange at Km. 529+750</b>					
12	Ramp-1	0+000	1+270		TCS-16	1280
13	Ramp-2	0+000	0+235		TCS-10	335
14	Ramp-3	0+000	0+215		TCS-11	345
		<b>Sub total</b>				<b>1960</b>
		<b>Total</b>				<b>3190</b>

b. Location of Retaining/Toe wall given below:

S. No.	LHS			RHS			Remarks
	Chainage		Length (m)	Chainage		Length (m)	
	From	To		From	To		
<b>A. Retaining wall along main carriageway</b>							
1	541+760	541+960	200	541+760	541+960	200	<b>Harbal park</b>
<b>B. Toe wall along main carriageway</b>							
1	530+080	530+120	40	529+970	530+120	150	
2	530+570	530+650	80	530+570	530+730	160	
3	530+710	530+730	20	530+960	530+990	30	
4	531+200	531+280	80	531+200	531+400	200	

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km)..

**B.203**

S. No.	LHS			RHS			Remarks
	Chainage		Length (m)	Chainage		Length (m)	
	From	To		From	To		
5	531+390	531+820	430	531+460	531+820	360	
6	531+910	531+960	50	531+910	531+990	80	
7	532+100	532+460	360	532+010	532+030	20	
8	532+560	532+910	350	532+080	532+910	830	
9	532+920	533+260	340	532+920	533+260	340	
10	536+310	536+960	650	536+310	538+170	1860	
11	536+990	538+070	1080	539+590	539+690	100	
12	538+080	538+170	90	539+950	540+050	100	
13	539+590	539+670	80	540+370	540+460	90	
14	539+970	540+050	80	540+550	540+610	60	
15	540+370	540+400	30	540+620	540+640	20	
16	540+530	540+580	50	540+950	540+970	20	
17	540+610	540+630	20	541+280	541+310	30	
18	540+950	540+970	20	541+400	541+440	40	
19	541+280	541+310	30	541+720	541+750	30	
20	541+400	541+440	40	541+910	541+930	20	
21	541+720	541+750	30	542+140	542+160	20	
22	541+910	541+930	20				
23	542+140	542+170	30				
	<b>Sub Total</b>		<b>4000</b>	<b>Sub Total</b>		<b>4560</b>	
<b>C</b>	<b>Toe wall with Slip road on it's outer edge</b>						
1	538+500	538+720	220	538+800	538+850	50	
<b>D</b>	<b>Dismantling of existing RE wall on NH-7 and reconstruction with RCC retaining wall</b>						
1	merging location of Ramp-2 with NH-7 from km. 0+190 to km. 0+215, avg, height of retaining wall = 3.0m		25				
2	merging location of Ramp-3 with NH-7, average height of retaining wall = 1.5m					180	
	<b>Total (A+B+C+D)</b>		<b>4420</b>			<b>4990</b>	
	<b>Total including both sides</b>		<b>9410</b>				

c. Location of breast wall are as given below:

S. No.	LHS Breast Wall			RHS Breast Wall		
	From	To	Length (m)	From	To	Length (m)
1	530+720	530+790	70	530+760	530+930	170
2	530+820	530+950	130	540+400	540+440	40
3	532+040	532+080	40	540+510	540+540	30
4	540+470	540+570	100	540+650	540+670	20
5	540+670	540+820	150	540+700	540+840	140
6	540+860	540+950	90	540+900	540+920	20
7	541+230	541+300	70	541+320	541+350	30
8	541+310	541+400	90	541+360	541+400	40
9	541+450	541+550	100	541+450	541+490	40
10	541+690	541+720	30	541+530	541+560	30
11	541+740	541+760	20	542+080	542+110	30
12	542+080	542+120	40	542+170	542+270	100
13	542+160	542+280	120			
	<b>Sub total</b>		<b>1050</b>	<b>Sub total</b>		<b>690</b>
	<b>Total</b>					<b>1740</b>

### 13. SHIFTING OF UTILITIES

The specifications of concerned Utility Owning Department shall be applicable and shall be followed. Brief details of shifting of utilities are given in **Annex-I Schedule A**.

- 13.1. Shifting of obstructing utilities indicated in Schedule A to an appropriate location in accordance with standards and specifications of concerned Utility Owning Department is part of the scope of work of the Contractor. The existing utility and tentative shifting plan of the Project highway is enclosed in Annex – III Schedule A. The utility shifting indicated in Annex-I schedule A and indicated in the utility shifting Plan enclosed in Annex-III Schedule A shall be followed by concessionaire as minimum. The concessionaire shall, however, shift any other utilities, if required, based on site/design requirement as well as the requirement of the utility owning department. No change of scope shall be considered.
- 13.2. The type/ spacing/ size/ specifications of poles/ towers/ lines/cables to be used in shifting work shall be as per the guidelines of Utility Owning Department and it is to be agreed solely between the Contractor and the Utility Owning Department. No change of scope shall be admissible, and no cost shall be paid for using different type/ spacing/ size/ specifications in shifting work in comparison to those in the existing work or for making any overhead crossings to underground as per requirement of utility Owning department and/ or construction of project highway. The Contractor shall carry out joint inspection with Utility Owning Department and get the estimates from Utility Owning Department. The assistance of the Authority is limited to giving forwarding letter on the proposal of Contractor to Utility Owning Department whenever asked by the Contractor. The decision/ Approval of utility owning department shall be binding on the Contractor.

- 13.3. The dismantled material/ scrap of existing Utility to be shifted/ dismantled shall belong to the Contractor who would be free to dispose-off the dismantled material as deemed fit by them unless the Contractor is required to deposit the dismantled material to Utility Owning Department as per the norms and practice and, in that case the amount of credit for dismantled material may be availed by the Contractor as per estimate agreed between them.
- 13.4. The utilities shall be handed over after shifting work is completed to Utility Owning Department up to their entire satisfaction. The maintenance liability shall rest with the Utility Owning Department after handing over process is complete as far as utility shifting works are concerned
- 13.5. The supervision charges at the rates / charges applicable of the utility owing department shall be paid directly by the authority to the. utility owing department as and when Contractor furnishes demand of utility owing department along with a copy of estimated cost given by the letter.
- 13.6. Existing lights, junction boxes, connection to individual properties along the affected section shall be disconnected and reconnected as part of utility relocation and the same shall be in the scope of the Contractor.

#### 14. WORK ZONE TRAFFIC MANAGEMENT PLANS ANNEX-II SCHEDULE B- TYPICAL CROSS SECTIONS

The traffic diversion plans shall be prepared as per IRC SP 55 for smooth flow of traffic and safety. A diversion plan shall be proposed for construction of Culvert, Grade Separated Structures, Bridges, RoB/RUB, etc. and traffic management plan for widening/ reconstruction of carriageway.

S. no.	Design chainage		Construction activity	Diversion	Traffic management plan	Barricading (type-III/IV/CC barrier with lighting)	Deployment of flagman in habitation/schools	Remarks
	From	To						
					nil			

#### 15. CHANGE OF SCOPE

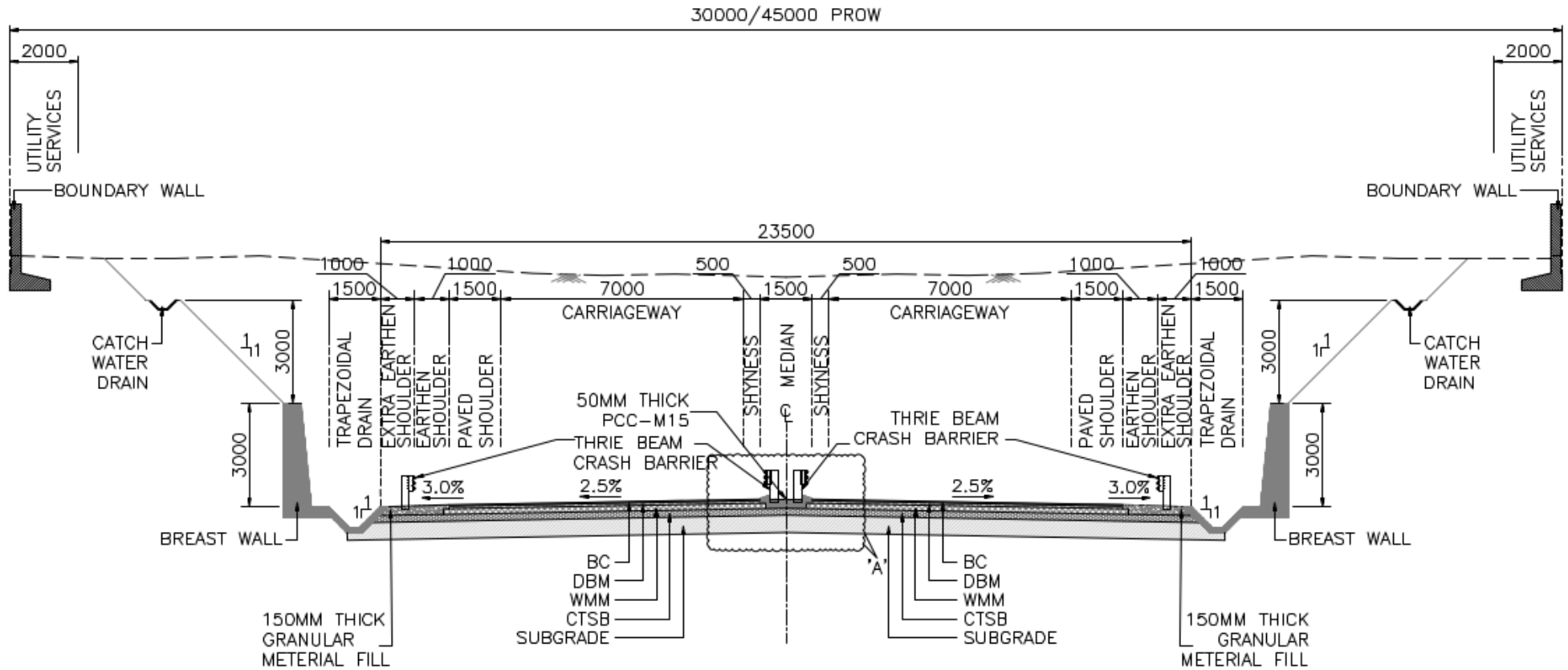
The length of structures and bridges specified hereinabove shall be treated as an approximate assessment. The proposed span arrangement of structures may be changed based on innovative design of structure, latest construction techniques and aesthetics of structures. Actual lengths of structures and bridges as required on the basis of detailed investigations shall be determined by the Contractor in accordance with the Specifications and Standards. Existing water bodies like ponds, lakes etc., which are to be preserved from environment impact mitigation point of view, shall be bridged to the extent of full ponding level at peak rainy season as per requirement of EMP submitted to MoEF at the time of Environmental Clearance. Any variations in the lengths specified in this Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 16.

#### 16. REVIEW OF DESIGN & DRAWINGS AT ANY STAGE

**MORTH** reserves the right to Check/ Verify Design Calculations and Drawings of all components of the Stretch of National Highway including the Structures Falling within the Scope of Work. The Contractor shall be required to furnish all Data pertaining to detailed Designs, Drawings, Calculations, Design Basis Report, Input Files of Design Software used in the Project, etc. to the Authority and/or the Authority Engineer Free of Cost within a time as specified by the Authority and/or the Authority Engineer.



**Annex-II (Schedule B): Typical Cross Sections**

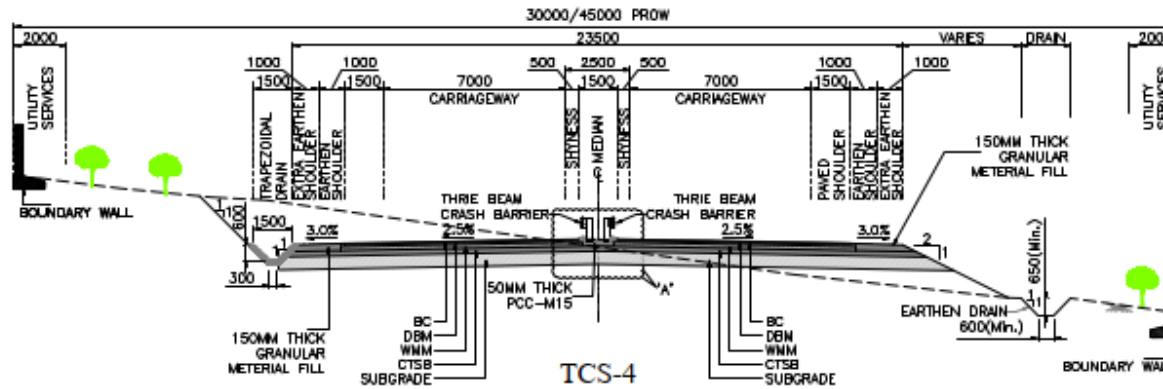


**TCS-3**

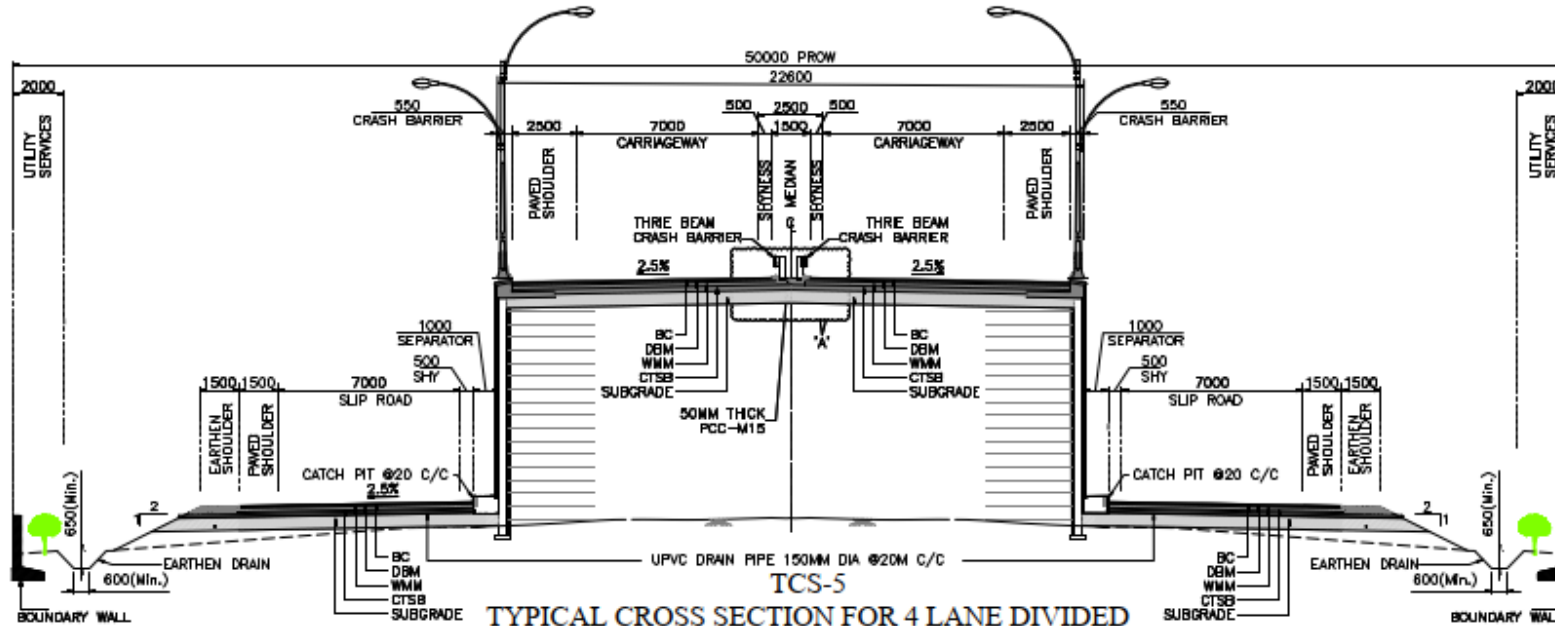
**TYPICAL CROSS SECTION FOR 4 LANE DIVIDED HIGHWAY WITHOUT SERVICE ROAD WITH FLUSH MEDIAN FOR BOX CUTTING**

(4-LANE ROAD WAY WIDTH AS PER CIRCULAR DATED 04/06/2024)

**Annex-II (Schedule B): Typical Cross Sections**



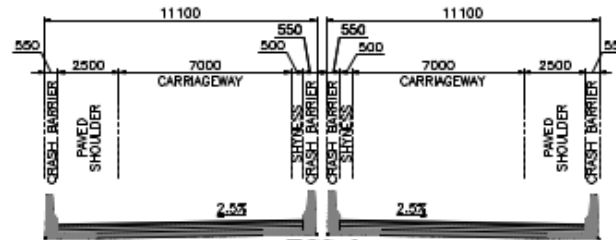
**TCS-4**  
**TYPICAL CROSS SECTION FOR 4 LANE DIVIDED HIGHWAY WITHOUT SERVICE ROAD WITH FLUSH MEDIAN FOR CUT AND FILL**  
 (4-LANE ROAD WAY WIDTH AS PER CIRCULAR DATED 04/06/2024)



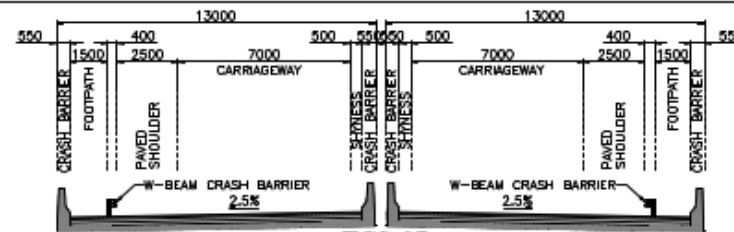
**TCS-5**  
**TYPICAL CROSS SECTION FOR 4 LANE DIVIDED HIGHWAY APPROACH WITH RE WALL AND SLIP ROAD ON BOTH SIDE**  
 (4-LANE ROAD WAY WIDTH AS PER CIRCULAR DATED 04/06/2024)  
 (Km 529+750 to 529+970)

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km)..

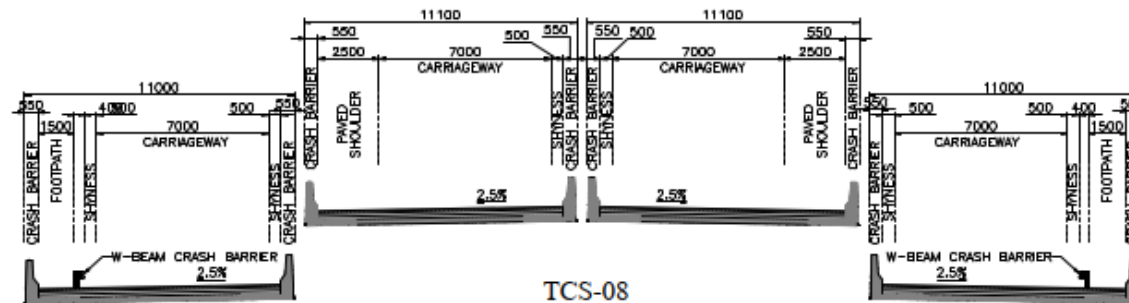
**Annex-II (Schedule B): Typical Cross Sections**



**TCS-6**  
**TYPICAL CROSS SECTION FOR 4 LANE DIVIDED HIGHWAY**  
**AT GRADE SEPARATED DECK LEVEL**  
 (4-LANE ROAD WAY WIDTH AS PER CIRCULAR DATED 04/06/2024)



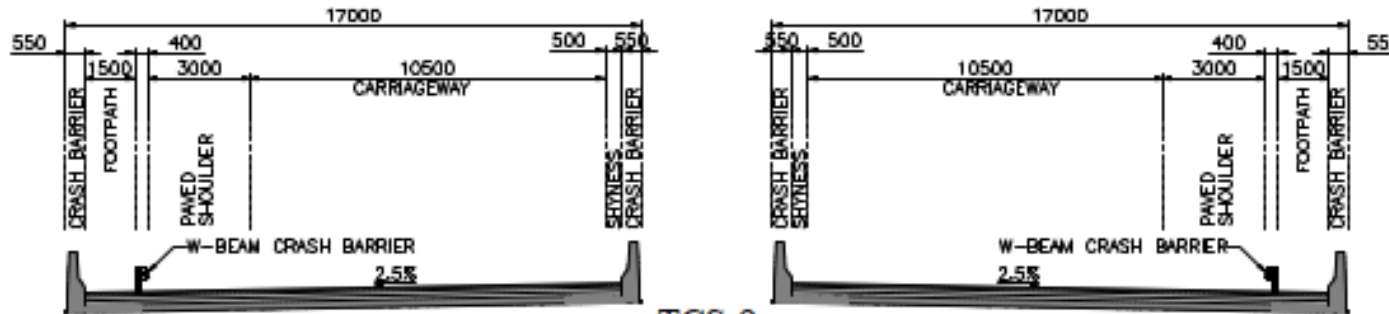
**TCS-07**  
**TYPICAL CROSS SECTION FOR 4 LANE DIVIDED HIGHWAY**  
**AT BRIDGE DECK LEVEL WITH FOOTPATH ON BOTH SIDES**  
 (4-LANE ROAD WAY WIDTH AS PER CIRCULAR DATED 04/06/2024)



**TCS-08**  
**TYPICAL CROSS SECTION FOR 4 LANE DIVIDED HIGHWAY AT MINOR BRIDGE**  
**DECK LEVEL WITH SERVICE ROAD BRIDGES AND FOOTPATH**  
 (4-LANE ROAD WAY WIDTH AS PER CIRCULAR DATED 04/06/2024)

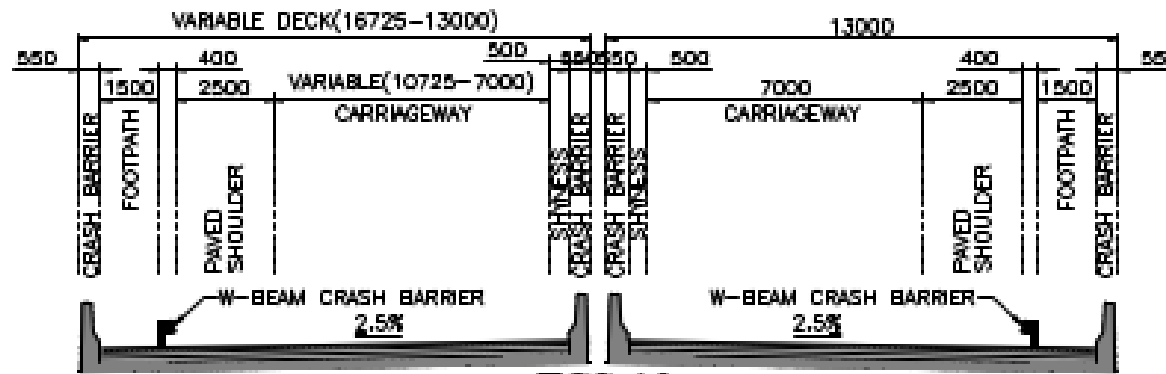
Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km)..

**Annex-II (Schedule B): Typical Cross Sections**



TCS-9

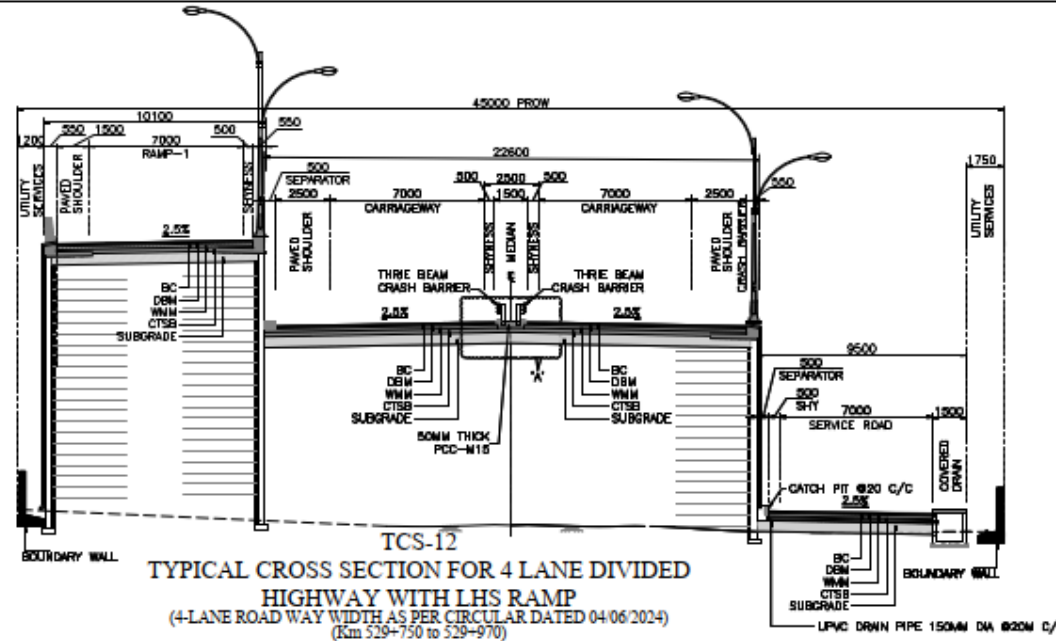
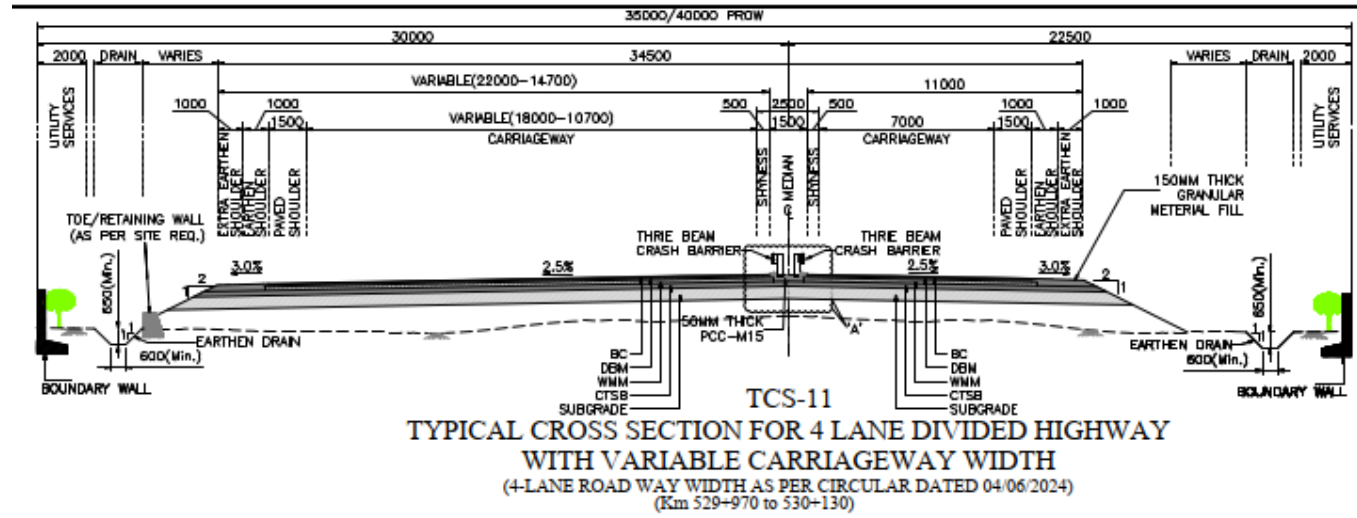
**TYPICAL CROSS SECTION FOR 6 LANE DIVIDED HIGHWAY  
AT ROB DECK LEVEL  
(AS PER RDSO)**



TCS-10

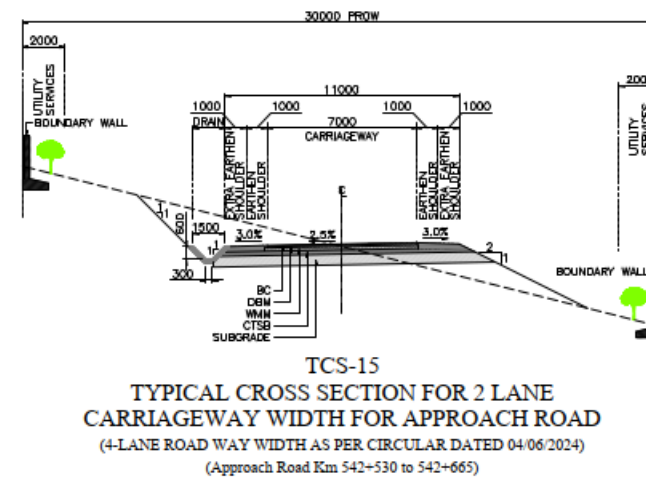
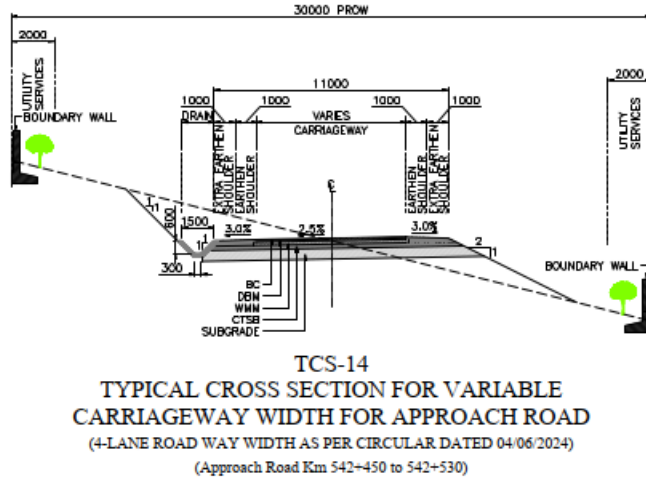
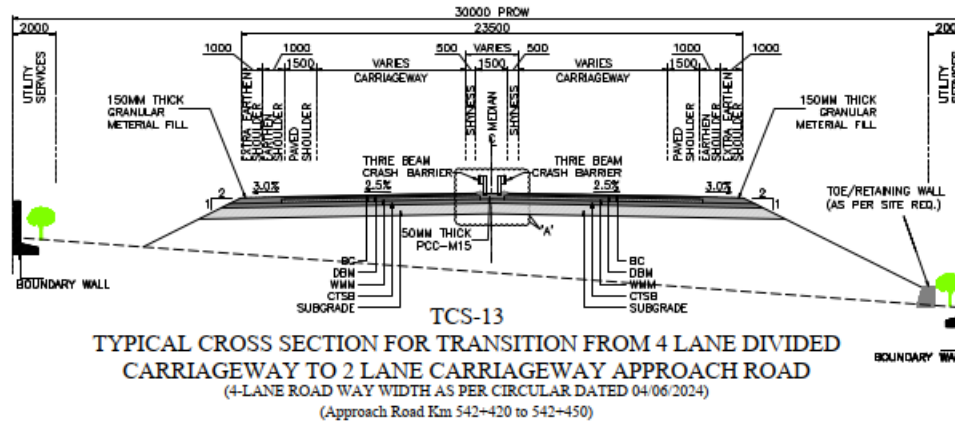
**TYPICAL CROSS SECTION FOR 4 LANE DIVIDED HIGHWAY AT  
MAJOR BRIDGE DECK LEVEL WITH VARIABLE DECK WIDTH  
(4-LANE ROAD WAY WIDTH AS PER CIRCULAR DATED 04/06/2024)**

**Annex-II (Schedule B): Typical Cross Sections**

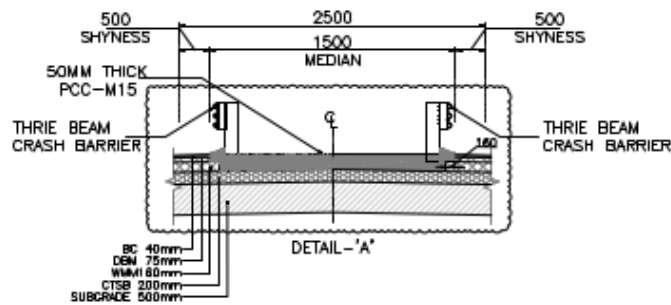
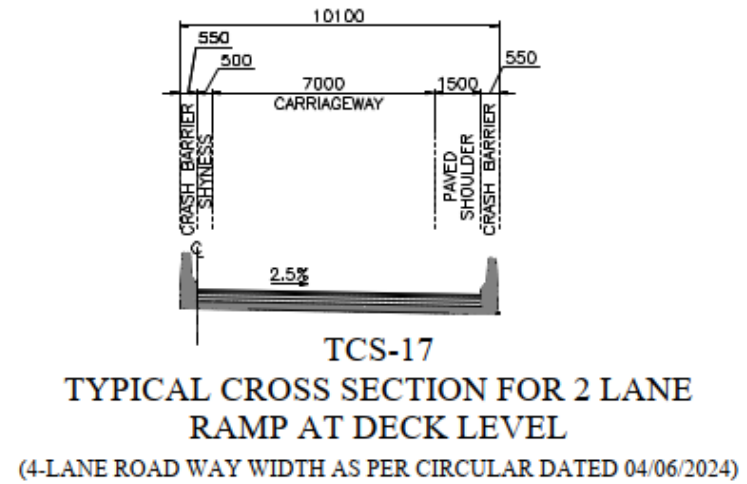
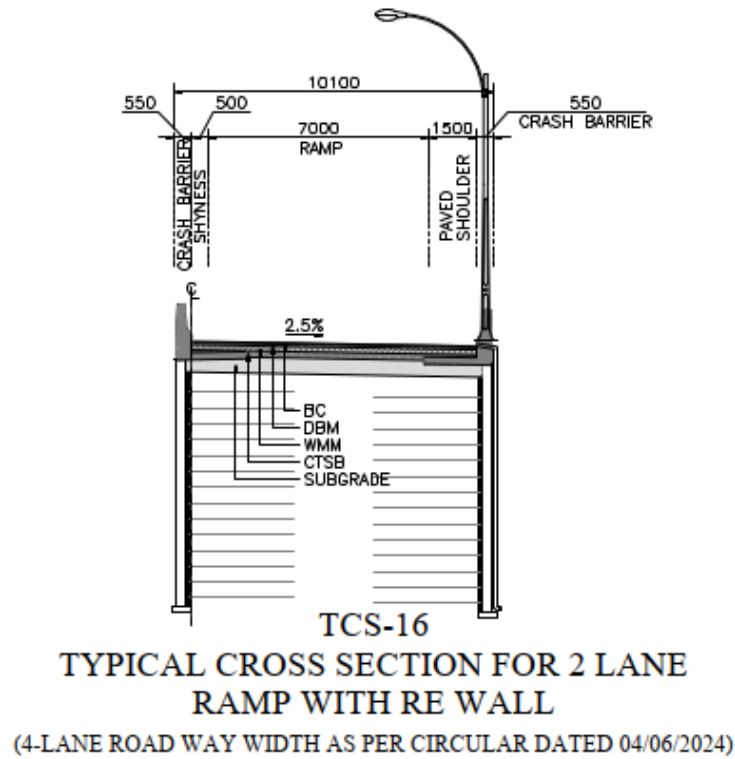


Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km)..

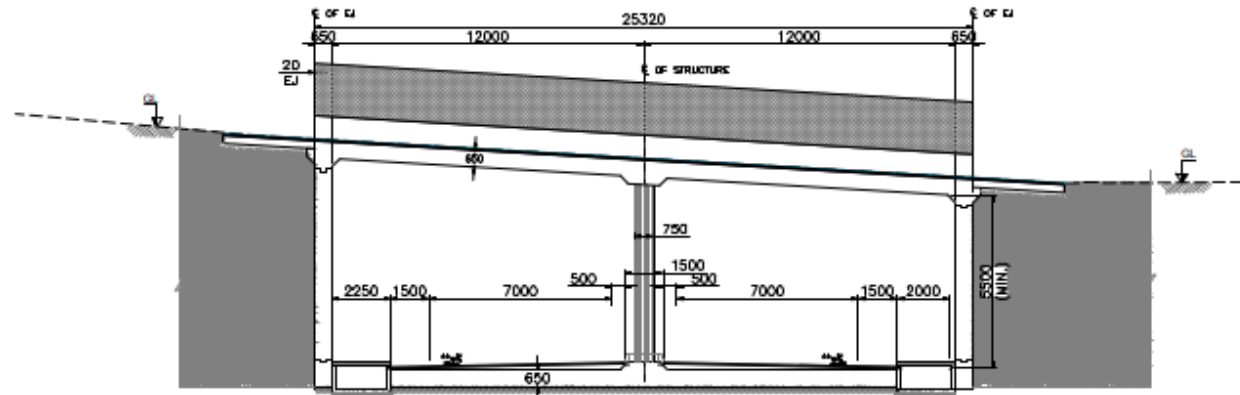
**Annex-II (Schedule B): Typical Cross Sections**



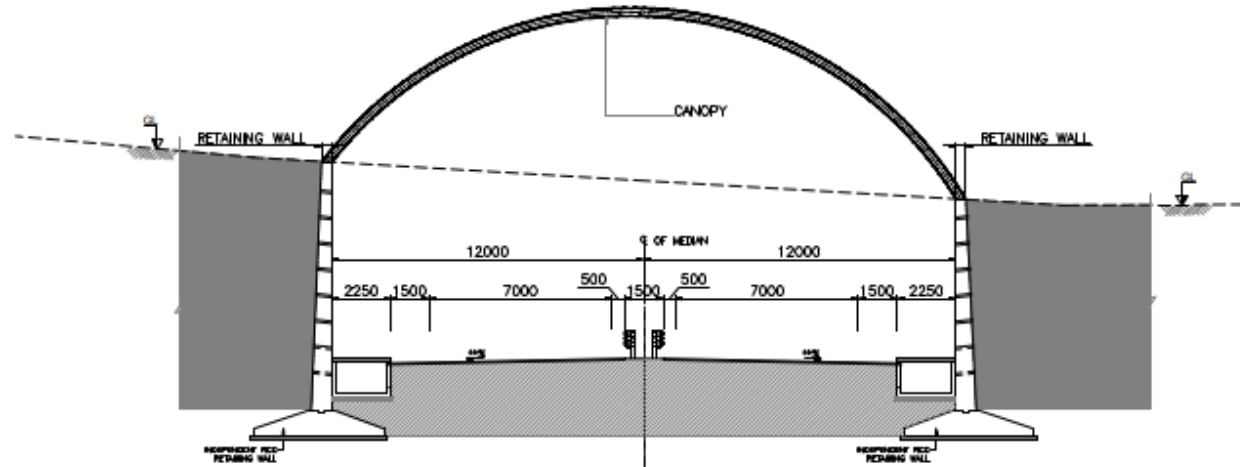
**Annex-II (Schedule B): Typical Cross Sections**



**Annex-II (Schedule B): Typical Cross Sections**



**TCS-18**  
**TYPICAL CROSS SECTION FOR 4 LANE DIVIDED**  
**RCC BOX FOR ACCESS TO HERBAL PARK**



**TCS-19**  
**TYPICAL CROSS SECTION FOR 4 LANE DIVIDED RCC BOX**  
**FOR ACCESS TO HERBAL PARK (APPROACH)**

**SCHEDULE - C***(See Clause 2.1)***PROJECT FACILITIES****1. PROJECT FACILITIES**

The Contractor shall construct the Project Facilities in accordance with the provisions of this Agreement. Such Project Facilities shall include:

- a. Toll Plaza
- b. Road side furniture
  - i. Kilometer and Hectometer Stones
  - ii. Traffic Signs
  - iii. Overhead Signs
  - iv. Road Marking
  - v. Road Delineators
  - vi. Reflective Pavement Markers & Solar Studs
  - vii. Traffic Impact Attenuators
  - viii. Providing End Terminals
  - ix. Boundary wall and Fencing
  - x. Antiglare screen
  - xi. Noise barrier
- c. Operation and Maintenance centers
- d. Way side Amenities / Service Areas
- e. Truck lay-byes
- f. Bus Bay and Bus shelter
- g. Pedestrian Facilities
- h. Highway Lighting
- i. Rainwater Harvesting
- j. Environmental Management Plan
- k. Land Scaping and Tree Plantation
- l. Advanced Traffic Management System (ATMS)
- m. Highway Patrol Units
- n. Emergency medical services
- o. Crane Service
- p. Cattle shed.

- 1.1 Project Facilities to be completed on or before project completion date have been described in Annex-I of this Schedule-C

**Annex - I****(Schedule-C)****Project Facilities****1. PROJECT FACILITIES**

The Contractor shall construct the Project Facilities described in this Annex-I to form part of the Project Highway. The Project Facilities shall include:

- a. Toll Plaza
- b. Road side furniture
  - i. Kilometer and Hectometer Stones
  - ii. Traffic Signs
  - iii. Overhead Signs
  - iv. Road Marking
  - v. Road Delineators
  - vi. Reflective Pavement Markers & Solar Studs
  - vii. Traffic Impact Attenuators
  - viii. Providing End Terminals
  - ix. Boundary wall and Fencing
  - x. Antiglare screen
  - xi. Noise barrier
- c. Operation and Maintenance centers
- d. Way side Amenities / Service Areas
- e. Truck lay-byes
- f. Bus Bay and Bus shelter
- g. Pedestrian Facilities
- h. Highway Lighting
- i. Rainwater Harvesting
- j. Environmental Management Plan
- k. Land Scaping and Tree Plantation
- l. Advanced Traffic Management System (ATMS)
- m. Highway Patrol Units
- n. Emergency medical services
- o. Crane Service
- p. Cattle shed

**2. DESCRIPTION OF PROJECT FACILITIES****2.1 Toll Plaza**

Tolling system shall be provided in entire length of the project and the same is integrated with the adjoining packages. The Toll Plazas shall be provided as per NHAI circular No. 17.5 . 82 dated 24/5/2021 and Schedule D. Minimum Lane requirement in the opening year are as

follows.

Toll Plaza shall be provided confirming to (Clause No. 10.2 IRC: SP: 84-2019 / IRC: SP: 87-2019) at the following locations:

S. no.	Location of toll plaza (km.)		Direction (Entry: to Highway, Exit: from Highway)	Minimum number of toll lanes	
	Existing chainage	Design chainage		Entry	Exit
1		nil			

The sub Items of toll plaza are as follows:

S. no.	Item	Number	Remarks
1	No of toll lanes	nil	
2	Toll booth complex	nil	
3	Weigh bridges	nil	
4	Electrical system	nil	
5	Highway nest with toilet facility	nil	
6	Internet facility	nil	

Note:

- The Toll Plaza shall be constructed as per Manual (Schedule D) considering the modification as per NHAH Circular NHAH/Policy Guidelines/Management of Toll Plaza/2021 Policy Circular No. 17 . 5.82 dated 24th May, 2021 . However, layout as mentioned in Schedule-C shall be followed.
- Based on the toll lanes as given above, toll Booth complex, weigh bridges, electrical systems, and all other facilities required/ mentioned in manual shall be provided as per specification mentioned in Schedule D
- No. of toll lane specified above are to be provided. The Contractor shall design and provide toll lane as per Manual (Schedule D) & NHAH Circular NHAH/Policy Guidelines/Management of Toll Plaza/2021 Policy Circular No. 17.5 . 82 dated 24th May, 2021 subject to as specified above.
- All Toll Lanes to be equipped with Hybrid ETC equipment's as per NHAH/Policy Guidelines/Management of Toll Plaza/2021 Policy Circular No. 17.5 . 82 dated 24th May, 2021. DPR consultant to specify details of equipment's with their numbers. (Clause No. 10.5 IRC: SP: 84-2019 / IRC: SP: 87-2019)
- A separate Highway Nest with toilet facility for road users shall be provided near toll plaza location along with parking facility. One toilet block on each direction shall be provided. These toilet facilities shall follow CPWD specifications for sanitary ware items and fittings such as WC, wash basin, Wash basin-Under counter, Urinal flat back, PVC Cistern, IWC Orissa Pan, Flush Value -CP, Wash Basin pillar cock-GP, Bib Cock-GP, Health Faucet, W/c Bib cock, Wash Basin angle cock. One WC shall be provided for specially challenged persons.
- Point of Sale (POS) with card swapping machines shall be provided.
- Provide Lane markings and Traffic Signs as per IRC: SP: 84-2019 / IRC: SP: 87-2019, IRC 35 and IRC 67 (Clause No. 10.8 & 10.9 of IRC: SP: 84-2019 / IRC: SP: 87-2019)

- h) Solar panels shall be erected over the either on FOB or over Toll plaza/ Admin building to generate the green energy. Same shall be utilized for toll plaza lighting and other energy requirement within toll plaza area along with conventional lighting.
- i) Medium speed Weigh in Motion (MSWIM) devices shall be provided in all toll lanes at Toll plaza Location. In addition to MSWIM, Static weigh Bridge (SWBs) shall be provided on each direction as per manual. (Clause No. 10.6, IRC: SP: 84-2019 / IRC: SP: 87-2019)
- j) Provide impact Attenuators on Toil Plaza islands in the direction of traffic. Impact attenuators shall be self-restoring confirm to section 10.6 of IRC SP 99 i.e. Manual of Specifications and Standards for Expressways. (Clause No9.6, IRC: SP: 84-2019 / IRC: SP: 87-2019)
- k) Provide Staircase on either side of the FoB at Median Island location by widening the island appropriately

## 2.2 Roadside furniture

### 2.2.1 Kilometer and Hectometer Stones (Clause No. 12.3 IRC: SP: 84-2019 / IRC: SP: 87-2019)

S. no.	Item	Number	Remarks
1	Kilometer marker/stone (including 5 <sup>th</sup> kilometer stone)	28	The KM/ Hectometer stones/ marker can be concrete/ stones and shall be placed on both outer de of the earthen shoulder. The size of Kilometer/ 5th Kilometer stone/ Hectometer stone will be as per manual.
2	Hectometer marker/ stone	99	In case KM/ Hectometer marker are to be fixed on separator between Main Carriageway & Service Road then these should be fixed as reflective signs. In case of Access Control Highway/ Expressway, KM/ Hectometer marker should be fixed as reflective sign Km/ Hectometer stones are required to provide on main carriageway and Service Road, both if continuous service road is provided throughout project, length if service road length is more than 1 km.

### 2.2.2 Traffic Signs (Clause No. 9.2 IRC: SP: 84-2019 / IRC: SP: 87-2019)

Traffic Signs include roadside signs, overhead signs and kerb mounted signs etc. shall be provided along the entire Project Highway and on all Side, Roads joining the main carriageway/service road. A QR code shall be marked on back of each sign as per IRC 67.

The traffic sign shall be provided as per Morth policy circular dated 24.12.2024 & NHA Policy Circular no. 12.40/2025 dated 20th Sep 2025. All sign shall be of Micro Prismatic Grade Sheeting Corresponding to Class C sheeting as per ASTM D 4956 .

All shoulder mounted signs shall be supported on GI Pipes minimum diameter of 80mm. Overhead Signs shall be placed on a structurally sound gantry or cantilever structure made of GI pipes. (Clause No. 9.2.4 IRC: SP: 84-2019 / IRC: SP: 87-2019)

On multi lane roads (6 lanes or above), signs shall be mounted overhead. (Clause No. 4.6 of IRC: 67 2022)

The siting of signs shall confirm to Table 4 . 1 and Fig 4.1 of IRC 67. (Clause No. 4.7 IRC: SP: 84-2019 / IRC: SP: 87-2019). The two successive signs shall be placed at a minimum distance of  $0.6 \times V$  metre (V is design speed in Km/h). (Clause No. 4.8 IRC 67 2022).

The overhead gantry signs shall be placed as given below:(Clause No. 16.3.2 of IRC 67 2022)

S.No.	Item	Carriageway (Left, Right, Both)
1	Overhead Gantry signs	4
a	Start of Ramp	1
b	End of Ramp	1
c	Exit of slip road	2
d	Toll plaza location on both side	Nil
2	Overhead Cantilever Gantry signs	3
a	At all major locations of crossroads i.e NH, SH , MDR (start of grade Separated structure/at grade interchange)	3
b	At major trauma center, roads leading to religious places or any other important location	Nil
3.	Double/Butterfly Cantilever	Nil

The detailed minimum number of signages indicating places, direction, distances, and other features shall be marked on the alignment plan and submitted, which are as mentioned below.

S.No.	Road Signs	Number	Remarks
<b>I</b>	<b>Mandatory/Regulatory</b>	-	
1	Stop signs	2	1200 mm octagonal
2	Give Way Signs	6	900 mm triangular
3	Prohibitory signs	-	900 mm Circular
4	No Parking signs	-	900 mm Circular
5	No Stopping signs	-	900 mm Circular
6	Speed Limit signs (Circular) (Fig-14.39)	0	900 mm Circular
7	Speed Limit signs (Vehicle Type) (Fig-14.40a)	-	1140 x 2130
8	Vehicle Control signs	-	
9	Restriction Ends sign	-	
10	Compulsory Direction Control and other signs - keep left	4	900 mm Circular
11	Pass Either side (Fig 14.52)	-	900 mm Circular
12	Height Limit (Fig 14.32)	-	900 mm Circular
<b>II</b>	<b>Cautionary/Warning</b>	-	
1	Left/Right Curve (Fig-15.02)	-	900 mm triangular
2	Left/ Right Curve with side road	-	
3	Right/Left Hairpin Bend	-	
4	Right/Left Reverse Bend	-	

S.No.	Road Signs	Number	Remarks
5	Series of Bends	-	
6	270 Degree Loop	-	
7	Side Road (Fig-15.10)	-	1200 mm triangular
8	Y-intersection	-	
9	Cross Road (Fig-15.14)	-	1200 mm triangular
10	Roundabout	-	1200 mm triangular
11	Traffic Signals	-	
12	T-Intersection	-	
13	Major Road Ahead	-	900 mm Triangular
14	Staggered Inter-section	-	
15	Merging Traffic Ahead (Fig-15.22)	-	1200 mm triangular
16	Narrow Road Ahead	-	
17	Road Widens	-	
18	Narrow Bridge Ahead	-	
20	Steep Ascent/Descent	-	
21	Reduced Carriageway	-	
23	Start /End of Dual Carriageway	-	
24	Gap in Median	-	
25	Pedestrian Crossing (Fig-15.33)	-	900 mm triangular
26	Pedestrian crossing with backing board	-	
27	School Ahead	-	
28	Built Up Area	-	
29	Two Way Operation (on main carriage way /service road)	-	
30	Two Way Traffic on Cross Road Ahead	-	
31	Danger Warning Sign	-	
32	Deaf or Blind Persons Likely on Road Ahead	-	
33	Cycle Crossing	-	
34	Cycle Route Ahead (Warning for Cycles on road ahead)	-	
35	Dangerous Dip	-	
36	Speed Breaker	-	
37	Rumble Strip (Fig-15.50)	-	1200 mm Triangular
38	Rough Road	-	
39	Dangerous Ditch	-	
40	Slippery Road	-	
41	Slippery Road because of Ice	-	
42	Opening or Swing Bridge	-	
43	Overhead Cable	-	1200 mm triangular
44	Play Ground Ahead	-	

S.No.	Road Signs	Number	Remarks
45	Quay Side or River Bank	-	
46	Sudden Side Winds	-	
47	Tunnel Ahead Warning	-	
48	Falling Rocks	-	
49	Cattle Crossing	-	
50	Wild Animals likely to be on Road Ahead	-	
51	Queues Likely Ahead	-	
52	Low flying Air Craft	-	
53	Unguarded Railway Crossing	-	
54	Guarded Railway Crossing	-	
55	Crash prone area ahead	-	
56	U- Turn (Fig-17.09)	-	600 x 800
<b>III</b>	<b>Chevron Signs</b>	-	
1	Single Chevron (Fig.-15.74)	89	500 x 600
2	Double Chevron	-	
3	Triple Chevron	-	
<b>IV</b>	<b>Object Hazard Marker Sign</b>	-	
1	Left /Right side Object Hazard Marker (Fig-15.78 & 15.79)	36.0	300 x 900
2	Two-way Object Hazard Marker (Fig-15.80)	-	450 x 900
	Triple Chevron Marker (At roundabout)	-	600 x 2300
<b>V</b>	<b>Informatory/ Guide</b>	-	
1	Direction and Place Identification signs	-	
2	Stack Type Advance Direction Sign (Shoulder Mounted) (Fig-16.01)	4	3000 x 4000
3	Stack Type Advance Direction Sign with cautionary / regulatory signs (Shoulder Mounted)	-	
4	Map Type Advance Direction Sign (Shoulder Mounted)	-	
5	Map Type Advance Direction Sign for roundabout (Shoulder Mounted)	6	3000 x 4000
6	Flag Type Direction Sign (Fig-16.04)	10	1500 x 1800
7	Reassurance Sign (Fig-16.05)	6	3000 x 4000
8	Place Identification Sign	-	1200 x 2500
9	Truck Lay -Bye (Fig-16.07)	-	900 x 1800
10	Toll Booth Ahead (Fig-16.08) - cantilever gantry	-	1800 x 3000
11	Weigh Bridge Ahead (Fig.-16.09) - cantilever gantry	-	1800 x 3000
12	Shoulder Mounted Sign in Advance of a Grade Separated Junction/ Interchange	-	3000 x 4000
13	Expressway Sign	-	

S.No.	Road Signs	Number	Remarks
14	Gantry Mounted advance Direction/ Reassurance Sign Ahead of a Flyover in Urban/City Roads (Fig 4.4)	4	1800 x 15000
15	Cantilever Gantry Mounted advance Direction Sign Ahead Instead of of a Grade Separated Junction	-	1800 x 5500
16	Lane Dedicated Gantry Sign	-	
17	Definition/Supplementary Plates	-	
18	Tourism Related Sign	-	
19	Tourist Destination Direction Information Signs Without Photograph	-	
20	Tourist Destination Direction Information Signs With Photograph	-	
21	Finger Destination direction Information Sign for Pedestrians	-	
22	Tourist Map Information Sign	-	
23	Boundary sign at Entrance to a City/Place	-	
24	Boundary sign at Entrance to a Tourist Destination	-	
<b>VI</b>	<b>Facility Information Signs</b>	-	
1	Eating Place	-	600 x 800
2	Light Refreshment	-	600 x 800
3	Resting Place	-	600 x 800
4	First Aid Post	-	600 x 800
5	Toilet	-	600 x 800
6	Filling Station(Fuel Pump)	-	600 x 800
7	Hospital	-	
9	U-Turn Ahead	-	
10	Pedestrian Subway	-	
11	Police Station	-	
12	Picnic Site	-	
13	Repair Facility	-	
14	Railway Station/Metro Station/Monorail station	-	
15	Industrial Area	-	
16	Cycle Rickshaw Stand	-	
17	Taxi Stand	-	
18	Auto Rickshaw Stand	-	
20	Home Zone	-	
21	Camp Site	-	
23	Airport	-	
24	Golf Course	-	
25	National Heritage	-	

S.No.	Road Signs	Number	Remarks
26	No Through Road	-	
27	No Through Side Road	-	
28	Toll Road Ahead	-	
29	Guide Sign on Toll Lane Portal	-	
30	Country Border	-	
31	Entry Ramp for Expressway (Fig.-17.31)	-	600 x 800
32	Exit Ramp for Expressway (Fig.-17.32)	-	600 x 800
33	Bus Stop	8	600 x 800
34	Bus Lane	-	
35	Contra Flow Bus Lane	-	
36	Cycle Lane	-	
37	Contra Flow Cycle Lane	-	
38	Holiday Chalets	-	
39	Emergency Exit	-	
<b>VII</b>	<b>Other Useful Information Signs</b>	-	
1	Signs For Persons With Disabilities	-	
2	International symbol of Accessibility	-	
3	Parking Information	-	
4	Parking Areas	-	
5	Ramped Entrance to Subway/Over Bridge	-	
6	Telephone Facilities	-	
7	Toilet Facilities	-	
8	Way Finding	-	
9	Parking Signs	-	
10	Auto Rickshaw Parking	-	
11	Cycle Parking	-	
12	Cycle Rickshaw Parking	-	
13	Scooter and Motorcycle Parking	-	
14	Taxi Parking	-	
15	Park and Ride	-	
16	Parking Restrictions Signs for Traffic Management	-	
17	Flood Gauge Sign	-	
<b>VIII</b>	<b>Route Maker Signs</b>	-	
1	State Highway Route Marker Sign	-	
2	National Highway Route Marker Sign (Fig.-22.02)	4	600 x 800
3	Asian Highway Route Marker Sign	-	
4	Expressway Route Marker Sign	-	

Note: The locations of the placement of signages shall be finalized in consultation with Authority Engineer, as per site requirement.

### 2.2.3 Road Marking

Road Markings shall be Hot applied thermoplastic materials with reflectorized beads to achieve visibility confirming to clause 2.7.2 of IRC 35. (Clause No. 2.2 IRC: 35)

The cold applied plastics pavement markings shall be used for School Zone Markings, Audible Raised Profile Edge Lines and Block Markings (BM 01/02/03)/Transverse bar Markings.

Width of all kind of road marking shall be of minimum 150mm.. (Clause No. 2.4 of IRC: 35)

The detailed minimum requirement of the road marking on the project highway shall be as mentioned below:

S. No.	Item	Unit		Remarks
		Length/area	Number	
1	Chevron Marking		-	
2	Transverse Marking		-	
3	Hazard Marking		NIL	
4	Block Marking	35 sqm		
5	Directional; Arrow Marking and lettering		NIL	
6	Directional Marking		NIL	
7	Facility Marking		NIL	
8	Center Line	1088 sqm	NIL	
9	Traffic Lane Lines	-		
10	No Overtaking Lines	-	NA	
11	Warning Lines		NIL	
12	Border or Edge Lines	10260 sqm		
13	Longitudinal Markings for Undivided Roads		NIL	

### 2.2.4 Road Delineators (Clause No. 9.4 IRC: SP: 84-2019 / IRC: SP: 87-2019)

Road Markings shall be Hot applied thermoplastic materials with reflectorized beads to achieve visibility confirming to clause 2.7.2 of IRC 35. (Clause No. 2.2 IRC: 35)

S. no.	Item	Number/Length (m)	Remarks
1	Roadway indicator	Entire length of project highway	
2	Median Marker on Median/RCC Barrier (Clause 4 of IRC 79 2019)		
3	Object marker		
4	Flexible Object Markers (Clause 6 of IRC 79 2019)		
i	On Metal Beam Barrier		
ii	On Toll Booth/Toll Island		
iii	On Entry/Exit of Tunnel		

S. no.	Item	Number/Length (m)	Remarks
iv	On Exit from Main carriageway		
5	Solar Blinkers on Median Opening, on exit from main carriageway and traffic islands of separated intersections.	3 nos of Exit location from main carriageway	

Note: The locations of the marking shall be finalized in consultation with Authority Engineer/MORTH, as per site requirement

### 2.2.5 Reflective Pavement Markers & Solar Studs

The Prismatic Retro-Reflective type conforming to ASTM D-4280 Pavement Markers & Solar Power Studs on Highway shall be provided in accordance with Schedule – D.

S. No.	Item	Number	Location	Remarks
<b>A. — For 4/6 Lane Projects</b>				
1	White Colour one coloured face Road Studs	-	Traffic lane line & center of carriageway	Uni-directional carriageway
2	Red Colour one coloured face Road Studs		Left hand edge of the carriageway, entry & Exit, start of service road, chevron/diagonal markings on gorge Median side edge line, zebra crossing	
	Solar Type	4092		
	Normal Type	1062		
3	Yellow / Amber Colour one coloured face Road Studs	-		
4	Green Colour one coloured face Road Studs	-		Lay byes, left hand side of the carriageway in case of multi-lane divided carriageways, crossable continuous line like in acceleration/deceleration lanes involving lane

### 2.2.6 Traffic Impact Attenuators

The Prismatic Retro-Reflective type conforming to ASTM D-4280 Pavement Markers & Solar Power Studs on Highway shall be provided in accordance with Schedule – D.

(a) Provide Impact Attenuators in Gore Areas at following locations:

S. no.	Item	Chainage / Number	Remarks
1	On flyover/grade separated structure at exit from main carriageway	-	

S. no.	Item	Chainage / Number	Remarks
2	On Island of Toll Plaza	-	
3	Any other location which Safety Hazard	-	

(b) Providing End Terminals:

Provide End Terminals P-4 type confirming to EN 1317-4 to Parapet Walls of Culverts, Structures ends for the safety of approaching traffic etc.

S. no.	Item	Chainage / Number	Remarks
1	Culvert Ends	Nil	
2	Structures Ends	Nil	
3	Any other location which Safety Hazard	Nil	

### 2.2.7 Boundary wall (Clause No. 12.2 IRC: SP: 84-2019 / IRC: SP: 87-2019) -

Minimum length of Row boundary wall is 15324m.

Boundary wall shall be provided along the entire length on either side (including transverse requirements at structure locations) as per the detail given below in accordance with IRC: SP:84/87. Road boundary walls shall be provided at the boundary on both sides of the right of way available under the control of the Authority, except at ingress and egress points. The boundary walls shall be of reinforced cement concrete as per figure enclosed as **Annex II Schedule-C ( as per Morth circular RW/NH-24036/27/2010-PPP dated 4<sup>th</sup> Feb 2019)**.

At all CD structure locations, the boundary wall shall be discontinued by turning and joining it with the wing/return wall to allow crossing through these structures during dry seasons.

S. no.	Chainage		Length (m)	Side	Remarks (Boundary wall/Toewall)
	from	To			
<b>A</b>	<b>Main carriageway</b>				
1	529+750	529+970	220	Both sides	Boundary wall
2	529+970	530+130	160	Both sides	Boundary wall
3	530+530	530+580	50	Both sides	Boundary wall
4	530+580	530+730	150	Both sides	Boundary wall
5	530+730	530+960	230	Both sides	Boundary wall
6	530+960	531+000	40	Both sides	Boundary wall
7	531+200	531+300	100	Both sides	Boundary wall
8	531+300	531+500	200	Both sides	Boundary wall
9	531+500	531+830	330	Both sides	Boundary wall
10	531+910	531+940	30	Both sides	Boundary wall
11	531+940	532+120	173	Both sides	Boundary wall
12	532+120	532+300	180	Both sides	Boundary wall
13	532+300	532+380	80	Both sides	Boundary wall
14	532+380	532+430	50	Both sides	Boundary wall

S. no.	Chainage		Length (m)	Side	Remarks (Boundary wall/Toewall)
	from	To			
15	532+430	532+570	140	Both sides	Boundary wall
16	532+570	532+600	30	Both sides	Boundary wall
17	532+600	532+710	110	Both sides	Boundary wall
18	532+710	533+270	550	Both sides	10 m less due to structure
19	536+310	536+610	300	Both sides	Boundary wall
20	536+610	537+030	420	Both sides	Boundary wall
21	537+030	537+610	580	Both sides	Boundary wall
22	537+610	537+660	50	Both sides	Boundary wall
23	537+660	537+770	110	Both sides	Boundary wall
24	537+770	538+500	730	Both sides	Boundary wall
25	538+500	539+000	500	Both sides	Boundary wall
26	539+590	539+820	230	Both sides	Boundary wall
27	539+820	539+950	130	Both sides	Boundary wall
28	539+950	540+056	106	Both sides	Boundary wall
29	540+374	540+470	96	Both sides	Boundary wall
30	540+470	540+560	78	Both sides	12 m less due to structure
31	540+560	540+640	80	Both sides	Boundary wall
32	540+640	540+840	200	Both sides	Boundary wall
33	540+840	540+890	40	Both sides	10 m less due to structure
34	540+890	540+950	60	Both sides	Boundary wall
35	540+950	540+980	30	Both sides	Boundary wall
36	541+220	541+310	90	Both sides	Boundary wall
37	541+310	541+400	90	Both sides	Boundary wall
38	541+400	541+450	50	Both sides	Boundary wall
39	541+450	541+570	120	Both sides	Boundary wall
40	541+570	541+610	40	Both sides	Boundary wall
41	541+700	541+760	60	Both sides	Boundary wall
42	541+760	541+960	200	Both sides	Boundary wall
43	541+960	542+130	50	Both sides	120 m less due to structure
44	542+130	542+150	10	Both sides	10 m less due to structure
45	542+150	542+170	20	Both sides	Boundary wall
46	542+170	542+270	100	Both sides	Boundary wall
47	542+270	542+285	15	Both sides	Boundary wall
48	542+410	542+420	10	Both sides	Boundary wall
49	542+420	542+465	45	Both sides	Boundary wall
50	542+465	542+530	65	Both sides	Boundary wall
51	542+530	542+664	134	Both sides	Boundary wall
	<b>Sub total</b>		<b>7662</b>		

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**C.229**

**2.2.8 Road Boundary stone (Clause No. 12.2 IRC: SP: 84-2019 / IRC: SP: 87-2019) - nil****2.2.9 Anti-glare at Median (Clause No. 2.5.6 IRC: SP: 84-2019 / IRC: SP: 87-2019)**

Suitable Anti glare measures such as plastic screens shall be provided at the center of median to reduce head light glare from opposite traffic. The total height of screen including the height of barrier shall be 1.5m high.

**2.3 Operation and Maintenance centers (Clause No.12.15 IRC: SP: 84-2019 )**

There shall be operation and maintenance center(s) as per Clause 12.15 of Schedule-D, either near the toll plaza location or at any other location along the Project Highway, as identified by the Concessionaire. The minimum land for O & M center shall be 2000 sq.m and shall be acquired by the Concessionaire at his own cost and risk. Dedicated operation and maintenance center shall be provided in accordance to Schedule D.

There is no provision of operation and maintenance center for the instant project.

**2.4 Wayside Amenities/ Service Areas/Rest Area (Clause No. 12.9 IRC: SP: 84-2019 / Clause No. 12.8 IRC: SP: 87-2019)**

S. no.	Item	Existing Chainage	Side	Remarks
		Nil		

**2.5 Truck lay-byes: (Clause No. 12.6 IRC: SP: 84-2019 / IRC: SP: 87-2019)**

The truck lay-bye shall be provided at below given location and as per the design mentioned in Schedule-D.

S. no.	Design Chainage	Side	Remarks
		Nil	

Toilet block along with Janitor room on each Truck Lay bye shall be provided. The toilet block shall consist of at least 1 block for bathing, at least 2 fixtures each for urinals, WC and wash basin. There shall be 24 hour lighting facility in toilet block. These toilets facilities must be functional round the clock including proper maintenance. For arrangement of water, 1 no. of boring along with water pump shall be provided to keep the toilet clean. For upkeep and maintenance of Toilet, 3 Safai wale (1 in each 8 hour shift) shall be engaged and is in the scope throughout contract period.

The truck lay-bye pavement - Provide pavement composition (Flexible/Rigid/ Paver Blocks) as follows:

Pavement composition (Flexible/ Rigid/Paver block)
Same as of Main carriageway

**2.6 Bus Bay and Bus shelter: (Clause No. 12.7 IRC: SP: 84-2019 / IRC: SP: 87-2019)**

Provision of Busbay and bus shelter on highways as per IRC 80 : 2022 including paving of layby, signs, markings, speed calming measures, drainage, lighting etc., in builtup areas, intersections of NH/SH/MDR and roads leading to large settlements is as follows:.

S. no.	Chainage	Sides	Remarks	No Of Shelter
1	Rotary junction at km. 539+050	LHS	Bus shelter only	1

S. no.	Chainage	Sides	Remarks	No Of Shelter
2	Rotary junction at km. 539+050	RHS	Bus shelter only	1
3	Rotary junction at km. 541+065	RHS	Bus shelter only	1
4	Rotary junction at km. 541+065	RHS	Bus shelter only	1

a) Bus Bays : with tapers shall be provided along with passenger's shelters shall be constructed at the following locations:

S. no.	Design Chainage	Entry taper length	Bus bay length	Exit taper length	Remarks
Nil					

b) Kerb Side Bus Stop with Pedestrian shelter shall be provided at the following locations.

S. no.	Design Chainage		Pedestrian shelter length (m)	Remarks
	Left	Right		
Nil				

c) Bus bay pavement - Provide pavement composition (Flexible/Rigid/ Paver Blocks) as follows:

Pavement composition (Flexible/ Rigid/Paver block)
nil

## 2.7 Pedestrian Facilities (Clause No. 9.8 IRC: SP: 84-2019 / IRC: SP: 87-2019)

Pedestrian Facilities shall be provided in accordance with the Manual of Specifications and Standards as referred in Clause 9.8 of Schedule D and IRC 103 2022. This shall consist of footpath (sidewalks), pedestrian guard rails and pedestrian crossing.

The details are as mentioned below:

S. no.	Pedestrian facilities	Design Chainage		Side	Remarks
		Left	Right		
1	Pedestrian guardrails shall be 150 mm from Carriageway/Paved Shoulder i. Hazardous Locations on Straight Stretches ii. At Junctions/Intersections iii. Schools iv. Bus Stop/Railway Stations v. Overpass, Subway vi. Central Reserve	On Major bridge, minor bridge and ROB structures	On Major bridge, minor bridge and ROB structures	both	
2	Footpath paving including fixing of pavers block	-	-	Nil	-
		-	-	Nil	-
3	Pedestrian Crossing i. With Zebra Marking ii. With Tabletop Crossing iii. At Intersections iv. At Schools	As per alignment plan	As per alignment plan		

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**C.231**

**2.8 Highway Lighting (Clause No. 12.5 IRC: SP: 84-2019 / IRC: SP: 87-2019)**

The street light poles shall be 1 piece, continuous-tapered, Octagonal poles and shall be manufactured from one length of steel sheet, formed in continuous tapered tube, with one continuous arc-welded vertical seam. The minimum wall thickness for lighting poles shall not be less than 4 mm. The Bottom Diameter shall be minimum 175 mm. The Top Diameter shall be minimum 75 mm. The door on window of pole shall be antitheft. All electrical cable should be concealed. All electrical lighting fixers shall be LED. The fixtures shall be concealed except on poles. Lighting poles shall be fixed on outer side of steel/concrete barrier. The lighting shall be providing at the following locations:.

S. no.	Chainage		Length (m)	TCS	Highway lighting (no)	
	From	To			Double arm	Single arm
<b>A.</b>	<b>Main Carriageway, ramps and slip road</b>					
1	529+750	529+970	220	TCS-12	15	-
2	530+290	530+530	240	TCS-7	16	-
3	530+730	530+960	230	TCS-3	15	-
4	531+000	531+200	200	TCS-7	13	-
5	531+830	531+910	80	TCS-7	5	-
6	533+270	536+310	3040	TCS-7	203	-
7	538+500	539+000	500	TCS-5	33	-
8	539+000	539+100	100	TCS-6	7	-
9	539+100	539+430	330	TCS-8	22	-
10	539+430	539+590	160	TCS-7	11	-
11	540+056	540+374	318	TCS-9	21	-
12	540+470	540+560	90	TCS-3	5	-
13	540+640	540+840	200	TCS-3	13	-
14	540+890	540+950	60	TCS-3	4	-
15	540+980	541+220	240	TCS-7	16	-
16	541+310	541+400	90	TCS-3	6	-
17	541+450	541+570	120	TCS-3	8	-
18	541+960	542+130	170	TCS-3	3	-
19	542+170	542+270	100	TCS-3	7	-
20	542+285	542+410	125	TCS-7	8	-
<b>B.</b>	<b>Trumpet Interchange A at Ch. 529+750</b>					
1	529+970/ 0+000 Ramp-1	529+750/0+230 Ramp-1	230	TCS-12		8
2	0+230 ramp-1	0+864 ramp-1	634	TCS-17		21
3	0+864 ramp-1	1+270 ramp-1	406	TCS-16		14

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km).

**C.232**

S. no.	Chainage		Length (m)	TCS	Highway lighting (no)	
	From	To			Double arm	Single arm
4	529+750/ 0+000 Ramp-2	0+150 Ramp-2	150	TCS-16		5
5	529+750/ 0+000 Ramp-3	0+215 Ramp-3	215	TCS-16		7
				<b>Sub total</b>	<b>432</b>	<b>55</b>

In addition, high mast light shall be provided minimum of NIL nos.

## 2.9 Rainwater Harvesting.

The provision of rainwater harvesting shall be provided at every 1000m staggered in the entire project length and shall be executed as per requirement of IRC SP: 42-2014 and IRC SP: 50-2013. Additionally, wherever urban drains are provided, which do not have a definite outfall for discharge of water, at such location one pit for rainwater harvesting shall be provided along the side drains at the lowest point/ where the water stagnates. The type and location of rainwater harvesting is as follows:

Sl. No.	Rainwater Harvesting Type	Number	Depth of Recharge Structure
1	Type 1 confirming to clause 10.7.2 of IRC SP 42	6	3m
2	Type 2 confirming to clause 10.7.3 of IRC SP 42	Nil	-
3	Type 3 confirming to clause 10.7.4 of IRC SP 42	Nil	-
4	Type 4 confirming to clause 10.7.5 of IRC SP 42	Nil	-

## 2.10 Environmental Management Plan

The Contractor shall implement the Environmental Management plan & action Plan for undertaking possible mitigation measures in accordance with environmental clearance accorded by Ministry of Environment and Forests and climate change. The conditions & directions stipulated by the MOEF shall be complied by the Contractor.

The Contractor shall implement the mitigation measures of the approved Environmental Management Plan (EMP) based on Environment Impact Assessment (EIA) and conditions of the Environmental Clearance accorded by the Ministry of Environment, Forests and Climate Change. All the conditions and directions stipulated by the MoEF&CC shall be complied by the Contractor.

The Concessionaire/ Contractor also shall implement the approved mitigation measures including Wildlife Mitigation measures and conditions as per Forest and Wildlife Clearance accorded by the Ministry of Environment, Forests and Climate Change. All the conditions and directions stipulated by the MoEF&CC shall be complied by the Contractor.

The Concessionaire/ Contractor shall also implement the approved mitigation measures of the

Environmental Management Plan (EMP) for the project.

### 2.11 Land Scaping and Tree Plantation (Section 11 of IRC SP 84 2019)

The Contractor shall plant trees and shrubs of required numbers and types at the appropriate locations within Right of Way and in the land earmarked by the Authority for afforestation as per Schedule D at the following areas.

Sl. No.	Types of Plantations	Location (Km)	Number of trees to be planted	Remarks
1	Shrubs	In median except Structures+ Frist row from side of drain	nil 1 row of plants for the median of 2-3 metre at every km. and 2 rows of plants (staggered) for the median of 3 metre and more	Ornamental type plantation shall be provided
2	Landscaping	O & M Centres, Vacant land parcels, Toll Plaza building and surroundings Vacant space below the flyovers	Landscaping plans shall be submitted by the Contractor/Contractor which shall include ornamental trees, decorative statues and landscaping	The number of Ornamental type plantation and other things shall be decided on the basis availability of land.
3	Plantations	Available open land within ROW	Minimum 1245 nos. of trees of desired type in one row as per availability of RoW @ 10 m c/c near edge of ROW on both sides (As per Schedule D)	Preferably local varieties like mango, Neem, Sheesham, Babul, Peepal etc. shall be planted

Drip irrigation system for median plantation by gravity/pressure sources with all necessary components / systems and emitting devices at plants shall be provided.

The Contractor shall maintain the trees and shrubs in good condition during concession period as per the concession agreement.

**2.12 Advanced Traffic Management System (ATMS) (NHA Policy Circular No 11.53/2023 dated 10th October 2023) – Nil.**

**2.13 Highway Patrol Units (Clause No. 12.10 IRC: SP: 84-2019 / IRC: SP: 87-2019) – Nil**

**2.14 Emergency medical services (Clause No. 12.11 IRC: SP: 84-2019 / IRC: SP: 87-2019) – Nil**

**2.15 Crane Service: (Clause No. 12.12 IRC: SP: 84-2019 / IRC: SP: 87-2019) – Nil**

**2.16 Cattle Shelter :** Cattle Shelter should be provided at following locations along the Project Highway ( As per NHA Policy Circular 11.65/2025 date 25.02.2025):

{\*Minimum 1 Acre land to be reserved in PROW to develop gaushala premises for catering 100 Cows as per Indian Council of Agriculture Reserach}

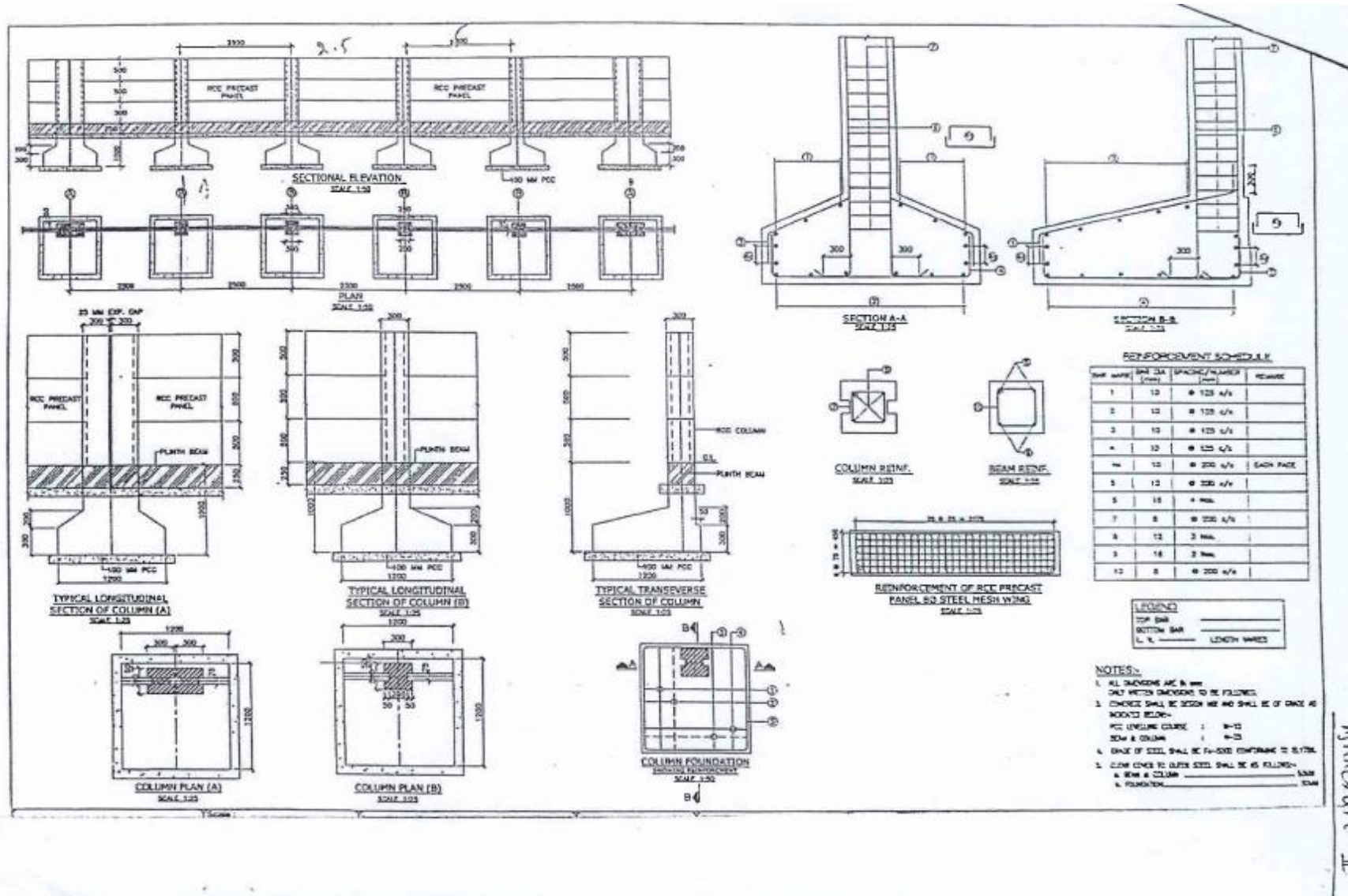
Notes:

-Construction, operation, and maintenance of the Cattle shelter shall be as per the guidelines issued by the Department of Animal Husbandry, Local Administration, or any other relevant authorities viz.

-The construction and associated services of the Cattle-shelters are to be carried out as part of the Corporate Social Responsibility (CSR) initiative by the Concessionaire/contractor.

-Ramp Facilities shall be provided for the safe loading and unloading of injured cattle into and off vehicles and provision of one Cattle Ambulance service to be kept for transporting injured cattle to veterinary care center

Annex II - ( as per Morth circular RW/NH-24036/27/2010-PPP dated 4<sup>th</sup> Feb 2019)



**SCHEDULE – D**

(See Clause 2.1)

**SPECIFICATIONS AND STANDARDS**

**1. CONSTRUCTION**

The Contractor shall comply with the Specifications and Standards set forth in Annex-I of this Schedule-D for construction of the Project Highway.

**2. DESIGN STANDARDS**

The Project Highway including Project Facilities shall conform to design requirements set out in the following documents:

Manual of Standards and Specifications for Four Laning of Highways through Public Private Participation published by the Indian Roads Congress (IRC: SP: 84-2019 / IRC: SP: 87-2019), and shall be referred as 'Manual'.

**3.** As regards, the work of utility shifting, the relevant specifications, relevant rules, regulations and acts of Utility Owning Department/Agencies shall be applicable.

**Annex - I**  
**(Schedule-D)**

**Specifications and Standards**

**1. SPECIFICATIONS AND STANDARDS**

All Materials, works and construction operations shall conform to the Manual of Specifications and Standards for four Lane Highways (IRC: SP: 84-2019 / IRC: SP: 87-2019) referred to as the Manual, and MORTH Specifications for Road and Bridge Works (fifth revision). Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Authority's Engineer.

**2. DEVIATIONS FROM THE SPECIFICATIONS AND STANDARDS**

2.1 The terms "Contractor", "Authority Engineer" and "Concession Agreement" used in the Manual shall be deemed to be substituted by the terms "Contractor", "Authority Engineer" and "Agreement" respectively.

2.2 Notwithstanding anything to the contrary contained in the Paragraph 1 above, the following Specifications and Standards shall apply to the Project Highway, and for purposes of this Agreement, the aforesaid Specifications and Standards shall be deemed to be amended to the extent set forth below:

<b>Sr. No.</b>	<b>Item</b>	<b>Clause referred in Manual</b>	<b>Provision as per Manual</b>	<b>Modified Provision</b>
1	2.2.7 Schedule C – Boundary wall	Clause 12.2 of IRC:SP:84-2019 Road Boundary wall (RBW)	RBW Fig 2.1	Annex- II of Schedule C as per Morth Circular RW/NH-24036/27/2010-PPP dated 4 <sup>th</sup> Feb 2019.
2	7.2.1 of schedule B	Clause 7.3 (ii) of IRC:SP:87-2019	Over all width of all new culverts shall be equal to roadway width of the approaches.	New Box culverts shall be constructed for width (measured from inside to inside of Parapet/ headwall) equal to the proposed roadway width of the Project Highway & as per typical cross-section given in schedule B
3	Median	Clause 2.5 of the manual		Minimum width of Median shall be as per the TCS given in Schedule B
4	Service road entry and exit	Clause 2.12.2.3 of the Manual		Clause 2.12.2.3 shall be read as under: Wherever service roads are provided, provision shall be

Sr. No.	Item	Clause referred in Manual	Provision as per Manual	Modified Provision
				made for proper entry and exit ramps between the main highway and the service roads through properly designed acceleration and deceleration lane. The layout for entry / exit at service road shall be as per Figs. 2.1A and 2.1B to be developed within available land.
5	Typical cross sections	Clause 2.17 of the manual.		Typical Cross section given in Annex-II schedule B shall be followed.
6	Structure width	Clause 7.3 of Manual		Width of the structure as given in Schedule B shall be followed.
7	Road Sigs / traffic signs	Clause No. 9.2 of Manual		Specification as per IRC:67-2022 in conformity with Guidelines issued under RT-25035/07/2023-RS (Part) (221534) dated 24.12.2024 shall be followed
8	Road Markings & Road studs	Clause No. 9.3 & Clause 9.5 of Manual		Specification as per IRC:35 in conformity with Guidelines issued under RT-25035/07/2023-RS (Part) (221534) dated 24.12.2024 shall be followed
9	7.2.9 of schedule B : Utility duct crossing	Clause No. 2.16 IRC: SP: 84-2019	Utility duct in the form of 600 mm dia NP-4 pipe across the project highway along with inspection box/chamber at spacing of 0.50km shall be provided for crossing underground utilities in builtup areas.	NP-4 RCC Pipe dia 600 mm shall be provided across the Project Highway @ 1 km c/c and along with inspection chamber shall be provided for crossing of utilities.

### 3. Adoption of Automated & Intelligent Machine-Aided Construction (AI-MC)

#### 3.1 Definition of Automated & Intelligent Machine-Aided Construction (AI-MC)

**Automated & Intelligent Machine-aided Construction (AI-MC)** has been adopted to Highway Construction Projects to achieve better Construction Quality with respect to compaction in confirmation with IRC:SP:97-2013, in a Safer Environment. Construction Efficiencies of Construction Machineries are being enhanced through Location referencing. **Automated & Intelligent Machine-aided Construction (AI-MC)** involves using Construction Equipment mounted with on-board Computers, using a combination of 3D Modelling Data along with Global Navigation Satellite System (GNSS) / Universal Robotic Total Station (UTS) Technology and Intelligent Guidance to control the manoeuvring of Construction Equipment. AI-MC provides Horizontal and Vertical Guidance in real time to Construction Equipment Operators. AI-MC Equipment has the potential to achieve designed Grades on the First Pass, without assistance of traditional staking.

#### 3.2 Obligations of the Contractor

The Contractor/Contractor shall deploy at its own Cost and Expenses, the Grading/Paving/Compaction Equipment fitted with System of Automated & Intelligent Machine-aided Construction (AI-MC) for finishing of all Grades including Embankment, Subgrade, GSB, WMM. The System of Automated & Intelligent Machine-aided Construction (AI-MC) used by the Contractor/Contractor shall be capable of delivering accuracy as per the applicable IRC specifications. During the Construction Period, the Contractor/Consultant shall furnish all the Physical Progress Data (All desired type of Surface Grading Data, Compaction and Temperature Data etc.) obtained through System of Automated & Intelligent Machine-aided Construction (AI-MC)/CMS to Authority for monitoring of Construction on Daily Basis. These Digital Data and desired output shall be made available at the Location (Server/Cloud) finalised by Authority. Detailed specifications of this Technology is elaborated in subsequent Paras.

#### 3.3 Construction of the Project (detailed specification)

Contractor / Contractor shall use 3D Digital Models and **Automated & Intelligent Machine-aided Construction (AI-MC)** for Motor Graders, Paver, Compactors and Dozers to ensure Quality Standards as per IRC Specifications and Productivity Improvement. Further, Contractor shall generate measurable Digital Records that can be shared on a Digital Drive or can viewed in real time. The Hardware and Software used by the Contractor shall have following Features and Specifications:

i. **Centralized Monitoring Software (CMS) for Preparing Design Data for Field Systems and Processing Results:**

A contractor/Contractor shall use appropriate (Design/Working) Software for 3D Constructible Model from the approved Design & Drawing that can be carried in 'Construction Grade Survey Instrument' and 3D Machine Control Tools for Construction purpose. The Software shall be able to generate Triangulated Surface Models, 3D Line Works and should have ability to Guide Machine, based on Design Data and also generate the Reports. There shall be provision to feed tolerance limits or desired passes for comparing with Final Results. The cloud based Software shall be capable of Record Creation, Compilation, Exporting, Presenting in Graphical Format with Colour Coding showing different activity and Generate Report showing Location/ Stretches where the work done is not confirming to limits/ tolerances prescribed in Specification. The Nonconformity Report should be generatable for any selected Stretch in Tabular Format. Some of the Non-conformity /Conformity to be displayed includes:

- Location where the thickness of each layer Embankment/ Subgrade is more than specified limit from prevailing finalised layer with its clear location, to meet the requirements as per clause 305.3.5. 1 of MoRTH Specification.
  - Number of Passes Made with respect to Target Number of Passes for the compactors to achieve the compaction requirement of respective layers as per section 305 & 903.2 of MoRTH (Table 300-1 and 300-2).
  - Weak spot w.r.t Intelligent Compaction Measurement Value (ICMV, in conformity with clause 4.3.3.2 of IRC: SP:97-2013 page 23) to bring the conformity as per section 305 & 903.2 of MoRTH (Table 300-1 Et 300-2).
  - Granular/ Bituminous layer beyond the tolerance limits, as specified in clause 902 (Table 900-1) of MoRTH Specification.
  - Laying and Rolling Temperature achieved by Asphalt Paver/ Compactor/ Pneumatic Rollers, with respect to specified minimum Target Temperature as per IRC Guidelines (like clause-507 of MoRTH Specification; clause 4.4.3 of IRC 27-2009 for BM; clause 5.2, ii of IRC:SP:97-2013).
- ii. Automated & Intelligent Machine-aided Construction (AI-MC) System for Motor Grader for Accurate Grading to Design.**

A Contractor/ Contractor shall utilize Motor Grader controlled with GNSS Machine Control System in the Construction of Embankment, Subgrade Et GSB Surface Grades. The requirement includes the finishing of Final Surface Level of Embankment, Subgrade & GSB as per Clause 902 of MoRTH Specification.

In respect of Embankment layers, the Motor Grader shall be equipped with requisite instrumentation to set the desired level and inclination of blade of grader to achieve desired profile.

The Contractor may use any type of GNSS/GPS/ Universal Robotic Total Station type Machine Control System that Results in achieving the finished grading requirements of each layer. The 3D Machine guidance and control System shall be able to control the depth and slope of the Motor Grader Blade in relation to the 3D Model during the Grading Process. The 3D Machine Control Systems shall have requisite instrumentation to execute Earthworks Driven from Design Data. Machine Guidance Et Control System shall have provision to show and send required Fields Coverage Data for each Data Point for all Passes in Dashboard /Office Monitoring Software. Data shall have at-least following information: Date Et Time Stamp, Longitude/ Latitude, Easting/ Northing, Local Easting/Local Northing, Height on the Ground above WGS84 Geoid/ Elevation/ local elevation, GNSS Mode, Motor Grader Pass Numbers, Auto/Manual.

**iii. Automated & Intelligent Machine-aided Construction (AI-MC) System for Pavers**

A Contractor/ Contractor shall utilize Paving equipment controlled by Universal Robotic Total Station and Machine Control System in the Construction of Roadway Pavement for Automatic Control of Elevation and Slope. The requirement includes the finishing of Final Pavement surface as per the MoRTH Specification Clause 902. Machine Guidance & Control System

shall have provision to Show and Send required Fields Coverage Data for each Data Point in Dashboard /Office Monitoring Software. Data shall have at-least like this information: Date & Time Stamp, Easting, Northing and Elevation.

**iv. Automated & Intelligent Machine-aided Construction (AI-MC) System for Compactors**

The **Automated St Intelligent Machine** Guidance System on Compactor shall allow Operator to monitor the Number of Passes completed in real time for every layer of Embankment, Subgrade, GSB or asphalt-based Items against a Target Pass Count. It should have provision to send required Fields Coverage Data for each Data Point for all Passes and Provision to show in Dashboard and Send the Data to CMS. Data shall have at least following information: Date & Time Stamp, Longitude/ Latitude, Easting/ Northing, Local Easting/ Local Northing, Height on the Ground above WGS84 Geoid/ Elevation/ Local Elevation, GNSS Mode, Compactor Pass Numbers, Compactor Direction (Forward /Reverse), Compactor Speed, Vibration On (YES/ No, On/ Off), Frequency, Amplitude, ICMV (Required for roller instrumented with Accelerometer).

**v. Automated & Intelligent Machine-aided Construction (AI-MC) System for Capturing of Temperature (T)**

There shall be an equipment to capture the temperature of the asphalt-based items during the Laying and Rolling process. The same should be reflected and captured in Machine Guidance System of the Paver and Rollers and shall be sent to Monitoring Software for further reporting and analysis in the following information: Date Lt Time Stamp, Longitude /Latitude, Easting/ Northing, Local Easting/ Local Northing, Surface Temperature (Required for Tandem Roller instrument with Temperature Sensor).

**vi. Data/File transfer from CMS from Automated & Intelligent Machine-aided Construction (AI-MC) System.**

CMS should have the ability to send Design updates to all the equipment's in the Field ensuring that same Design Data is used by all equipment's. It should accept Field Data for Validation and Demonstration Process. It shall be capable for exporting the data to the any Highway Modelling Platform for demonstrating the Progress of Construction on real time basis by exposing the requested Data through API for further use like Scheduling, Billing, and Progress etc.

**3.4 Cross Hole Sonic Logging Test' for testing of This is a more reliable method of Testing Integrity of Piles.** This Test is an advancement to Low Strain Pile Integrity Test (IS: 14893-2001), which is being carried out currently in Highway Projects. The details of conducting this Test are available in ASTM D6760. RDSO, Indian Railways has published Guidelines on Integrity Testing of Piles i.e. BS-41 R1 in November, 2023 which includes this Integrity Testing Method.

## **Schedule -E**

**(See Clauses 2.1 and 14.2)**

### **Maintenance Requirements**

#### **1. Maintenance Requirements**

- (i) The Contractor shall, at all times maintain the Project Highway in accordance with the provisions of this Agreement, Applicable Laws and Applicable Permits.
- (ii) The Contractor shall repair or rectify any Defect or deficiency set forth in Paragraph 2 of this Schedule-E within the time limit specified therein and any failure in this behalf shall constitute non-fulfilment of the Maintenance obligations by the Contractor. Upon occurrence of any breach hereunder, the Authority shall be entitled to effect reduction in monthly lump sum payment as set forth in Clause 14.6 of this Agreement, without prejudice to the rights of the Authority under this Agreement, including Termination thereof.
- (iii) All Materials, works and construction operations shall conform to the MORTH Specifications for Road and Bridge Works, and the relevant IRC publications. Where the specifications for a work are not given, Good Industry Practice shall be adopted.

#### **2. Repair/rectification of Defects and deficiencies**

The obligations of the Contractor in respect of Maintenance Requirements shall include repair and rectification of the Defects and deficiencies specified in Annex - I of this Schedule-E within the time limit set forth therein.

#### **3. Other Defects and deficiencies**

In respect of any Defect or deficiency not specified in Annex - I of this Schedule-E, the Authority's Engineer may, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards, and any deviation or deterioration beyond the permissible limit shall be repaired or rectified by the Contractor within the time limit specified by the Authority's Engineer.

#### **4. Extension of time limit**

Notwithstanding anything to the contrary specified in this Schedule-E, if the nature and extent of any Defect or deficiency justifies more time for its repair or rectification than the time specified herein, the Contractor shall be entitled to additional time in conformity with Good Industry Practice. Such additional time shall be determined by the Authority's Engineer and conveyed to the Contractor and the Authority with reasons thereof.

#### **5. Emergency repairs/restoration**

Notwithstanding anything to the contrary contained in this Schedule-E, if any Defect, deficiency or deterioration in the Project Highway poses a hazard to safety or risk of damage to property, the Contractor shall promptly take all reasonable measures for eliminating or minimizing such danger.

#### **6. Daily inspection by the Contractor**

The Contractor shall, through its engineer, undertake a daily visual inspection of the Project Highway and maintain a record thereof in a register to be kept in such form and manner as the Authority's Engineer may specify. Such record shall be kept in safe custody of the Contractor and shall be open to inspection by the Authority and the Authority's Engineer at any time during office hours.

**7. Pre-monsoon inspection / Post-monsoon inspection**

The Contractor shall carry out a detailed pre-monsoon inspection of all bridges, culverts and drainage system before [1st June] every year in accordance with the guidelines contained in IRC: SP35. Report of this inspection together with details of proposed maintenance works as required on the basis of this inspection shall be sent to the Authority's Engineer before the [10th June] every year. The Contractor shall complete the required repairs before the onset of the monsoon and send to the Authority's Engineer a compliance report. Post monsoon inspection shall be done by the [30th September] and the inspection report together with details of any damages observed and proposed action to remedy the same shall be sent to the Authority's Engineer.

**8. Repairs on account of natural calamities**

All damages occurring to the Project Highway on account of a Force Majeure Event or wilful default or neglect of the Authority shall be undertaken by the Authority at its own cost. The Authority may instruct the Contractor to undertake the repairs at the rates agreed between the Parties.

**Annex - I**  
**( Schedule-E)**

**Repair/rectification of Defects and deficiencies**

The Contractor shall repair and rectify the Defects and deficiencies specified in this Annex-I of Schedule-E within the time limit set forth in the table below.

Table 1 : Maintenance Criteria for pavements:

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/ Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification/Repair	Maintenance Specifications
		Desirable	Acceptable					
Flexible Pavement (Pavement of MCW, Service Road, approaches of Grade structure, approaches of connecting roads, slip roads, lay byes etc. as applicable)	Potholes	Nil	< 0.1 % of area and subject to limit of 10 mm in depth	Daily	Length Measurement Unit like Scale, Tape, odometer etc.	IRC 82: 2015 and Distress Identification Manual for Long Term Pavement Performance Program, FHWA 2003 ( <a href="http://www.tfhrc.com/pavement/ltp/reports/03031/">http://www.tfhrc.com/pavement/ltp/reports/03031/</a> )	24-48 hours	MORT&H Specification 3004.2
	Cracking	Nil	< 5 % subject to limit of 0.5 sqm for any 50 m length	Daily			7-15 days	MORT&H Specification 3004.3
	Rutting	Nil	< 5 mm	Daily	Straight Edge		15 -30 days	MORT&H Specification 3004.2
	Corrugations and Shoving	Nil	< 0.1 % of area	Daily	Length Measurement		2-7 days	IRC:82-2015
	Bleeding	Nil	< 1 % of area	Daily	Unit like Scale, Tape, odometer etc.		3-7 days	MORT&H Specification 3004.4
	Raveling/ Stripping	Nil	< 1 % of area	Daily			7-15 days	IRC:82-2015 read with IRC SP 81
	Edge Deformation/ Breaking	Nil	< 1 m for any 100 m section and width < 0.1 m at any location, restricted to 30 cm from the edge	Daily			7- 15 days	IRC:82-2015

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/ Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification/Repair	Maintenance Specifications
		Desirable	Acceptable					
	Roughness - BI	2000 mm/km	2400 mm/km	Bi- Annually	Class I Profilometer SCRIM (Sideway- force Coefficient Routine Investigation Machine or equivalent)	Class I Profilometer : ASTM E950 (98) :2004 –Standard Test Method for measuring Longitudinal Profile of Travelled Surfaces with Accelerometer Established Inertial Profiling Reference ASTM E1656 -94: 2000- Standard Guide for Classification of Automatic Pavement Condition Survey Equipment	180 days	IRC:82-2015
	Skid Number	60SN	50SN	Bi- Annually			180 days	BS: 7941-1: 2006
	Pavement Condition Index	3	2.1	Bi- Annually			180 days	IRC:82-2015
	Other Pavement Distresses			Bi- Annual ly			2-7 days	IRC:82-2015
	Deflection/ Remaining Life			Annually	Falling Weight Deflectometer	IRC 115: 2014	180 days	IRC:115-2014
Rigid Pavement (Pavement of MCW, Service Road, Grade structure, approaches of connecting roads, slip roads, lay byes etc. as applicable)	Roughness - BI	2200mm/km	2400mm/km	Bi-Annually	Class I Profilometer	ASTM E950 (98) :2004 and ASTM E1656 -94: 2000	180 days	IRC:SP:83-2008
	Skid	Skid Resistance no. at different speed of vehicles		Bi- Annually	SCRIM (Sideway- force Coefficient Routine Investigation Machine or equivalent)	IRC:SP:83-2008	180 days	IRC:SP:83-2008
		Minimum SN	Traffic Speed (Km/ hr)					
		36	50					
		33	65					
		32	80					
		31	95					
		31	110					

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/ Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification/Repair	Maintenance Specifications
		Desirable	Acceptable					
Embankment/ Slope	Edge drop at shoulders	Nil	40mm	Daily	Length Measurement Unit like Scale, Tape, odometer etc.	IRC	7-15 days	MORT&H Specification 408.4
	Slope of camber /cross fall	Nil	<2% variation in prescribed slope of camber /cross fall	Daily			7-15 days	MORT&H Specification 408.4
	Embankment Slopes	Nil	<15 % variation in prescribe side slope	Daily			7-15 days	MORT&H Specification 408.4
	Embankment Protection	Nil	Nil	Daily	NA		7-15 days	MORT&H Specification
	Rain Cuts/ Gullies in slope	Nil	Nil	Daily Specially During Rainy Season	NA		7-15 days	MORT&H Specification

In addition to the above performance criteria, the Contractor shall strictly maintain the rigid pavement as per the requirements in the following table

Table 2 : Maintenance Criteria for Rigid pavement

S. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $f d < D/2$	For the case $f d > D/2$
<b>CRACKING</b>						
1.	<b>Single Discrete Cracks Not intersecting with any joint</b>	w = width of crack L = length of crack d = depth of crack D = depth of slab	0	Nil, not discernible	No Action	Not applicable
			1	w < 0.2 mm. hair cracks		
			2	w = 0.2 - 0.5 mm, discernible from slow-moving car	Seal without delay	Seal, and stitch if L > 1m. Within 7days
			3	w = 0.5 - 1.5 mm, discernible from fast-moving car		
			4	w = 1.5 - 3.0 mm		

S. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $f d < D/2$	For the case $f d > D/2$
			5	$w > 3$ mm.	Seal, and stitch if $L > 1$ m. Withing 7 days	Staple or Dowel Bar Retrofit, FDR for affected portion. Within 15days
2	<b>Single Transverse (or Diagonal) crack intersecting with one or more joints</b>	w = width of crack L = length of crack d = depth of crack D = depth of slab	0	Nil, not discernible	No Action	
			1	$w < 0.2$ mm, hair cracks	Route and seal with epoxy. Within 7 days	Staple or Dowel Bar Retrofit. Within 15days
			2	$w = 0.2 - 0.5$ mm, discernible from slow vehicle		
			3	$w = 0.5 - 3.0$ mm, discernible from fast vehicle	Route, seal and stitch, if $L > 1$ m.  Within 7 days	
			4	$w = 3.0 - 6.0$ mm	Dowel Bar Retrofit. Within 15 days	Full Depth Repair Dismantle and reconstruct affected. Portion with norms and specifications See Para 5.5 & 9.2 Within 15days
			5	$w > 6$ mm, usually associated with spalling, and/or slab rocking under traffic	Not Applicable, as it may be full depth	
3	<b>Single Longitudinal Crack intersecting with one or more joints</b>	w = width of crack L = length of crack d = depth of crack D = depth of slab	0	Nil, not discernible	No Action	
			1	$w < 0.5$ mm, discernible from slow moving vehicle	Seal with epoxy, if $L > 1$ m. Within 7 days	Staple or dowel bar retrofit. Within 15days
			2	$w = 0.5 - 3.0$ mm, discernible from fast vehicle	Route seal and stitch, if $L > 1$ m. Within 15 days	
			3	$w = 3.0 - 6.0$ mm	Staple, if $L > 1$ m. Within 15 days	Partial Depth Repair with stapling. Within 15 days
			4	$w = 6.0 - 12.0$ mm, usually associated with spalling	Not Applicable, as it may be full depth	

S. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $f d < D/2$	For the case $f d > D/2$
			5	w > 12 mm, usually associated with spalling, and/or slab rocking under traffic		Full Depth Repair Dismantle and reconstruct affected portion as per norms and specifications. See Para 5.6.4 Within 15 days
4	<b>Multiple Cracks intersecting with one or more joints</b>	w = width of crack	0	Nil, not discernible	No Action	
			1	w < 0.2 mm, hair cracks	Seal, and stitch if L > 1 m.	
			2	w = 0.2 - 0.5 mm. discernible from slow vehicle	Within 15 days	
			3	w = 0.5 - 3.0 mm, discernible from fast vehicle	Full depth repair within 15 days	Dismantle, Reinstatement subbase, Reconstruct whole slab as per specifications within 30 days
			4	w = 3.0 - 6.0 mm panel broken into 2 or 3 pieces		
			5	w > 6 mm and/or panel broken into more than 4 pieces		
5	<b>Corner Break</b>	w = width of crack L = length of crack	0	Nil, not discernible	No Action	
			1	w < 0.5 mm; only 1 corner broken	Seal with low viscosity epoxy to secure broken parts	Seal with epoxy seal with epoxy. Within 7 days
			2	w < 1.5 mm; L < 0.6 m, only one corner broken.		
			3	w < 1.5 mm; L < 0.6 m, two corners broken	Partial Depth (Refer Figure 8.3 of IRC:SP: 83-2008) Within 15 days	Full depth repair
			4	w > 1.5 mm; L > 0.6 m or three corners broken		
			5	Free or four corners broken		

S. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $f d < D/2$	For the case $f d > D/2$
6	<b>Punchout (Applicable to Continuous Reinforced Concrete Pavement (CRCP) only)</b>	w = width of crack L = length (m/m <sup>2</sup> )	0	Nil, not discernible	Not Applicable, as it may be full depth	No Action
			1	w < 0.5 mm; L < 3 m/m <sup>2</sup>		Seal with low viscosity epoxy to secure broken parts. Within 15days Full depth repair - Cut out and replace damaged area taking care not to damage reinforcement. Within 30days
			2	either w > 0.5 mm or L < 3 m/m <sup>2</sup>		
			3	w > 1.5 mm and L < 3 m/m <sup>2</sup>		
			4	w > 3 mm, L < 3 m/m <sup>2</sup> and deformation		
			5	w > 3 mm, L > 3 m/m <sup>2</sup> and deformation		
<b>Surface Defects</b>						
7	<b>Ravelling or Honeycomb type surface</b>	r = area damaged surface/total surface of slab (%) h = maximum depth of damage	0	Nil, not discernible	<b>Short Term</b> No action.	<b>Long Term</b>  Not Applicable
			1	r < 2 %	Local repair of areas Damaged and liable to be damaged. Within 15 days Bonded Inlay, 2 or 3 slabs if affecting. Reconstruct slabs, 4 or more slabs if affecting. Within 30 days	
			2	r = 2 - 10 %		
			3	r = 10-25%		
			4	r = 25 - 50 %		
			5	r > 50% and h > 25 mm		
8	<b>Scaling</b>	r = damaged surface /total surface of slab (%) h = maximum depth of damage	0	Nil, not discernible	<b>Short Term</b> No action	<b>Long Term</b>  Not Applicable
			1	r < 2 %	Local repair of areas Damaged and liable to be damaged.	
			2	r = 2 - 10 %		

S. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $f d < D/2$	For the case $f d > D/2$
					Within 7 days	
			3	$r = 10 - 20\%$	Bonded Inlay within 15 Days	
			4	$r = 20 - 30\%$		
			5	$r > 30\%$ and $h > 25\text{ mm}$	Reconstruct slab within 30 days	
9	<b>Polished Surface/ Glazing</b>	t = texture depth, sand patch test	0		No action.	Not Applicable
			1	t > 1 mm		
			2	t = 1 - 0.6 mm	Monitor rate of deterioration	
			3	t = 0.6 - 0.3 mm		
			4	t = 0.3 - 0.1 mm		
			5	t < 0.1 mm	Diamond Grinding if Affecting 50% or more slabs in a continuous stretch of Minimum 5 km Within 30 days	
10	<b>Popout (Small Hole), Pothole Refer Para 8.4</b>	n = number/m <sup>2</sup> d = diameter h = maximum depth	0	d < 50 mm; h < 25 mm; n < 1 per 5 m <sup>2</sup>	No action.	Not Applicable
			1	d = 50 - 100 mm; h < 50 mm; n < 1 Not Applicable per 5 m <sup>2</sup>	Partial depth repair 65 mm deep.	
			2	d = 50 - 100 mm; h > 50 mm; n < 1 per 5 m <sup>2</sup>	Within 15 days	
			3	d = 100 - 300 mm; h < 100 mm n < 1 per 5 m <sup>2</sup>	Partial depth repair 110mm	
			4	d = 100 - 300 mm; h > 100 mm; n < 1 per 5 m <sup>2</sup>	i.e.10 mm more than the Depth of the hole. Within 30 days	
			5	d > 300 mm; h > 100 mm: n > 1 per 5 m <sup>2</sup>	Full depth repair. Within 30 days	
<b>Joint Defects</b>						

S. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $f \leq D/2$	For the case $f > D/2$
11	<b>Joint Seal Defects</b>	loss or damage L = Length as % total joint length	0	Difficult to discern.	<b>Short Term</b> No action.	<b>Long Term</b>  Not Applicable
			1	Discernible, $L < 25\%$ but of little immediate consequence with regard to ingress of water or trapping incompressible material	Clean joint, inspect later.	
			3	Notable. $L > 25\%$ insufficient protection against ingress of water and trapping incompressible material	Clean and reapply sealant in selected locations. Within 7 days	
			5	Severe; $w > 3$ mm negligible protection against ingress of water and trapping incompressible material.	Clean, widen and reseal the joint. Within 7 days	
12	<b>Spalling of Joints</b>	w = width on either side of the joint L = length of spalled portion (as % joint length)	0	Nil, not discernible	No action.	Not Applicable
			1	$w < 10$ mm	Apply low viscosity epoxy resin/ mortar in cracked portion. Within 7 days	
			2	$w = 10 - 20$ mm, $L < 25\%$		
			3	$w = 20 - 40$ mm, $L > 25\%$	Partial Depth Repair Within 15 days	
			4	$w = 40 - 80$ mm, $L > 25\%$	30 - 50 mm deep, $h = w + 20\%$ of w, Within 30 days	
			5	$w > 80$ mm, and $L > 25\%$	50 - 100 mm deep repair. $H = w + 20\%$ of w. Within 30 days	
13	<b>Faulting (or Stepping)</b>	f = difference of level	0	not discernible, $< 1$ mm	No action.	No action.
			1	$f < 3$ mm		

S. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $f d < D/2$	For the case $f d > D/2$
			2	$f = 3 - 6$ mm	Determine cause and observe, take action for diamond grinding	Replace the slab as appropriate. Within 30days
			3	$f = 6 - 12$ mm	Diamond Grinding	
			4	$f = 12 - 18$ mm	Raise sunken slab.	Replace the slab as appropriate. Within 30days
			5	$f > 18$ mm	Strengthen subgrade and sub-base by grouting and raising sunken slab	
14	<b>Blowup or Buckling</b>	h = vertical displacement from normal profile	0	Nil, not discernible	<b>Short Term</b>	<b>Long Term</b>
					No Action	
			1	$h < 6$ mm		
			2	$h = 6 - 12$ mm	Install Signs to Warn Traffic	
			3	$h = 12 - 25$ mm	Withing 7 days	
			4	$h > 25$ mm	Full Depth Repair. Within 30 days	
			5	shattered slabs, i.e. 4 or more pieces	Replace broken slabs Within 30 days	
15	<b>Depression</b>	h = negative vertical displacement from normal profile L =length	0	Not discernible, $h < 5$ mm	No Action	Not Applicable
			1	$h = 5 - 15$ mm		
			2	$h = 15-30$ mm, Nos $< 20\%$ joints	Install Signs to Warn Traffic	
			3	$h = 30 - 50$ mm	Within 7 days	
			4	$h > 50$ mm or $> 20\%$ joints	Strengthen subgrade.	
			5	$h > 100$ mm	Reinstate pavement at normal level if $L < 20$ m. Within 30 days	
16	<b>Heave</b>		0	Not discernible. $h < 5$ mm	<b>Short Term</b>	<b>Long Term</b>

S. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $f < D/2$	For the case $f > D/2$
		h = positive vertical displacement from normal profile. L = length			No action.	<b>scrabble</b>
			1	h = 5 - 15 mm	Follow up	
			2	h = 15 - 30 mm, Nos <20% joints	Install Signs to Warn Traffic Within 7 days	
			3	h = 30 - 50 mm		
			4	h > 50 mm or > 20% joints	Stabilise subgrade. Reinstate pavement at normal level if length < 20 m. Within 30 days	
			5	h > 100 mm		
17	<b>Bump</b>	h = vertical displacement from normal profile	0	h < 4 mm	No Action	
			1	h = 4 - 7 mm	Grind, in case of new construction Within 7 days	Construction Limit for New construction.
			3	h = 7 - 15 mm	Grind, in case of ongoing Maintenance Within 15 days	Replace in case of new construction. Within 30days
			5	h > 15 mm	Full Depth Repair. Within 30 days	Full Depth Repair. Within 30days
18	<b>Lane to Shoulder Dropoff</b>	f = difference of level	0	Nil, not discernible < 3mm	<b>Short Term</b>	<b>Long Term</b>
					No action.	
			1	f = 3 - 10 mm	Spot repair of shoulder in 7 days	
			2	f = 10 - 25 mm		
			3	f = 25 - 50 mm	Fill up shoulder Within 7 days	For any 100 m stretch Reconstruct shoulder, if affecting 25% or more of stretch. Within 30 days
			4	f = 50 - 75 mm		
5	f > 75 mm					
<b>Drainage</b>						
19	<b>Pumping</b>		0	not discernible	No Action	

S. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $f d < D/2$	For the case $f d > D/2$
		Quantity of fines and water expelled through open joints and cracks Nos	1 to 2	slight/ occasional Nos < 10%	Repair cracks and joints Without delay.	Inspect and repair sub-drainage at distressed sections and upstream
			3 to 4	Appreciable//Frequent 10 - 25%	Lift or jack slab within 30 days.	
		Nos/100 m stretch	5	abundant, crack development > 25%	Repair distressed pavement sections. Strengthen subgrade and subbase. Replace slab. Within 30 days	
20	Ponding	Ponding on slabs due to blockage of drains	0-2	No discernible problem	No action	
			3-4	Blockages observed in drains, but water flowing	Clean drains etc. within 7 days, Follow up	Action required to stop water damaging foundation within 30 days.
			5	Ponding, accumulation of water observed	Clean drains etc. within 7 days, Follow up	

**Table -3: Maintenance Criteria for Safety Related Items and Other Furniture Items:**

Asset Type	Performance Parameter	Level of Service (LOS)			Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
Highway	Availability of Safe Sight Distance	As per IRC SP :84-2014, a minimum of safe stopping sight distance shall be available throughout.			Monthly	Manual Measurements with Odometer along with video/ image backup	Removal of obstruction within 24 hours, in case of sight line affected by temporary objects such as trees, temporary encroachments. In case of permanent structure or design deficiency: Removal of obstruction/improvement of deficiency at the earliest. Speed Restriction boards and suitable traffic calming measures such as transverse bar marking,		IRC:SP 84-2014
		Design Speed, kmph	Desirable Minimum Sight Distance (m)	Safe Stopping Sight Distance (m)					
		100	360	180					
		80	260	130					

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards			
					blinkers, etc. shall be applied during the period of rectification.					
<b>Pavement Marking</b>	Wear	<70% of marking remaining	Bi-Annually	Visual Assessment as per Annexure-F of IRC:35-2015	Re - painting	Cat-1 Defect - within 24 hours Cat-2 Defect - within 2 months	IRC:35-2015			
	Day time Visibility	During expected life Service Time Cement Road - 130mcd/m <sup>2</sup> /lux Bituminous Road - 100mcd/m <sup>2</sup> /lux	Monthly	As per Annexure-D of IRC:35-2015	Re-painting	Cat-1 Defect - within 24 hours Cat-2 Defect - within 2 months	IRC:35-2015			
	Night Time Visibility	Initial and Minimum Performance for Dry Retro reflectivity during night time: <table border="1"> <tr> <td>Design Speed</td> <td>(RL) Retro Reflectivity (mcd/m<sup>2</sup>/lux)</td> </tr> <tr> <td></td> <td>Initial (7 days) Minimum Threshold level (TL) &amp; warranty period required</td> </tr> </table>	Design Speed	(RL) Retro Reflectivity (mcd/m <sup>2</sup> /lux)		Initial (7 days) Minimum Threshold level (TL) & warranty period required	Bi-Annually	As per Annexure-E of IRC:35-2015	Re - painting	Cat-1 Defect - within 24 hours Cat-2 Defect - within 2 months
Design Speed	(RL) Retro Reflectivity (mcd/m <sup>2</sup> /lux)									
	Initial (7 days) Minimum Threshold level (TL) & warranty period required									

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards												
		<table border="1"> <tr> <td></td> <td></td> <td>up to 2 years</td> </tr> <tr> <td>Up to 65</td> <td>200</td> <td>80</td> </tr> <tr> <td>65 - 100</td> <td>250</td> <td>120</td> </tr> <tr> <td>Above 100</td> <td>350</td> <td>150</td> </tr> </table> <p>Initial and Minimum Performance for Night Visibility under wet condition (Retro reflectivity): Initial 7 days Retro reflectivity: 100 mcd/m2/ lux Minimum Threshold Level: 50 mcd/m2/lux</p>			up to 2 years	Up to 65	200	80	65 - 100	250	120	Above 100	350	150					
		up to 2 years																	
Up to 65	200	80																	
65 - 100	250	120																	
Above 100	350	150																	
	Skid Resistance	<p>Initial and Minimum performance for Skid Resistance: Initial (7days): 55BPN Min. Threshold: 44BPN *Note: shall be considered under urban/city traffic condition encompassing the locations like pedestrian crossings, bus bay, bus stop, cycle track intersection delineation, transverse bar markings etc.</p>	Bi-Annually	As per Annexure-G of IRC:35-2015		Within 24 hours	IRC:35-2015												

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
Road Signs	Shape and Position	Shape and Position as per IRC:67-2012. Signboard should be clearly visible for the design speed of the section.	Daily	Visual with video/image backup	Improvement of shape, in case if shape is damaged. Relocation as per requirement	48 hours in case of Mandatory Signs, Cautionary and Informatory Signs (Single and Dual post signs) 15 Days in case of Gantry/ Cantilever Sign boards	IRC:67-2012
	Retro reflectivity	As per specifications in IRC:67-2012	Bi-Annually	Testing of Each signboard using Retro Reflectivity Measuring Device. In accordance with ASTM D 4956-09.	Change of signboard	48 hours in case of Mandatory Signs, Cautionary and Informatory Signs (Single and Dual post signs) 1 Month in case of Gantry/	RC:67-2012

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
						Cantilever Sign boards	
<b>Kerb</b>	Kerb Height	As per IRC 86:1983 depending upon type of Kerb	Bi-Annually	Use of distance measuring tape	Raising Kerb Height	Within 1 Month	IRC 35:2015
	Kerb Painting	Functionality: Functioning of Kerb painting as intended	Daily	Visual with video/image backup	Kerb Repainting	Within 7-days	IRC:SP:84-2014, IRC:35-2015
<b>Other Road Furniture</b>	Reflective Pavement Markers (Road Studs)	Numbers and Functionality as per specifications in IRC:SP:84-2014 and IRC:35-2015, unless specified in Schedule-B.	Daily	Counting	New Installation	Within 2 months	IRC:SP:84-2014, IRC:35-2015
	Pedestrian Guardrail	<b>Functionality:</b> Functioning of guardrail as intended	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC:SP:84-2014
	Traffic Safety Barriers	<b>Functionality:</b> Functioning of Safety Barriers as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP:84-2014, IRC:119-2015
	End Treatment of Traffic Safety Barriers	<b>Functionality:</b> Functioning of End Treatment as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP:84-2014, IRC:119-2015
	Attenuators	<b>Functionality:</b> Functioning of Attenuators as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP-2014, IRC:119-2015
	Guard Posts and Delineators	<b>Functionality:</b> Functioning of Guard Posts and Delineators as intended	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC: 79 -1981

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
	Overhead Sign Structure	Overhead sign structure shall be structurally adequate	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC:67-2012
	Traffic Blinkers	<b>Functionality:</b> Functioning of Traffic Blinkers as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP:84-2014
<b>Highway Lighting System</b>	Highway Lights	Illumination: Minimum 40 Lux illumination on the road surface	Daily	The illumination level shall be measured with luxmeter	Improvement in Lighting System	24 hours	IRC:SP:84-2014
		No major failure in the lighting system	Daily	-	Rectification of failure	8 hours	IRC:SP:84-2014
		No minor failure in the lighting system	Monthly	-	Rectification of failure	24 hours	IRC:SP:84-2014
	Toll Plaza Canopy Lights	Minimum 40 Lux Illumination on the road surface	Daily	The illumination level shall be measured with luxmeter	improvement in Lighting System	24 hours	IRC:SP:84-2014
		No major/minor failure in the lighting system	Daily	-	Rectification of failure	8 hours	IRC:SP:84-2014
<b>Trees and Plantation including median plantation</b>	Obstruction in a minimum head-room of 5.5 m above carriageway or obstruction in visibility of road signs	No obstruction due to trees	Monthly	Visual with video/image backup	Removal of trees	Immediate	IRC:SP:84-2014

<b>Asset Type</b>	<b>Performance Parameter</b>	<b>Level of Service (LOS)</b>	<b>Frequency of Measurement</b>	<b>Testing Method</b>	<b>Recommended Remedial measures</b>	<b>Time limit for Rectification</b>	<b>Specifications and Standards</b>
	Deterioration in health of trees and bushes	Health of plantation shall be as per requirement of specifications & instructions issued by Authority from time to time	Daily	Visual with video/image backup	Timely watering and treatment. Or Replacement of Trees and Bushes.	Within 90 days	IRC:SP:84-2014
	Vegetation affecting sight line and road structures	Sight line shall be free from obstruction by vegetation	Daily	Visual with video/image backup	Removal of Trees	Immediate	IRC:SP 84-2014
<b>Rest Areas</b>	Cleaning of toilets	-	Daily	-	-	Every 4 hours	
	Defects in electrical, water and sanitary installations	-	Daily	-	Rectification	24 hours	
<b>Other Project Facilities and Approach roads</b>	Damage or deterioration in Approach Roads, pedestrian facilities, truck lay-bys, bus-bays, bus-shelters, cattle crossings, Traffic Aid Posts, Medical Aid Posts and other works		Daily	-	Rectification	15 days	IRC:SP 84-2014
<b>Pipe/box/slab culverts</b>	Free waterway/unobstructed flow section	85% of culvert normal flow area to available.	2 times in a year (before and after rainy season)	Inspection by Bridge Engineer as per IRC SP: 35-1990 and recording of depth of silting and area of vegetation.	Cleaning silt up soils and debris in culvert barrel after rainy season, removal of bushes and vegetation, U/s of barrel, under barrel and D/s of barrel before rainy season.	15 days before onset of monsoon and within 30 days after end of rainy season.	IRC 5-2015, IRC SP:40-1993 and IRC SP:13-2004

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
	Leak-proof expansion joints if any	No leakage through expansion joints	Bi-Annually	Physical inspection of expansion joints as per IRC SP: 35-1990 if any, for leakage strains on walls at joints.	Fixing with sealant suitably	30 days or before onset of rains whichever comes earlier	IRC SP:40-1993 and IRC SP:69-2011
	Structurally sound	Spalling of concrete not more than 0.25 sqm	BI-Annually	Detailed inspection of all components of culvert as per IRC SP:35-1990 and recording the defects	Repairs to spalling, cracking, delamination, rusting shall be followed as per IRC:SP:40-1993.	15 days	IRC SP 40-1993 and MORTH Specifications clause 2800
Delamination of concrete not more than 0.25 sq.m.							
Cracks wider than 0.3 mm not more than 1m aggregate length							
	Protection works in good condition	Damaged of rough stone apron or bank revetment not more than 3 sqm, damage to solid apron (concrete apron) not more than 1 sqm	2 times in a year (before and after rainy season)	Condition survey as per IRC P:35-1990	Repairs to damaged aprons and itching	30 days after defect observation or 2 weeks before onset of rainy season whichever is earlier.	IRC: SP 40-1993 and IRC:SP:13-2004.

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
<b>Bridges including ROBs Flyover etc. as applicable</b>	Riding quality or user comfort	No pothole in wearing coat on bridge deck	Daily	Visual inspection as per IRC SP:35-1990	Repairs to BC or wearing coat	15 days	MORT&H Specification 2811
<b>Bridge -Super Structure</b>	Bumps	No bump at expansion joint	Daily	Visual Inspection as per IRC SP:35-1990	Repairs to BC on either side of expansion joints, profile correction course on approach slab in case of settlement to approach embankment	15 days	MORT&H Specification 3004.2 & 2811.
	User safety (condition of crash barrier and guard rail)	No damaged or missing stretch of crash barrier or pedestrian hand railing	Daily	Visual inspection and detailed condition survey as per IRC SP: 35-1990.	Repairs and replacement of safety barriers as the case may be	3days	IRC: 5-1998, IRC SP: 84-2014 and IRC SP: 40-1993.
	Rusted reinforcement	Not more than 0.25 sq.m	Bi-Annually	Detailed condition survey as per IRC SP: 35-1990 using Mobile Bridge Inspection Unit	All the corroded reinforcement shall need to be thoroughly cleaned from rusting and applied with anti-corrosive coating	15 days	IRC SP: 40-1993 and MORTH Specification 1600.
	Spalling of concrete	Not more than 0.50 sq.m					
	Delamination	Not more than 0.50 sq.m					

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
					before carrying out the repairs to affected concrete portion with epoxy mortar / concrete.		
	Cracks wider than 0.30 mm	Not more than 1m total length	Bi-Annually	Detailed condition survey as per IRC SP: 35-1990 using Mobile Bridge Inspection Unit	Grouting with epoxy mortar, investigating causes for cracks development and carry out necessary rehabilitation.	48 Hours	IRC SP: 40-1993 and MORTH Specification 2800.
	Rainwater seepage through deck slab	Leakage - nil	Quarterly	Detailed condition survey as per IRC SP: 35-1990 using Mobile Bridge Inspection Unit	Grouting of deck slab at leakage areas, waterproofing, repairs to drainage spouts	1 months	MORTH specifications 2600 & 2700.
	Deflection due to permanent loads and live loads	Within design limits	Once in every 10 years for spans more than 40 m	Load test method	Carry out major rehabilitation works on bridge to retain original design loads capacity	6 months	IRC SP: 51-1999.

<b>Asset Type</b>	<b>Performance Parameter</b>	<b>Level of Service (LOS)</b>	<b>Frequency of Measurement</b>	<b>Testing Method</b>	<b>Recommended Remedial measures</b>	<b>Time limit for Rectification</b>	<b>Specifications and Standards</b>
	Vibrations in bridge deck due to moving trucks	Frequency of vibrations shall not be more than 5 Hz	Once in every 5 years for spans more than 30m and every 10 years for spans between 15 to 30 m	Laser displacement sensors or laser vibrometers	Strengthening of super structure	4 months	AASHTO LRFD specifications
	Leakage in Expansion joints	No damage to elastomeric sealant compound in strip seal expansion joint, no leakage of rain water through expansion joint in case of buried and asphalt plug and copper strip joint.	Bi-Annually	Detailed condition survey as per IRC SP:35-1990 using Mobile Bridge Inspection Unit	Replace of seal in expansion joint	15 days	MORTH specifications 2600 and IRC SP: 40-1993.
	Debris and dust in strip seal expansion joint	No dust or debris in expansion joint gap	Monthly	Detailed condition survey as per IRC SP:35-1990 using Mobile Bridge Inspection Unit	Cleaning of expansion joint gaps thoroughly	3 days	MORTH specifications 2600 and IRC SP: 40-1993.
	Drainage spouts	No down take pipe missing/broken below soffit of the deck slab. No silt, debris, clogging of drainage spout collection chamber.	Monthly	Detailed condition survey as per IRC SP: 35-1990 using	Cleaning of drainage spouts thoroughly. Replacement of missing/broken	3 days	MORTH specification 2700.

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
				Mobile Bridge Inspection Unit	down take pipes with a minimum pipe extension of 500mm below soffit of slab. Providing sealant around the drainage spout if any leakages observed.		
<b>Bridge-substructure</b>	Cracks/ spalling of concrete/rusted steel	No cracks, spalling of concrete and rusted steel	Bi-Annually	Detailed condition survey as per IRC SP: 35-1990 using Mobile Bridge Inspection Unit	All the corroded reinforcement shall need to be thoroughly cleaned from rusting and applied with anti-corrosive coating before carrying out repairs to substructure by grouting/guniting and micro concreting depending on type of defect noticed	30 days	IRC SP: 40-1993 and MORTH specification 2800.
	Bearings	Delamination of bearing reinforcement not more than	Bi-Annually	Detailed condition	In case of failure of even one	3 months	MORTH specification

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
		5%, cracking or tearing of rubber not more than 2 locations per side, no rupture of reinforcement or rubber		survey as per IRC SP: 35-1990 using Mobile Bridge Inspection Unit	bearing on any pier/abutment, all the bearings on that pier/abutment shall be replaced, in order to get uniform load transfer on to bearings.		2810 and IRC SP: 40-199.
<b>Bridge Foundations</b>	Scouring around foundations	Scouring shall not be lower than maximum scour level for the bridge	Bi-Annually	Condition survey and visual inspection as per IRC SP:35-1990 using Mobile Bridge Inspection Unit. In case of doubt, use Underwater camera for inspection of deep wells in major Rivers.	Suitable protection works around pier/abutment	1 month	IRC SP: 40-1993, IRC 83-2014, MORTH specification 2500
	Protection works in good condition	Damaged of rough stone apron or bank revetment not more than 3 sq.m, damage to solid	2 times in a year (before and after rainy season)	Condition survey as per IRC SP:35-1990	Repairs to damaged aprons and pitching.	30 days after defect observation or 2 weeks	IRC: SP 40-1993 and IRC:SP:13-2004.

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
		apron (concrete apron) not more than 1 sq.m				before onset of rainy season whichever is earlier.	
<p><b>Note:</b> Any Structure during the entire contract period which is found that does not complies with all requirements of this Table will be prepared, rehabilitated or even reconstructed under the scope of the contractor.</p>							

Table 4: Maintenance Criteria for Structures and Culverts:

**Table 5: Maintenance Criteria for Hill Roads**

In addition to above, for hill roads the following provisions for maintenance is also to done.

<b>Hill Roads</b>		
(i)	Damage to Retaining wall/ Breast wall	7 (Seven) days
(ii)	Landslides requiring clearance	12 (Twelve) hours
(iii)	Snow requiring clearance	24 (Twenty Four) hours

**Note:** For all tables 1 to 5 above, latest BIS & IRC standards (even those not indicated herewith) along with MoRTH specifications shall be binding for all maintenance activities.

#### A. Flexible Pavement

<b>Nature of Defect or deficiency</b>		<b>Time limit for repair/rectification</b>
<b>(b) Granular earth shoulders, side slopes, drains and culverts</b>		
(i)	Variation by more than 1% in the prescribed slope of camber/cross fall (shall not be less than the camber on the main carriageway)	7 (seven) days
(ii)	Edge drop at shoulders exceeding 40 mm	7 (seven) days
(iii)	Variation by more than 15% in the prescribed side (embankment) slopes	30 (thirty) days
(iv)	Rain cuts/gullies in slope	7 (seven) days
(v)	Damage to or silting of culverts and side drains	7 (seven) days
(vi)	Desilting of drains in urban/semi-urban areas	24 (twenty four) hours
(vii)	Railing, parapets, crash barriers	7 (seven) days (Restore immediately if causing safety hazard)
<b>(c) Road side furniture including road sign and pavement marking</b>		
(i)	Damage to shape or position, poor visibility or loss of retro-reflectivity	48 (forty eight) hours
(ii)	Painting of km stone, railing, parapets, crash barriers	As and when required/ Once every year
(iii)	Damaged/missing signs road requiring replacement	7 (seven) days
(iv)	Damage to road mark ups	7 (seven) days
<b>(d) Road lighting</b>		
(i)	Any major failure of the system	24 (twenty four) hours
(ii)	Faults and minor failures	8 (eight) hours
<b>(e) Trees and plantation</b>		
(i)	Obstruction in a minimum head- room of 5 m above carriageway or obstruction in visibility of road signs	24 (twenty four) hours
(ii)	Removal of fallen trees from carriageway	4 (four) hours
(iii)	Deterioration in health of trees and bushes	Timely watering and treatment
(iv)	Trees and bushes requiring replacement	30 (thirty) days
(v)	Removal of vegetation affecting sight line and road Structures	15 (fifteen) days

Nature of Defect or deficiency		Time limit for repair/rectification
<b>(f) Rest area</b>		
(i)	Cleaning of toilets	Every 4 (four) hours
(ii)	Defects in electrical, water and sanitary installations	24 (twenty four) hours
<b>(g) [Toll Plaza]</b>		
<b>(h) Other Project Facilities and Approach roads</b>		
(i)	Damage in approach roads, pedestrian facilities, truck lay-byes, bus-bays, bus-shelters, cattle crossings, [Traffic Aid Posts, Medical Aid Posts] and service roads	15 (fifteen) days
(ii)	Damaged vehicles or debris on the road	4 (four) hours
(iii)	Malfunctioning of the mobile crane	4 (four) hours
<b>Bridges</b>		
<b>(a) Superstructure</b>		
(i)	Any damage, cracks, spalling/ scaling Temporary measures Permanent measures	within 48 (forty eight) hours within 15 (fifteen) days or as specified by the Authority's Engineer
<b>(b) Foundations</b>		
(i)	Scouring and/or cavitation	15 (fifteen) days
<b>(c) Piers, abutments, return walls and wing walls</b>		
(i)	Cracks and damages including settlement and tilting, spalling, scaling	30 (thirty) days
<b>(d) Bearings (metallic) of bridges</b>		
(i)	Deformation, damages, tilting or shifting of bearings	15 (fifteen) days Greasing of metallic bearings once in a year
<b>(e) Joints</b>		
(i)	Malfunctioning of joints	15 (fifteen) days
<b>(f) Other items</b>		
(i)	Deforming of pads in elastomeric bearings	7 (seven) days
(ii)	Gathering of dirt in bearings and joints; or clogging of spouts, weep holes and vent-holes	3 (three) days
(iii)	Damage or deterioration in kerbs, parapets, handrails and crash barriers	3 (three) days (immediately within 24 hours if posing danger to safety)
(iv)	Rain-cuts or erosion of banks of the side slopes of approaches	7 (seven) days
(v)	Damage to wearing coat	15 (fifteen) days
(vi)	Damage or deterioration in approach slabs, pitching, apron, toes, floor or guide bunds	30 (thirty) days
(vii)	Growth of vegetation affecting the structure or obstructing the waterway	15 (fifteen) days
<b>(g) Hill Roads</b>		
(i)	Damage to retaining wall/breast wall	7 (seven) days
(ii)	Landslides requiring clearance	12 (twelve) hours

Nature of Defect or deficiency		Time limit for repair/rectification
(iii)	Snow requiring clearance	24 (twenty four) hours

**[Note:** 1.Where necessary, the Authority may modify the time limit for repair/rectification, or add to the nature of Defect or deficiency before issuing the bidding document, with the approval of the competent authority.].

2. in case of minor damage (beyond 20%) to hill slope treatment work done as per scope, timeline for rectification /repair to be decided by the authority which shall be final and binding

## **Schedule - F**

**(See Clause 4.1 (vii)(a))**

### **Applicable Permits**

#### **1. Applicable Permits**

- (i) The Contractor shall obtain, as required under the Applicable Laws, the following Applicable Permits:
  - (a) Permission of the State Government for extraction of boulders from quarry;
  - (b) Permission of Village Panchayats and Pollution Control Board for installation of crushers;
  - (c) Licence for use of explosives;
  - (d) Permission of the State Government for drawing water from river/reservoir;
  - (e) Licence from inspector of factories or other competent Authority for setting up batching plant and hot mix plant;
  - (f) Clearance of Pollution Control Board for setting up batching plant;
  - (g) Clearance of Village Panchayats and Pollution Control Board for setting up asphalt plant;
  - (h) Permission of Village Panchayats and State Government for borrow earth, dumping zones and
  - (i) Any other permits or clearances required under Applicable Laws.
- (ii) Applicable Permits, as required, relating to environmental protection and conservation shall have been procured by the Authority in accordance with the provisions of this Agreement.

**Schedule – G**

**(See Clauses 7.1 and 19.2)**

**Annex-I**

(See Clause 7.1)

Form of Bank Guarantee

**[Performance Security / Additional Performance Security]**

To

**Chief Engineer Level-1,  
National Highways,  
PWD Uttarakhand, Dehradun.**

WHEREAS:

- (A) \_\_\_\_\_[name and address of contractor] (hereinafter called the “Contractor”) and [name and address of the authority], (hereinafter called the “Authority”) have entered into an agreement (hereinafter called the “Agreement”) for the construction of the \*\*\*\*\* section of [National Highway No.\*\*] on Engineering, Procurement and Construction (the “EPC”) basis, subject to and in accordance with the provisions of the Agreement
- (B) The Agreement requires the Contractor to furnish a Performance Security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the {Construction Period/ Defects Liability Period and Maintenance Period} (as defined in the Agreement) in a sum of Rs..... cr. (Rupees ..... crore) (the “Guarantee Amount”).
- (C) We, ..... through our branch at ..... (the “Bank”) have agreed to furnish this bank guarantee (hereinafter called the “Guarantee”) by way of Performance Security.

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

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor’s obligations during the {Construction Period/ Defects Liability Period and Maintenance Period} under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
2. A letter from the Authority, under the hand of an officer not below the rank of Superintending Engineer 10th NH Circle, PWD, Yamuna Colony, Dehradun Uttarakhand that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the

Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfilment and/ or performance of all or any of the obligations of the Contractor contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.
6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Agreement or for the fulfilment, compliance and/or performance of all or any of the obligations of the Contractor under the Agreement.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Guarantee shall cease to be in force and effect on \*\*\*\*\$. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.
9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.
12. This Guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.
13. The Guarantor/ bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform and shall invariably send an advice of this Bank Guarantee to the Designated bank of MORTH , details of which as under:

S. no.	Particular	Details to be selected in Bharatkosh
1	Ministry	RO MINISTRY OF ROAD TRASPOT & HIGHWAYS
2	Purpose	Sale of Tender document
3	Pay & Account Office (PAO)	034415-PAO(NH), New Delhi
4	Drawing and Disbursing Office (DDO)	234444- ENGINEER LIASON OFFICER.

Signed and sealed this ..... day of ....., 20..... at  
 ..... SIGNED, SEALED AND DELIVERED

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

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

NOTES:

- (i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.
- (ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch

§ Insert date being 2 (two) years from the date of issuance of this Guarantee (in accordance with Clause 7.2 of the Agreement).

**Annex - II**

**(Schedule - G)**

**(See Clause 19.2)**

**Form for Guarantee for Advance Payment**

TO

**Chief Engineer Level-1,  
National Highways,  
PWD Uttarakhand, Dehradun.**

WHEREAS:

- (A) [name and address of contractor] (hereinafter called the "Contractor") has executed an agreement (hereinafter called the "Agreement") with the [name and address of the authority], (hereinafter called the "Authority") for the construction of the \*\*\*\*\* section of [National Highway No. \*\*] on Engineering, Procurement and Construction (the "EPC") basis, subject to and in accordance with the provisions of the Agreement
- (B) In accordance with Clause 19.2 of the Agreement, the Authority shall make to the Contractor an interest bearing @Bank Rate + 3% advance payment (herein after called "Advance Payment") equal to 10% (ten per cent) of the Contract Price; and that the Advance Payment shall be made in two instalments subject to the Contractor furnishing an irrevocable and unconditional guarantee by a scheduled bank for an amount equivalent to 110% (one hundred and ten percent) of such instalment to remain effective till the complete and full repayment of the instalment of the Advance Payment as security for compliance with its obligations in accordance with the Agreement. The amount of {first/second} instalment of the Advance Payment is Rs. ----- cr. (Rupees ----- crore) and the amount of this Guarantee is Rs. ----- cr. (Rupees ----- crore) (the "Guarantee Amount")<sup>§</sup>.
- (C) We, ..... through our branch at ..... (the "Bank") have agreed to furnish this bank guarantee (hereinafter called the "Guarantee") for the Guarantee Amount.

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

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful repayment on time of the aforesaid instalment of the Advance Payment under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

<sup>§</sup> The Guarantee Amount should be equivalent to 110% of the value of the applicable instalment.

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

2. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
3. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
4. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Advance Payment or to extend the time or period of its repayment or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.
5. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Advance Payment.
6. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
7. The Guarantee shall cease to be in force and effect on \*\*\*\*. Unless a demand or claim under this Guarantee is made in writing on or before the aforesaid date, the Bank shall be discharged from its liabilities hereunder.
8. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

9. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
10. This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

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

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature) (Name) (Designation)

(Code Number)

(Address) NOTES:

- (i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.
- (ii) (ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

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<sup>§</sup> Insert a date being 90 (ninety) days after the end of one year from the date of payment of the Advance payment to the Contractor (in accordance with Clause 19.2 of the Agreement).

**SCHEDULE – H**

(See Clauses 10.1.(iv) and 19.3)

1.1 Contract Price Weightages.

1.2 The Contract Price for this Agreement is Rs. 772.38 CR.

1.3 Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
1	Road works including culverts, widening and repair of culverts.	6.58%	<b>A - Widening and strengthening of existing road</b>	
			(1) Earthwork upto top of the embankment	0.00%
			(2) Subgrade (SG)	0.00%
			(3) Subbase course (GSB)	0.00%
			(4) Non bituminous base course (WMM)	0.00%
			(5) Bituminous base course	0.00%
			(6) Wearing coat	0.00%
			(7) widening and repair of culverts	0.00%
			<b>B.1 - Reconstruction/ New alignment/bypass (Flexible pavement)</b>	
			<b>Main carriageway</b>	
			(1) Earthwork upto top of the embankment	32.67%
			(2) Subgrade (SG)	1.39%
			(3) cement treated sub-base/ Granular Sub-base course (CTSB/GSB)	9.02%
			(4) Non bituminous base course/ cement treated base (WMM/ CTB)	3.94%
			(5) Bituminous base course	6.01%
			(6) Wearing coat	4.66%
<b>Interchange</b>				
(1) Earthwork upto top of the embankment	5.70%			

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km)..

**H.276**

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			(2) Subgrade (SG)	0.82%
			(3) cement treated sub-base/ Granular Sub-base course (CTSB/GSB)	2.26%
			(4) Non bituminous base course/ cement treated base (WMM/ CTB)	1.10%
			(5) Bituminous base course	2.18%
			(6) Wearing coat	1.71%
			<b>C.1 - Reconstruction/ New Service road/ Slip road (flexible Pavement)</b>	
			(1) Earthwork upto top of the embankment	1.33%
			(2) Subgrade (SG)	1.36%
			(3) cement treated sub-base/ Granular Sub-base course (CTSB/GSB)	4.19%
			(4) Non bituminous base course/ cement treated base (WMM/ CTB)	1.81%
			(5) Bituminous base course	0.23%
			(6) Wearing coat	2.19%
			(1) Hume pipe culvert	0.30%
			(2) Box culverts	17.15%
2	Minor Bridges/ Underpasses/ Overpasses	1.20%	<b>A.1 - Widening and repairs of Minor Bridges</b>	
			(1) Foundation: (on completion of the foundation work of abutments, piers.)	0.00%
			(2) Sub-structure: (on completion of abutments, piers upto abutment/pier cap.)	0.00%
			(3) Super-structure (on completion of the super structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barrier road sign, & marking, tests on completion etc. complete in all respect)	0.00%

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			(4) Approaches (on completion of approaches including wing wall/ return wall, retaining walls, stone pitching, protection works for floor, embankment slope etc.complete in all respect and fit for use.	0.00%
			<b>A.2 - New of Minor Bridges</b>	
			(1) Foundation : (on completion of the foundation work of abutments, piers.)	12.19%
			(2) Sub-structure : (on completion of abutments, piers upto abutment/pier cap.)	33.38%
			(3) Super-structure (on completion of the super structure upto deck slab including bearing.	9.49%
			(4) Miscellaneous Works : On completion of wearing coat, expansion joint, crash barrier, railings, protection works and any remaining work associated to bridge including tests on bridge.	29.60%
			(5) Approaches (on completion of approaches including retaining walls, stone pitching, protection works complete in all respect and fit for use.	0.00%
			(6) Guide Bunds and River Training works: (On completion of Guide Bunds and river training works complete in all respects.)	0.00%
			<b>B.1 - Widening and repairs of Underpasses/Overpasses</b>	
			Underpasses / Overpasses	
	Minor Bridges/ Underpasses/ Overpasses		<b>B.2 - New Underpasses/Overpasses</b>	
			(1) Foundation: On completion of the foundation work of abutments and piers	2.39%
			(2) Sub-structure: on completion of abutments, piers upto the abutment/pier cap	2.16%

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			(3) Super-structure: On completion of the super-structure upto deck slab including bearing.	10.80%
			(4) Miscellaneous Works : On completion of wearing coat, expansion joint, crash barrier, railings, protection works and any remaining work associated to bridge including tests on bridge.	0.00%
			(5) Approaches: On completion of approaches including Wing walls/ Return walls, Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	0.00%
<b>3</b>	Major Bridge works and ROB/RUB/elevated sections/flyovers including viaducts, if any	73.46%	<b>A.1 - Widening and repairs of existing major bridges</b>	
			(1) Foundation	
			i) Pile Foundation	0.00%
			ii) Open Foundation	0.00%
			(2) Sub structure	0.00%
			(3) Superstructure (including bearing)	0.00%
			(4) wearing coat (including expansion joint)	0.00%
			(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)	0.00%
			(6) wing walls/return walls	0.00%
			(7) Guide bunds, river training works etc.	0.00%
			(8) Approaches (including Retaining walls, stone pitching and protection works for floor, embankment slope etc.).	0.00%
			<b>A.2 - New/ Reconstruction major bridges</b>	
			(1) Foundation : Foundation of abutment, piers	
			(i) Well Foundation	0.00%
			(ii) Pile Foundation	2.73%

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			(iii) Open Foundation	4.04%
			(2) Sub-structure:	5.20%
			(3) Super-structure (including bearings)	17.30%
	Major Bridge works and ROB/RUB/elevated sections/flyovers including viaducts, if any		(4) Wearing Coat including expansion joints	3.15%
			(5) Miscellaneous Items (like hand rails, crash barriers, road markings etc.)	0.67%
			(6) Wing walls/return walls	0.83%
			(7) Guide Bunds, River Training works etc.	0.00%
			(8) Approaches (including Retaining walls, stone pitching and protection works for floor, embankment slope, etc.)	3.08%
			<b>B.1 - Widening and repairs of (a) ROB and (b) RUB</b>	
			(1) Foundation	
			i) Pile Foundation	0.00%
			ii) Open Foundation	0.00%
			(2) Sub structure	0.00%
			(3) Superstructure (including bearing)	0.00%
			(4) wearing coat : (a) in case of ROB - wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB - rigid pavement under RUB including drainage facility complete in all respect as specified.	0.00%
			(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)	0.00%
			(6) wing walls/return walls	0.00%
			(7) Approaches (including retaining walls, stone pitching, protection works).	0.00%
			<b>B.2 - New ROB</b>	
			(1) Foundation :	
			(i) Well Foundation	0.00%

Construction for 4 laning of Rishikesh Bypass from km 529+750 of NH-7 near Teenpani Flyover to km 542+420 near Khrasrote Bridge, passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km)..

**H.280**

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			(ii) Pile Foundation	0.57%
			(iii) Open Foundation	0.74%
			(2) Sub-structure:	0.79%
			(3) Superstructure (including bearing)	14.89%
			(4) wearing coat : (a) in case of ROB - wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB - rigid pavement under RUB including drainage facility complete in all respect as specified.	0.55%
			(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)	0.10%
			(6) wing walls/return walls	0.00%
	Major Bridge works and ROB/RUB/elevated sections/flyovers including viaducts, if any		(7) Approaches (including retaining walls/ Reinforced earth wall approach, stone pitching, protection works).	0.00%
			<b>C.1 - Widening and repairs of Elevated section/Flyover/Grade Separators</b>	
			(1) Foundation	
			i) Pile Foundation	0.00%
			ii) Open Foundation	0.00%
			(2) Sub structure	0.00%
			(3) Superstructure (including bearing)	0.00%
			(4) wearing coat including expansion joint	0.00%
			(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)	0.00%
			(6) wing walls/return walls	0.00%
			(7) Approaches (including retaining walls/ Reinforced earth walls, stone pitching, protection works).	0.00%
			<b>C.2 - New Elevated section/ Flyover/ Grade Separators</b>	

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			(1) Foundation :	
			(i) Well Foundation	0.00%
			(ii) Pile Foundation	0.00%
			(iii) Open Foundation	6.22%
			(2) Sub structure	7.57%
			(3) Superstructure (including bearing)	22.61%
			(4) wearing coat including expansion joint	5.28%
			(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)	0.68%
			(6) wing walls/return walls	0.00%
			(7) Approaches (including retaining walls/ Reinforced earth walls, stone pitching, protection works).	3.00%
4	Other works	12.67%	(i) Toll plaza including it's approach	0.00%
			(ii) Road side drains	
			(a) Drain	1.54%
			(b) Cover Slab	0.04%
			(iii) Road signs, markings, km stones, safety devices etc.	2.53%
			(iv) Overhead gantry mounted sign	0.33%
			(v) Project facilities	
			(a) Bus Bay with Bus Shelter	0.03%
			(b) Truck laybys	0.00%
			c) Rest area/ Wayside amenity	0.00%
			(d) others	
			- Street light	0.56%
			- Utility ducts	0.19%
			- Boundary Wall at PROW	3.93%
			- Rainwater harvesting	0.05%
			- Advance Traffic management system	0.00%
			(vi) Road side plantation	0.00%

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			(vii) Protection works other than approaches to the bridges, elevated sections, flyovers/ grade separators and ROBs/RUBs.	
			(a) Thrie/W beam metal Crash barrier	10.56%
			(b) Retaining wall / toe wall	68.44%
			(c) Breast wall	5.51%
			(viii) Safety and traffic management during construction	0.00%
			(ix) Junction improvement	0.26%
			(x) Side Slope Protection works Turfing, geo-membrane blanketing and stone pitching	2.44%
			(xi) Miscellaneous - O&M center, medical aid post, highway petrol unit, vehicle rescue center etc.	0.00%
			(xii) Canopy at Herbal Park approach	3.61%
5	Electrical utilities and public Health Utilities (Water pipe lines and sewage lines)	6.08%	PTCUL - EHT line - EHT crossings	67.27%
			TATA - EHT line - EHT crossings	21.82%
			UPCL - HT/ LT line underground - HT/ LT crossings	9.23%
			Payjal sansthan - Water pipeline - Water pipeline crossings	0.99%
			Uttarakhand Ja sansthan - Water pipeline - Water pipeline crossings	0.69%

\* Note - In case of CTB and AIL layer, this stage may be modified suitably to permit separate weightages for each of these layers.

# Note - for specific type of protection work detailed stages can be included.

### 1.3 Procedure of estimating the value of work done.

#### 1.3.1 Road works

Procedure for estimating the value of road work done shall be as follows:

**Table 1.3.1**

Stage of Payment	Percentage -weightage	Payment Procedure
<b>A - Widening and strengthening of existing road</b>		
(1) Earthwork upto top of the embankment	0.00%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500m which ever is less.
(2) Subgrade	0.00%	
(3) Subbase course (GSB)	0.00%	
(4) Non bituminous base course*	0.00%	
(5) Bituminous base	0.00%	
(6) wearing coat	0.00%	
(7) widening and repair of culverts	0.00%	
<b>B.1 - Reconstruction/ New realignment/bypass (Flexible pavement)</b>		
<b>Main carriageway</b>		
(1) Earthwork upto top of the embankment	32.67%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500m which ever is less.
(2) Subgrade	1.39%	
(3) cement treated sub-base/ Granular Sub-base course (CTSB/GSB)	9.02%	
(4) Non bituminous base course/ cement treated base (WMM/ CTB)	3.94%	
(5) Bituminous base	6.01%	
(6) wearing coat	4.66%	
<b>Interchange</b>		
(1) Earthwork upto top of the embankment	5.70%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a
(2) Subgrade	0.82%	
(3) cement treated sub-base/ Granular Sub-base course (CTSB/GSB)	2.26%	
(4) Non bituminous base course/ cement treated base (WMM/ CTB)	1.10%	

Stage of Payment	Percentage -weightage	Payment Procedure
(5) Bituminous base	2.18%	length of not less than 500m which ever is less.
(6) wearing coat	1.71%	
<b>B.2 - Reconstruction/ New realignment/bypass (Rigid Pavement)</b>		
(1) Earthwork upto top of the embankment	0.00%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500m which ever is less.
(2) Subgrade	0.00%	
(3) Subbase course (GSB)	0.00%	
(4) Dry lean concrete (DLC)	0.00%	
(5) Pavement quality concrete (PQC) course	0.00%	
<b>C.1 - Reconstruction/ New Service road/ Slip Road (flexible Pavement)</b>		
(1) Earthwork upto top of the Subgrade including Shoulder	1.33%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500m which ever is less.
(2) Subgrade	1.36%	
(3) cement treated sub-base/ Granular Sub-base course (CTSB/GSB)	4.19%	
(4) Non bituminous base course/ cement treated base (WMM/ CTB)	1.81%	
(4) Bituminous base	0.23%	
(5) wearing coat	2.19%	
<b>C.2 - Reconstruction/ New Service road/ Slip road (Rigid Pavement)</b>		
(1) Earthwork upto top of the embankment	0.00%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500m which ever is less.
(2) Subgrade	0.00%	
(3) Subbase course (GSB)	0.00%	
(4) Dry lean concrete (DLC)	0.00%	
(5) Pavement quality concrete (PQC) course	0.00%	
<b>D. - Reconstruction/ New culverts on existing road, Realignments, bypasses:</b>		
(1) Hume Pipe culvert	0.30%	Cost of each culvert shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of at least one culvert. 75% of the cost will be payable on completion of box/ abutments and slab/ pipe and head wall. Remaining 25% will become payable on completion of protection works including return/ wing walls and any other work associated with culverts.
(3) Box Culvert	17.15%	

\* Note - In case of CTB and AIL layer, this stage may be modified suitably to permit separate weightages for each of these layers.

'@. For example, if the total length of bituminous work to be done is 100 km, the cost per km of bituminous work shall be determined as follows.

Cost per km = P x weightage for road work x weightage for bituminous work x (1/L)

Where P= Contract Price L = Total length in km

Similarly, the rates per km for other stages shall be worked out accordingly.

**Note: The length affected due to law and order problems or litigation during execution due to which the Contractor is unable to execute the work, may be deducted from the total project length for payment purposes. The total length calculated here is only for payment purposes and will not affect and referred in other clauses of the Contract Agreement.**

### 1.3.2 Minor Bridges and Underpasses/Overpasses

Procedure for estimating the value of Minor Bridge and underpasses/Overpasses shall be as stated in table 1.3.2:

Table 1.3.2

Stage of Payment	Weightage	Payment Procedure
<b>A.1 - Widening and repairs of Minor Bridges</b>		Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length (m) of the minor bridges.
(1) <b>Foundation:</b> (on completion of the foundation work of abutments, piers.)	0.00%	(i) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e completion of atleast two foundations of each bridge. In case where load testing is specified for foundation, the trigger of first payment shall include load testing also.
(2) <b>Sub-structure:</b> (on completion of abutments, piers upto abutment/pier cap.)	0.00%	(ii) Sub - structure - Payment shall be made on pro-rata basis on completion of stage i.e. completion of atleast one sub-structure upto abutment/ pier cap level of each bridge.
(3) <b>Super-structure</b> (on completion of the super structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barrier road sign, & marking, tests on completion etc. complete in all respect)	0.00%	(iii) Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e., completion of super-structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause.
(4) <b>Approaches</b> (on completion of approaches including wing wall/ return wall, retaining walls, stone pitching, protection works for floor, embankment slope etc.complete in all respect and fit for use.	0.00%	(iv) Approaches: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of approaches including wing walls/ return walls, retaining walls, stone pitching in all respect as specified in the column of "Stage of Payment" in this sub-clause for each bridge.
<b>A.2 - New of Minor Bridges</b>		Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length (m) of the minor bridges.
(1) <b>Foundation :</b> (on completion of the foundation work of abutments, piers.)	12.19%	(i) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage completion of atleast two foundations of each bridge. In case where load testing is specified for foundation, the trigger of first payment shall include load testing also.

Stage of Payment	Weightage	Payment Procedure
(2) <b>Sub-structure</b> : (on completion of abutments, piers upto abutment/pier cap.)	33.38%	(ii) Sub - structure - Payment shall be made on pro-rata basis on completion of stage i.e. completion of atleast one sub-structure upto abutment/ pier cap level of each bridge.
(3) <b>Super-structure</b> (on completion of the super structure upto deck slab including bearing.	9.49%	(iii) Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e., completion of super-structure of at least one span upto deck slab including bearing as specified in the column of "Stage of Payment" in this sub-clause. If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.
(4) <b>Miscellaneous Works</b> : On completion of wearing coat, expansion joint, crash barrier, railings, protection works and any remaining work associated to bridge including tests on bridge.	29.60%	(iv) Miscellaneous Works: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of wearing coat, expansion joint, crash barrier, railing, protection works, drainage and any other remaining work associated to bridge including tests on bridge for each bridge
(5) <b>Approaches</b> (on completion of approaches including retaining walls, stone pitching, protection works complete in all respect and fit for use.	0.00%	(v) Approaches: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of approaches including wing walls/ return walls, retaining walls, stone pitching in all respect as specified in the column of "Stage of Payment" in this sub-clause for each bridge.
(6) <b>Guide Bunds and River Training works:</b> (On completion of Guide Bunds and river training works complete in all respects.)	0.00%	(vi) Guide Bunds and River Training Works: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of Guide Bunds and River training Works in all respects as specified for each bridge.
<b>B.1 - Widening and repairs of Underpasses/Overpasses</b>	0.00%	Cost of each underpass/overpass shall be determined on pro rata basis with respect to the total linear length of the underpass/overpasses. Payment shall be made on the completion of widening & repair works of a underpass/overpasses.
<b>B.2 - Underpasses/ Overpasses</b>		Cost of each Underpass/Overpass shall be

Stage of Payment	Weightage	Payment Procedure
(1) <b>Foundation:</b> On completion of the foundation work of abutments and piers	2.39%	determined on pro rata basis with respect to the total linear length (m) of the Underpasses/Overpasses. (i) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of foundation(s) of each underpass/overpass. In case where load testing is specified for foundation, the trigger of first payment shall include load testing also.
(2) <b>Sub-structure:</b> on completion of abutments, piers upto the abutment/pier cap	2.16%	(ii) Sub-structure: Payment shall be made on pro-rata basis on completion of stage i.e. completion of atleast one sub-structure upto abutment/ pier cap level of each bridge.
(3) <b>Super-structure:</b> On completion of the super-structure upto deck slab including bearing.	10.80%	(iii) Super-structure: Payment shall be made on pro-rata basis on completion of a stage 'i.e. completion of super-structure of at least one span upto deck slab including bearing as specified in the column of "Stage of Payment" in this sub-clause: If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.
(4) <b>Miscellaneous Works :</b> On completion of wearing coat, expansion joint, crash barrier, railings, protection works and any remaining work associated to bridge including tests on bridge.	0.00%	(iv) Miscellaneous Works: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of wearing coat, expansion joint, crash barrier, railing, protection works and any other remaining work associated to bridge including tests on bridge for each bridge.
(4) <b>Approaches:</b> On completion of approaches including Wing walls/ Return walls, Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	0.00%	(v) Approaches: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of approaches including wing wall/ return wall, retaining walls, Reinforced Earth walls, stone pitching, protection works complete in all respect for each bridge.

### 1.3.3 Major Bridge works, ROB/RUB and Structures

Procedure for estimating the value of major Bridge works, ROB/RUB and structure work shall be as stated in table 1.3.3:

**Table 1.3.3**

Stage of payment	Weightage	Payment procedure
<b>A.1 - Widening and repairs of existing major bridges</b>		Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridges.
(1) Foundation	0.00%	(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundation of each of the major Bridge as specified hereinunder.
(i) Pile Foundation (a) Piling - On completion of pile upto bottom of pile cap (b) Pile Cap : On completion of pile cap	0.00%	(i) Pile Foundation (a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on prorata basis. (b) Pile Cap : Payment of 30% on pro-rata basis shall be made on completion of pile cap. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(ii) Open Foundation	0.00%	(ii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of atleast one foundation.
(2) Sub-structure	0.00%	(2) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one sub- structure of abutments/piers upto abutment/ pier cap level of each of the major bridge.
(3) Super-structure (including bearings)	0.00%	(3) Super-structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of superstructure upto deck slab including bearings of at least one span as specified here in under : If pre-cast RCC/ PSC/ Steel girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.
(4) Wearing Coat including expansion joints	0.00%	(4) Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified for each major bridge.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.00%	(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified for each major bridge.

Stage of payment	Weightage	Payment procedure
(6) Wing walls/return walls	0.00%	(6) Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each major bridge.
(7) Guide Bunds, River Training works etc.	0.00%	(7) Guide Bunds, River Training works: Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified for each major bridge.
(8) Approaches (including Retaining walls, stone pitching and protection works)	0.00%	(8) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified for each major bridge.
<b>A.2 - New/ Reconstruction major bridges</b>		Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge.
(1) Foundation	0.00%	(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundation of each of the major Bridge as specified here in under:
(i) Well Foundation (a) On completion of Cutting Edge + Well Curb (b) Well steining : On completion of well steining upto bottom of well cap. (c) On completion of bottom plug + top plug (if provisioned as per design) + well cap	0.00%	(i) Well Foundation (a) Cutting Edge + Well Curb: Payment of 10% shall be made on completion of a stage i.e. completion of cutting edge + well curb. (b) Well steining : Payment of 65% shall be made on completion of well steining upto bottom of well cap. The payment stage shall be further sub-divided on pro-rata basis i.e. (i) on completion upto 10 m and (ii) on completion of each subsequent 5 m or part thereof. (c) Bottom plug + top plug (if provisioned as per design) + well cap: Payment of 25% shall be made on completion of a stage i.e. completion of bottom plug, back fill, top plug and well cap.
(ii) Pile Foundation (a) Piling - On completion of pile upto bottom of pile cap (b) Pile Cap : On completion of pile cap	2.73%	(ii) Pile Foundation (a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on prorota basis. (b) Pile Cap : Payment of 30% shall be made on completion of pile cap. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(iii) Open Foundation	4.04%	(iii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of at least one foundation.
(2) Sub-structure	5.20%	(ii) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. completion of at

Stage of payment	Weightage	Payment procedure
		least one sub-structure of abutments/piers upto abutment/ pier cap level of each of the major bridge.
(3) Super-structure(including bearings)	17.30%	(3) Super-structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of superstructure upto deck slab including bearings of at least one span as specified here in under: If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon. (For cable stayed bridge and suspension cable bridge, detailed payment stage may be included on case to case basis)
(4) Wearing Coat including expansion joints	3.15%	(4) Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified for each major bridge.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.67%	(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified for each major bridge.
(6) Wing walls/return walls	0.83%	(6) Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each major bridge.
(7) Guide Bunds, River Training works etc.	0.00%	(7) Guide Bunds, River Training works: Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified for each major bridge.
(8) Approaches (including Retaining walls, stone pitching and protection works for floor, embankment slope etc.)	3.08%	(8) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified for each major bridge.
<b>B.1 - Widening and repairs of (a) ROB and (b) RUB</b>		Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUBs.
(1) Foundation		(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundation of each of the ROB/RUB as specified here in under.
(i) Pile Foundation(a) Piling - On completion of pile upto bottom of pile cap (b) Pile Cap : On completion of pile cap	0.00%	(i) Pile Foundation(a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on prorata basis. (b) Pile Cap : Payment of 30% on pro-rata basis shall be made on completion of pile cap. In case where load testing is required for

Stage of payment	Weightage	Payment procedure
		foundation, the trigger of first payment shall include load testing also where specified.
(ii) Open Foundation	0.00%	(ii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of atleast one foundation.
(2) Sub-structure	0.00%	(2) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one sub-structure of abutments/piers upto abutment/ pier cap level of each of the ROB/RUB.
(3) Super-structure (including bearings)	0.00%	(3) Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of superstructure upto deck slab including bearings of at least one span as specified here in under : If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.
(4) Wearing Coat including expansion joints in case of ROB. In case of RUB, rigid pavement under RUB including drainage facility as specified.	0.00%	(4) Wearing Coat: Payment shall be made on completion of (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified for each of the ROB and (b) in case of RUB- rigid pavement under RUB including drainage facility complete in all respects as specified for each of the RUB.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.00%	(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified for each of the ROB/ RUB.
(6) Wing walls/return walls	0.00%	(6) Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each of the ROB/ RUB.
(7) Approaches (including Retaining walls, stone pitching and protection works)	0.00%	(7) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified for each of the ROB/ RUB.
<b>B.2 - New ROB / RUB</b>		Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUBs.
(1) Foundation	0.00%	(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundation of each of the ROB/RUB as specified here in under:
(i) Well Foundation (a) On completion of Cutting Edge + Well Curb	0.00%	(i) Well Foundation (a) Cutting Edge + Well Curb: Payment of 10% shall be made on completion of a stage

Stage of payment	Weightage	Payment procedure
(b) Wellsteining : On completion of well steining upto bottom of well cap. (c) On completion of bottom plug + top plug (if provisioned as per design) + well cap		i.e. completion of cutting edge + well curb. (b) Well steining : Payment of 65% shall be made on completion of well steining upto bottom of well cap. The payment stage shall be further sub-divided on pro-rata basis i.e. (i) on completion upto 10 m and (ii) on completion of each subsequent 5 m or part thereof. (c) Bottom plug + top plug (if provisioned as per design) + well cap: Payment of 25% shall be made on completion of a stage i.e. completion of bottom plug, back fill, top plug and well cap.
(ii) Pile Foundation (a) Piling - On completion of pile upto bottom of pile cap (b) Pile Cap : On completion of pile cap	0.57%	(ii) Pile Foundation (a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on prorota basis. (b) Pile Cap : Payment of 30% shall be made on completion of pile cap. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(iii) Open Foundation	0.74%	(iii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of atleast one foundation.
2) Sub-structure	0.79%	(2) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one sub-structure of abutments/piers upto abutment/ pier cap level of each of the ROB/RUB.
(3) Super-structure (including bearings)	14.89%	(3) Super-structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of superstructure upto deck slab including bearings of at least one span as specified here in under : If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book. Applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.
(4) Wearing Coat including expansion joints in case of ROB. In case of RUB, rigid pavement under RUB including drainage facility as specified.	0.55%	(4) Wearing Coat: Payment shall be made on completion of (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified for each of the ROB and (b) in case of RUB- rigid pavement under RUB including drainage facility complete in all respects as specified for each of the RUB.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.10%	(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc.

Stage of payment	Weightage	Payment procedure
		complete in all respects as specified for each of the ROB/RUB.
(6) Wing walls/return walls	0.00%	(6)Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each of the ROB/RUB.
(7) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	0.00%	(7) Approaches: Payments shall be made on completion of both approaches of each ROB including stone pitching, protection works, etc. complete in all respects as specified here in under : If reinforced soil wall is used with facia panel/blocks, interim payment shall be made @75% of the Cost of that element as derived from MoRTH data Book. Applicable SOR of State PWD on Base Date with tender discount/ premium applied thereon.
<b>C.1 - Widening and repairs of Elevated section/Flyover/Grade Separators</b>		Cost of each structure shall be determined on pro rata basis with respect to the total linear length (m) of the structures.
(i) Foundation	0.00%	(1) Foundation : Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundation of each of the structure as specified here in under :
(i) Pile Foundation (a) Piling - On completion of pile upto bottom of pile cap (b) Pile Cap : On completion of pile cap	0.00%	(i) Pile Foundation (a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on prorata basis. (b) Pile Cap : Payment of 30% on pro-rata basis shall be made on completion of pile cap. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(ii) Open Foundation	0.00%	(ii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of atleast one foundation.
(2) Sub-structure	0.00%	(2) Sub-Structure:. Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one sub-structure of abutments/piers upto abutment/ pier cap level of each of the structure.
(3) Super-structure (including bearings)	0.00%	(3)Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure upto deck slab including bearings of at least one span as specified here in under : If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base

Stage of payment	Weightage	Payment procedure
		Date with tender discount/premium applied thereon.
(4) Wearing Coat including expansion joints	0.00%	(4) Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified for each of the structure.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.00%	(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified for each of the structure.
(6) Wing walls/return walls	0.00%	(6) Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each of the structure.
(7) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	0.00%	(7) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects of each structure.
<b>C.2 - New Elevated section/ Flyover/ Grade Separators</b>		Cost of each structure shall be determined on pro rata basis with respect to the total linear length (m) of the structures.
(1) Foundation		(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundation of each of the structure as specified here in under :
(i) Well Foundation(a) On completion of Cutting Edge + Well Curb(b) Wellsteining : On completion of well steining upto bottom of well cap.( c) On completion of bottom plug + top plug (if provisioned as per design) + well cap	0.00%	(i) Well Foundation(a)Cutting Edge + Well Curb:Payment of 10% shall be made on completion of a stage i.e. completion of cutting edge + well curb.(b)Well steining : Payment of 65% shall be made on completion of well steining upto bottom of well cap. The payment stage shall be further sub-divided on pro-rata basis i.e. (i) on completion upto 10 m and (ii) on completion of each subsequent 5 m or part thereof.(c)Bottom plug + top plug (if provisioned as per design) + well cap: Payment of 25% shall be made on completion of a stage i.e. completion of bottom plug, back fill, top plug and well cap.
(ii) Pile Foundation (a) Piling - On completion of pile upto bottom of pile cap (b) Pile Cap : On completion of pile cap	0.00%	(ii) Pile Foundation (a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on pro-rata basis. (b) Pile Cap : Payment of 30% shall be made on completion of pile cap. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(iii) Open Foundation	6.22%	(iii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of atleast one foundation.

Stage of payment	Weightage	Payment procedure
(2) Sub-structure	7.57%	(2) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one sub- structure of abutments/piers upto abutment/ pier cap level of each of the structure.
(3) Super-structure (including bearings)	22.61%	(3)Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure upto deck slab including bearings of at least one span as specified here in under: If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.
(4) Wearing Coat including expansion joints	5.28%	(4) Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified for each of the structure.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.68%	(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified for each of the structure.
(6) Wing walls/return walls	0.00%	(6)Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each of the structure.
(7) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	3.00%	(7) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified here in under : If reinforced soil wall is used with facia panel/blocks, interim payment shall be made @75% of the Cost of that element as derived from MoRTH data Book. Applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.

**Note :**

1. In case of innovative Major bridge projects like cable suspension/cable stayed/extra dozed and exceptionally long span bridges, the schedule may be modified as per site requirements before bidding with due approval of DG(RD)&SS, MOR&TH.
2. The schedule for exclusive tunnel projects may be prepared as per site requirements before bidding with due approval of DG(RD)&SS, MOR&TH.

**1.3.4 other works**

Procedure for estimating the value of other works done shall be as stated in table 1.3.4:

**Table 1.3.4**

<b>Stage of Payment</b>	<b>Weightage</b>	<b>Payment Procedure</b>
(i) Toll plaza	0.00%	Unit of measurement is each completed toll plaza. Payment for each toll plaza shall be made on pro rata basis with respect to the total of all toll plazas as specified here in under :
(a) DLC(LHS)		(a) DLC (LHS) : Payment of 12.5% on pro-rata basis shall be made on completion of a stage i.e. completion of DLC on LHS.
(b) DLC (RHS)		(b) DLC (RHS) : Payment of 12.5% on pro-rata basis shall be made on completion of a stage i.e. completion of DLC on LHS.
(c) PQC(LHS)		(c) PQC(LHS): Payment of 25% on pro-rata basis shall be made on completion of a stage i.e. completion of PQC on LHS.
(d) PQC(RHS)		(d)PQC(RHS): Payment of 25% on pro-rata basis shall be made on completion of a stage i.e. completion of PQC on RHS.
(e)Admin Building		(e) Admin Building: Payment of 10% on pro-rata basis shall be made on completion of a stage i.e. completion of Admin Building and miscellaneous works.
(f) Toll Booth, canopy, safety items and all other associated works		(f) Toll Booth, canopy, safety items and all other associated works: Payment of 15% on pro-rata basis shall be made on completion of a stage i.e. completion of Toll Booth, canopy, safety items and all other associated works.
(ii) Road side drains		Unit of measurement is linear length in km. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 5 % (five per cent) of the total length.
(a) Drains	1.54%	a) Drains: Unit of measurement is linear length in metre . Payment shall be made on pro rata basis on completion of a stage in a length of not less than 100 m on one side.
(b) Cover Slabs	0.04%	(b) Cover slabs: Unit of measurement is linear length in metre. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 100 m on one side.
(iii) Road signs, markings, km stones, safety devices	2.53%	Unit of measurement is linear length in km. Payment shall be made on prorata basis on completion of a stage in a length of not less than one Km on both sides.

Stage of Payment	Weightage	Payment Procedure
(iv) Overhead gantry mounted signs	0.33%	Unit of measurement is each number. Payment shall be made on pro-rata basis on completion of each overhead gantry mounted sign
(v) Project Facilities		Unit of measurement is each number.
a) Bus bays with shelter	0.03%	Payment shall be made on pro rata basis for completed facilities.
b) Truck lay-byes	0.00%	
c) Rest areas	0.00%	
d) Others		
- Street light	0.56%	
- Utility ducts	0.19%	
- Boundary Wall at PROW	3.93%	
- Rainwater harvesting	0.05%	
- Advance traffic management system	0.00%	
(vi) Roadside Plantation	0.00%	
(vii) Protection works other than approaches to the bridges, elevated sections, flyovers/ grade separators and ROBs/RUBs.		Unit of measurement is linear length. Payment against items (a), (b) & (c) shall be made on pro rata basis on completion of a stage in a length of not less than 10% (ten per cent) of the total length and 100 m whichever is less.
(a) Thrie/W beam metal Crash barrier	10.56%	
(b) Retaining wall / toe wall	68.44%	
(c) breast wall etc.	5.51%	
(viii) Safety and traffic management during construction	0.00%	Payment shall be made on prorata basis every six months.
(ix) Junctions improvement	0.26%	Payment shall be made on pro rata basis for completed facilities.
(x) Side Slope Protection works Turfing and stone pitching	2.44%	Payment shall be made on pro rata basis for completed facilities.
(xi) Miscellaneous - O&M center, medical aid post, highway petrol unit, vehicle rescue center etc.	0.00%	Payment shall be made on pro rata basis for completed facilities.
(xii) Canopy at Herbal Park approach	3.61%	Payment shall be made on pro rata basis for completed facilities.

## 2.0 Procedure for payment for Maintenance

2.1 The cost for maintenance shall be as stated in Clause 14.1.1.

2.2 Payment for Maintenance shall be made in quarterly instalments in accordance with the provisions of Clause 19.7.

### 1.3.5 Electrical utilities and public Health Utilities (Water pipe lines and sewage lines)

Procedure for estimating the value of other works done shall be as stated in table 1.3.5:

**Table 1.3.5**

Stage of Payment	Weightage	Payment Procedure
PTCUL - EHT line - EHT crossings	67.27%	Unit of measurement is as per completed activities. Cost per activity shall be determined on pro-rate basis as per its weightage with reference to total cost of EHT line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is (i) Erection of Poles-20%, (ii) Conductor stringing including laying of cable-30%, (iii) DTR erection (if involved)-15% and (iv) Charging of line including dismantling and site clearance-35% (with DTR) and 50% without DTR) Cost of each crossing shall be determined on pro-rata basis with reference to total no. of crossings. Payment shall be made for not less than 25% of the crossings subject to a minimum of 4.
TATA - EHT line - EHT crossings	21.82%	Unit of measurement is as per completed activities. Cost per activity shall be determined on pro-rate basis as per its weightage with reference to total cost of EHT line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is (i) Erection of Poles-20%, (ii) Conductor stringing including laying of cable-30%, (iii) DTR erection (if involved)-15% and (iv) Charging of line including dismantling and site clearance-35% (with DTR) and 50% without DTR) Cost of each crossing shall be determined on pro-rata basis with reference to total no. of crossings. Payment shall be made for not less than 25% of the crossings subject to a minimum of 4.
UPCL - HT/ LT line underground - HT/ LT crossings	9.23%	Unit of measurement is as per completed activities. Cost per activity shall be determined on pro-rata basis as per its weightage with reference to total cost of LT/ HT line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is (i) Erection of Poles-20% (ii) Conductor stringing including laying of cable-30%, (iii) DTR erection (if involved)-10% and

Stage of Payment	Weightage	Payment Procedure
		(iv) Charging of line including dismantling and site clearance-40% (with DTR) and 50% without DTR) Cost of each crossing shall be determined on pro-rata basis with reference to total no. of crossings. Payment shall be made for not less than 25% of the crossings subject to a minimum of 10 crossings.
Payjal sansthan - Water pipeline - Water pipeline crossings	0.99%	Unit of measurement is linear length in metre. Payment shall be made on pro-rata basis on completion of a stage in Length of not less than 100 (Hundred) percent of the total Length
Uttarakhand Ja sansthan - Water pipeline - Water pipeline crossings	0.69%	Unit of measurement is linear length in metre. Payment shall be made on pro-rata basis on completion of a stage in Length of not less than 100 (Hundred) percent of the total Length

## **Schedule - I**

**(See Clause 10.2 (iv))**

### **Drawings**

#### **1. Drawings**

In compliance of the obligations set forth in Clause 10.2 of this Agreement, the Contractor shall furnish to the Authority's Engineer, free of cost, all Drawings listed in Annex-I of this Schedule-I in at least 4 sets.

#### **2. Additional Drawings**

If the Authority's Engineer determines that for discharging its duties and functions under this Agreement, it requires any drawings other than those listed in Annex-I, it may by notice require the Contractor to prepare and furnish such drawings forthwith. Upon receiving a requisition to this effect, the Contractor shall promptly prepare and furnish such drawings to the Authority's Engineer, as if such drawings formed part of Annex-I of this Schedule-I.

**Annex - I**

**(Schedule - I)**

**List of Drawings**

[Note: The Authority shall describe in this Annex-I, all the Drawings that the Contractor is required to furnish under Clause 10.2.]

- (a) Drawings of alignment plan and longitudinal profile
- (b) Drawings of cross drainage structure.
- (c) Drawings of Protection work
- (d) Drawings of Road signs and furniture's.
- (e) Miscellaneous Drawings

Any others drawing which the AE/Authority may review.

## **Schedule - J**

(See Clause 10.3 (ii))

### **Project Completion Schedule**

#### **1. Project Completion Schedule**

During Construction period, the Contractor shall comply with the requirements set forth in this Schedule-J for each of the Project Milestones and the Scheduled Completion Date. Within 15 (fifteen) days of the date of each Project Milestone, the Contractor shall notify the Authority of such compliance along with necessary particulars thereof.

#### **2. Project Milestone-I**

- (i) Project Milestone-I shall occur on the date falling on the 25 % of scheduled construction period (274th day) from the Appointed Date (the "Project Milestone- I").
- (ii) Prior to the occurrence of Project Milestone-I, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 10% (ten per cent) of the Contract Price.

#### **3. Project Milestone-II**

- (i) Project Milestone-II shall occur on the date falling on the 55% of the Scheduled Construction Period (548th day) from the Appointed Date (the "Project Milestone- II").
- (ii) Prior to the occurrence of Project Milestone-II, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 40% (thirty five per cent) of the Contract Price and should have started construction of all bridge.

#### **4. Project Milestone-III**

- (i) Project Milestone-III shall occur on the date falling on the 80% of the Scheduled Construction Period (821 th day) from the Appointed Date (the "Project Milestone- III").
- (ii) Prior to the occurrence of Project Milestone-III, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 75% (seventy per cent) of the Contract Price and should have started construction of all project facilities.

#### **5. Scheduled Completion Date**

- (i) The Scheduled Completion Date shall occur on the 1095th day from the Appointed Date.
- (ii) On or before the Scheduled Completion Date, the Contractor shall have completed construction in accordance with this Agreement.

#### **6. Extension of time**

Upon extension of any or all of the aforesaid Project Milestones or the Scheduled Completion Date, as the case may be, under and in accordance with the provisions of this Agreement, the Project Completion Schedule shall be deemed to have been amended accordingly.

## **Schedule - K**

**(See Clause 12.1 (ii))**

### **Tests on Completion**

#### **1. Schedule for Tests**

- (i) The Contractor shall, no later than 30 (thirty) days prior to the likely completion of construction, notify the Authority's Engineer and the Authority of its intent to subject the Project Highway to Tests, and no later than 10(ten) days prior to the actual date of Tests, furnish to the Authority's Engineer and the Authority detailed inventory and particulars of all works and equipment forming part of Works.
- (ii) The Contractor shall notify the Authority's Engineer of its readiness to subject the Project Highway to Tests at any time after 10 (ten) days from the date of such notice, and upon receipt of such notice, the Authority's Engineer shall, in consultation with the Contractor, determine the date and time for each Test and notify the same to the Authority who may designate its representative to witness the Tests. The Authority's Engineer shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 12 and this Schedule-K.

#### **2. Tests**

- (i) Visual and physical test: The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement.
- (ii) Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a Network Survey Vehicle (NSV) fitted with latest equipment and the maximum permissible roughness for purposes of this Test shall be 2,000 (two thousand) mm for each kilometre.
- (iii) Tests for bridges: All major and minor bridges shall be subjected to the rebound hammer and ultrasonic pulse velocity tests, to be conducted in accordance with the procedure described in Special Report No. 17: 1996 of the IRC Highway Research Board on Non-destructive Testing Techniques, at two spots in every span, to be chosen at random by the Authority's Engineer. Bridges with a span of 15 (fifteen) metres or more shall also be subjected to load testing.
- (iv) Other tests: The Authority's Engineer may require the Contractor to carry out or cause to be carried additional tests, in accordance with Good Industry Practice, for determining the compliance of the Project Highway with Specifications and Standards, except tests as specified in clause 5, but shall include measuring the reflectivity of road markings and road signs; and measuring the illumination level (lux) of lighting using requisite testing equipment.
- (v) Environmental audit: The Authority's Engineer shall carry out a check to determine conformity of the Project Highway with the environmental requirements set forth in Applicable Laws and Applicable Permits.

(vi) Road Safety Audit: The Authority's Engineer shall carry out, or cause to be carried out, a safety audit to determine conformity of the Project Highway with the safety requirements and Good Industry Practice.

**3. Agency for conducting Tests**

All Tests set forth in this Schedule-K shall be conducted by the Authority's Engineer or such other agency or person as it may specify in consultation with the Authority.

**4. Completion Certificate**

Upon successful completion of Tests, the Authority's Engineer shall issue the Completion Certificate in accordance with the provisions of Article 12.

**5. The Authority Engineer will carry out tests with following equipment at his own cost in the presence of contractor's representative.**

S. No.	Key metrics of Asset	Equipment to be used	Frequency of condition survey
1	Surface defects of pavement	Network Survey Vehicle (NSV)	At least twice a year (As per survey months defined for the state basis rainy season)
2	Roughness of pavement	Network Survey Vehicle (NSV)	At least twice a year (As per survey months defined for the state basis rainy season)
3	Strength of pavement	Falling Weight Deflectometer (FWD)	At least once a year
4	Bridges	Mobile Bridge Inspection Unit (MBU)	At least twice a year (As per survey months defined for the state basis rainy season)
5	Road signs	Retro-reflectometer	At least twice a year (As per survey months defined for the state basis rainy season)

The first testing with the help of NSV shall be conducted at the time of issue of Completion Certificate.

**Schedule - L**

**(See Clause 12.2)**

**Completion Certificate**

- 1 I, ..... (Name of the Authority’s Engineer), acting as the Authority’s Engineer, under and in accordance with the Agreement dated ..... (the “Agreement”), for [construction of the \*\*\*\*section (km \*\* to km \*\*) of National Highway No. \*\*\*] (the “Project Highway”) on Engineering, Procurement and Construction (EPC) basis through ..... (Name of Contractor), hereby certify that the Tests in accordance with Article 12 of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliably placed in service of the Users thereof.
  
- 2 It is certified that, in terms of the aforesaid Agreement, all works forming part of Project Highway have been completed, and the Project Highway is hereby declared fit for entry into operation on this the ..... day of ..... 20....., Scheduled Completed Date for which was the ..... day of .....20.....

SIGNED, SEALED AND DELIVERED For

and on behalf of the Authority’s

Engineer by:

(Signature)

(Name)

(Designation)

(Address)

## Schedule - M

(See Clauses 14.6, 15.2 and 19.7)

### Payment Reduction for Non-Compliance

1. Payment reduction for non-compliance with the Maintenance Requirements
  - (i) Monthly lump sum payments for maintenance shall be reduced in the case of non-compliance with the Maintenance Requirements set forth in Schedule-E.
  - (ii) Any deduction made on account of non-compliance with the Maintenance Requirements shall not be paid even after compliance subsequently. The deductions shall continue to be made every month until compliance is done.
  - (iii) The Authority's Engineer shall calculate the amount of payment reduction on the basis of weightage in percentage assigned to non-conforming items as given in Paragraph 2.
2. Percentage reductions in lump sum payments on monthly basis
  - (i) The following percentages shall govern the payment reduction:

S. No.	Item/Defect/Deficiency	Percentage
<b>(a)</b>	<b>Carriageway/Pavement</b>	
(i)	Potholes, cracks, other surface defects	15%
(ii)	Repairs of Edges, Rutting	5%
<b>(b)</b>	<b>Road, Embankment, Cuttings, Shoulders</b>	
(i)	Edge drop, inadequate cross fall, undulations, settlement, potholes, ponding, obstructions	10%
(ii)	Deficient slopes, rain cuts, disturbed pitching, vegetation growth, pruning of trees & hill side slope treatments work	5%
<b>(c)</b>	<b>Bridges and Culverts</b>	
(i)	Desilting, cleaning, vegetation growth, damaged pitching, flooring, parapets, wearing course, footpaths, any damage to foundations	20%
(ii)	Any Defects in superstructures, bearings and sub-structures	10%
(iii)	Painting, repairs/replacement kerbs, railings, parapets, guideposts/crash barriers	5%
<b>(d)</b>	<b>Roadside Drains</b>	
(i)	Cleaning and repair of drains	5%
<b>(e)</b>	<b>Road Furniture</b>	
(i)	Cleaning, painting, replacement of road signs, delineators, road markings, 200 m/km/5 <sup>th</sup> km stones	5%
<b>(f)</b>	<b>Miscellaneous Items</b>	
(i)	Removal of dead animals, broken down/accidented vehicles, fallen trees, road blockades or malfunctioning of mobile crane	10%
(ii)	Any other Defects in accordance with paragraph 1.	5%
<b>(g)</b>	<b>Defects in Other Project Facilities</b>	5%

- (ii) The amount to be deducted from monthly lump-sum payment for non-compliance of particular item shall be calculated as under:

$$R = P/100 \times (M1 \text{ or } M2) \times L1/L$$

Where,

P= Percentage of particular item/Defect/deficiency for deduction

M1= Monthly lump-sum payment in accordance para 1.2 above of this Schedule M2= Monthly lump-sum payment in accordance para 1.2 above of this Schedule L1= Non-complying length

L = Total length of the road,

R= Reduction (the amount to be deducted for non-compliance for a particular item/Defect/deficiency

The total amount of reduction shall be arrived at by summation of reductions for such items/Defects/deficiency or non-compliance.

For any Defect in a part of one kilometre, the non-conforming length shall be taken as one kilometre.

## **Schedule - N**

**(See Clause 18.1 (i))**

### **Selection of Authority's Engineer**

#### **1. Selection of Authority's Engineer**

- (i) The provisions of the Model Request for Proposal for Selection of Technical Consultants, issued by the Ministry of Finance in May 2009, or any substitute thereof shall apply for selection of an experienced firm to discharge the functions and duties of an Authority's Engineer.
- (ii) In the event of termination of the Technical Consultants appointed in accordance with the provisions of Paragraph 1.1, the Authority shall appoint another firm of Technical Consultants forthwith and may engage a government-owned entity in accordance with the provisions of Paragraph 3 of this Schedule-N.

#### **2. Terms of Reference**

The Terms of Reference for the Authority's Engineer (the "TOR") shall substantially conform with Annex 1 to this Schedule N.

#### **3. Appointment of Government entity as Authority's Engineer**

Notwithstanding anything to the contrary contained in this Schedule, the Authority may in its discretion appoint a government-owned entity as the Authority's Engineer; provided that such entity shall be a body corporate having as one of its primary functions the provision of consulting, advisory and supervisory services for engineering projects; provided further that a government-owned entity which is owned or controlled by the Authority shall not be eligible for appointment as Authority's Engineer.

## **Annex - I (Schedule - N)**

### **Terms of Reference for Authority's Engineer**

#### **1. Scope**

- (i) These Terms of Reference (the "TOR") for the Authority's Engineer are being specified pursuant to the EPC Agreement dated ..... (the "Agreement"), which has been entered into between the [name and address of the Authority] (the "Authority") and ..... (the "Contractor")# for Construction of 4 laning of Rishikesh Bypass from Design Chainage km 529+750 (Near Teenpani Flyover on NH-7) to Design Chainage km 542+420 (Near Kharasrote Bridge), passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km). on EPC mode, basis, and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.

# - In case the bid of Authority's Engineer is invited simultaneously with the bid of EPC project, then the status of bidding of EPC project only to be indicated

- (ii) The TOR shall apply to construction and maintenance of the Project Highway.

#### **2. Definitions and interpretation**

- (i) The words and expressions beginning with or in capital letters and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Agreement.
- (ii) References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be references to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of this TOR.
- (iii) The rules of interpretation stated in Article 1 of the Agreement shall apply, mutatis mutandis, to this TOR.

#### **3. General**

- (i) The Authority's Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.
- (ii) The Authority's Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement, but subject to obtaining prior written approval of the Authority before determining:
- (a) any Time Extension;
  - (b) any additional cost to be paid by the Authority to the Contractor;
  - (c) the Termination Payment; or
  - (d) issuance of Completion Certificate or
  - (e) any other matter which is not specified in (a), (b), (c) or (d) above and which creates a financial liability on either Party.

- (iii) The Authority's Engineer shall submit regular periodic reports, at least once every month, to the Authority in respect of its duties and functions under this Agreement. Such reports shall be submitted by the Authority's Engineer within 10 (ten) days of the beginning of every month.
- (iv) The Authority's Engineer shall inform the Contractor of any delegation of its duties and responsibilities to its suitably qualified and experienced personnel; provided, however, that it shall not delegate the authority to refer any matter for the Authority's prior approval in accordance with the provisions of Clause 18.2.
- (v) The Authority's Engineer shall aid and advise the Authority on any proposal for Change of Scope under Article 13.
- (vi) In the event of any disagreement between the Parties regarding the meaning, scope and nature of Good Industry Practice, as set forth in any provision of the Agreement, the Authority's Engineer shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

#### **4. Construction Period**

- (i) During the Construction Period, the Authority's Engineer shall review and approve the Drawings furnished by the Contractor along with supporting data, including the geotechnical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys, and the recommendations of the Safety Consultant in accordance with the provisions of Clause 10.1 (vi). The Authority's Engineer shall complete such review and approval and send its observations to the Authority and the Contractor within 15 (fifteen) days of receipt of such Drawings; provided, however that in case of a Major Bridge or Structure, the aforesaid period of 15 (fifteen) days may be extended upto 30 (thirty) days. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.
- (ii) The Authority's Engineer shall review and approve any revised Drawings sent to it by the Contractor and furnish its comments within 10 (ten) days of receiving such Drawings.
- (iii) The Authority's Engineer shall review and approve the Quality Assurance Plan submitted by the Contractor and shall convey its comments to the Contractor within a period of 21 (twenty one) days stating the modifications, if any, required thereto.
- (iv) The Authority's Engineer shall complete the review and approve of the methodology proposed to be adopted by the Contractor for executing the Works, and convey its comments to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.
- (v) The Authority's Engineer shall grant written approval to the Contractor, where necessary, for interruption and diversion of the flow of traffic in the existing lane(s) of the Project Highway for purposes of maintenance during the Construction Period in accordance with the provisions of Clause 10.4.

- (vi) The Authority's Engineer shall review the monthly progress report furnished by the Contractor and send its comments thereon to the Authority and the Contractor within 7 (seven) days of receipt of such report.
- (vii) The Authority's Engineer shall inspect the Construction Works and the Project Highway and shall submit a monthly Inspection Report bringing out the results of inspections and the remedial action taken by the Contractor in respect of Defects or deficiencies. In particular, the Authority's Engineer shall include in its Inspection Report, the compliance of the recommendations made by the Safety Consultant.
- (viii) The Authority's Engineer shall conduct the pre-construction review of manufacturer's test reports and standard samples of manufactured Materials, and such other Materials as the Authority's Engineer may require.
- (ix) For determining that the Works conform to Specifications and Standards, the Authority's Engineer shall require the Contractor to carry out, or cause to be carried out, tests at such time and frequency and in such manner as specified in the Agreement and in accordance with Good Industry Practice for quality assurance. For purposes of this Paragraph 4 (ix), the tests specified in the IRC Special Publication-11 (Handbook of Quality Control for Construction of Roads and Runways) and the Specifications for Road and Bridge Works issued by MORTH (the "Quality Control Manuals") or any modification/substitution thereof shall be deemed to be tests conforming to Good Industry Practice for quality assurance.
- (x) The Authority's Engineer shall test check at least 50 (fifty) percent of the quantity or number of tests prescribed for each category or type of test for quality control by the Contractor.
- (xi) The timing of tests referred to in Paragraph 4 (ix), and the criteria for acceptance/ rejection of their results shall be determined by the Authority's Engineer in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that may be carried out by the Contractor for its own quality assurance in accordance with Good Industry Practice.
- (xii) In the event that results of any tests conducted under Clause 11.10 establish any Defects or deficiencies in the Works, the Authority's Engineer shall require the Contractor to carry out remedial measures.
- (xiii) The Authority's Engineer may instruct the Contractor to execute any work which is urgently required for the safety of the Project Highway, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 shall apply.
- (xiv) In the event that the Contractor fails to achieve any of the Project Milestones, the Authority's Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Authority's Engineer shall determine that completion of the Project Highway is not feasible within the time specified in the Agreement, it shall require the Contractor to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Contractor, the

Authority's Engineer shall review the same and send its comments to the Authority and the Contractor forthwith.

- (xv) The Authority's Engineer shall obtain from the Contractor a copy of all the Contractor's quality control records and documents before the Completion Certificate is issued pursuant to Clause 12.2.
- (xvi) Authority's Engineer may recommend to the Authority suspension of the whole or part of the Works if the work threatens the safety of the Users and pedestrians. After the Contractor has carried out remedial measure, the Authority's Engineer shall inspect such remedial measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked.
- (xvii) In the event that the Contractor carries out any remedial measures to secure the safety of suspended works and Users, and requires the Authority's Engineer to inspect such works, the Authority's Engineer shall inspect the suspended works within 3 (three) days of receiving such notice, and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.
- (xviii) The Authority's Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-K and issue a Completion Certificate, as the case may be. For carrying out its functions under this Paragraph 4 (xviii) and all matters incidental thereto, the Authority's Engineer shall act under and in accordance with the provisions of Article 12 and Schedule-K.

## **5. Maintenance Period**

- (i) The Authority's Engineer shall aid and advise the Contractor in the preparation of its monthly Maintenance Programme and for this purpose carry out a joint monthly inspection with the Contractor.
- (ii) The Authority's Engineer shall undertake regular inspections, at least once every month, to evaluate compliance with the Maintenance Requirements and submit a Maintenance Inspection Report to the Authority and the Contractor.
- (iii) The Authority's Engineer shall specify the tests, if any, that the Contractor shall carry out, or cause to be carried out, for the purpose of determining that the Project Highway is in conformity with the Maintenance Requirements. It shall monitor and review the results of such tests and the remedial measures, if any, taken by the Contractor in this behalf.
- (iv) In respect of any defect or deficiency referred to in Paragraph 3 of Schedule- E, the Authority's Engineer shall, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards and shall also specify the time limit for repair or rectification of any deviation or deterioration beyond the permissible limit.
- (v) The Authority's Engineer shall examine the request of the Contractor for closure of any lane(s) of the Project Highway for undertaking maintenance/repair thereof, and shall grant permission with such modifications, as it may deem necessary, within 5 (five) days of receiving a request from the Contractor. Upon expiry of the permitted period of closure, the Authority's Engineer shall monitor the reopening of such lane(s), and in

case of delay, determine the Damages payable by the Contractor to the Authority under Clause 14.5.

**6. Determination of costs and time**

- (i) The Authority's Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.
- (ii) The Authority's Engineer shall determine the period of Time Extension that is required to be determined by it under the Agreement.
- (iii) The Authority's Engineer shall consult each Party in every case of determination in accordance with the provisions of Clause 18.5.

**7. Payments**

- (i) The Authority's Engineer shall withhold payments for the affected works for which the Contractor fails to revise and resubmit the Drawings to the Authority's Engineer in accordance with the provisions of Clause 10.2 (iv) (d).
- (ii) Authority's Engineer shall -
  - (a) within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 19.4, determine the amount due to the Contractor and recommend the release of 90 (ninety) percent of the amount so determined as part payment, pending issue of the Interim Payment Certificate; and
  - (b) within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 19.4, deliver to the Authority and the Contractor an Interim Payment Certificate certifying the amount due and payable to the Contractor, after adjustments in accordance with the provisions of Clause 19.10.
- (iii) The Authority's Engineer shall, within 15 (fifteen) days of receipt of the Monthly Maintenance Statement from the Contractor pursuant to Clause 19.6, verify the Contractor's monthly statement and certify the amount to be paid to the Contractor in accordance with the provisions of the Agreement.
- (iv) The Authority's Engineer shall certify final payment within 30 (thirty) days of the receipt of the final payment statement of Maintenance in accordance with the provisions of Clause 19.16.

**8. Other duties and functions**

The Authority's Engineer shall perform all other duties and functions as specified in the Agreement.

**9. Miscellaneous**

- (i) A copy of all communications, comments, instructions, Drawings or Documents sent by the Authority's Engineer to the Contractor pursuant to this TOR, and a copy of all the test results with comments of the Authority's Engineer thereon, shall be furnished by the Authority's Engineer to the Authority forthwith.
- (ii) The Authority's Engineer shall retain at least one copy each of all Drawings and Documents received by it, including 'as-built' Drawings, and keep them in its safe custody.

- (iii) Within 90 (ninety) days of the Project Completion Date, the Authority's Engineer shall obtain a complete set of as-built Drawings, in 2 (two) hard copies and in micro film form or in such other medium as may be acceptable to the Authority, reflecting the Project Highway as actually designed, engineered and constructed, including an as- built survey illustrating the layout of the Project Highway and setback lines, if any, of the buildings and structures forming part of Project Facilities; and shall hand them over to the Authority against receipt thereof.
- (iv) The Authority's Engineer, if called upon by the Authority or the Contractor or both, shall mediate and assist the Parties in arriving at an amicable settlement of any Dispute between the Parties.
- (v) The Authority's Engineer shall inform the Authority and the Contractor of any event of Contractor's Default within one week of its occurrence.

## **Schedule - 0**

**(See Clauses 19.4 (i), 19.6 (i), and 19.8 (i))**

### **Forms of Payment Statements**

#### **1. Stage Payment Statement for Works**

The Stage Payment Statement for Works shall state:

- (a) the estimated amount for the Works executed in accordance with Clause 19.3 (i) subsequent to the last claim;
- (b) amounts reflecting adjustments in price for the aforesaid claim;
- (c) the estimated amount of each Change of Scope Order executed subsequent to the last claim;
- (d) amounts reflecting adjustment in price, if any, for (c) above in accordance with the provisions of Clause 13.2 (iii) (a);
- (e) total of (a), (b), (c) and (d) above; (f) Deductions:
  - i. Any amount to be deducted in accordance with the provisions of the Agreement except taxes;
  - ii. Any amount towards deduction of taxes; and
  - iii. Total of (i) and (ii) above.
- (g) Net claim: (e) – (f) (iii);
- (h) The amounts received by the Contractor upto the last claim:
  - i. For the Works executed (excluding Change of Scope orders);
  - ii. For Change of Scope Orders, and
  - iii. Taxes deducted.

#### **2. Monthly Maintenance Payment Statement**

The monthly Statement for Maintenance Payment shall state:

- (a) the monthly payment admissible in accordance with the provisions of the Agreement;
- (b) the deductions for maintenance work not done; (c) net payment for maintenance due, (a) minus (b);
- (d) amounts reflecting adjustments in price under Clause 19.12; and
- (e) amount towards deduction of taxes

#### **3. Contractor's claim for Damages**

Note: The Contractor shall submit its claims in a form acceptable to the Authority.

## **Schedule - P**

**(See Clause 20.1)**

### **Insurance**

#### **1. Insurance during Construction Period**

- (i) The Contractor shall effect and maintain at its own cost, from the Appointed Date till the date of issue of the Completion Certificate, the following insurances for any loss or damage occurring on account of Non Political Event of Force Majeure, malicious act, accidental damage, explosion, fire and terrorism:
- (a) insurance of Works, Plant and Materials and an additional sum of [15 (fifteen)] per cent of such replacement cost to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature; and
  - (b) insurance for the Contractor's equipment and Documents brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.
- (ii) The insurance under sub para (a) and (b) of paragraph 1(i) above shall cover the Authority and the Contractor against all loss or damage from any cause arising under paragraph 1.1 other than risks which are not insurable at commercial terms.

#### **2. Insurance for Contractor's Defects Liability**

The Contractor shall effect and maintain insurance cover of not less than 15% of the Contract Price for the Works from the date of issue of the Completion Certificate until the end of the Defects Liability Period for any loss or damage for which the Contractor is liable and which arises from a cause occurring prior to the issue of the Completion Certificate. The Contractor shall also maintain other insurances for maximum sums as may be required under the Applicable Laws and in accordance with Good Industry Practice.

#### **3. Insurance against injury to persons and damage to property**

- (i) The Contractor shall insure against its liability for any loss, damage, death or bodily injury, or damage to any property (except things insured under Paragraphs 1 and 2 of this Schedule or to any person (except persons insured under Clause 20.9), which may arise out of the Contractor's performance of this Agreement. This insurance shall be for a limit per occurrence of not less than the amount stated below with no limit on the number of occurrences.

The insurance cover shall be not less than: Rs. [\*\*\*\*\*]

- (ii) The insurance shall be extended to cover liability for all loss and damage to the Authority's property arising out of the Contractor's performance of this Agreement excluding:
- (a) the Authority's right to have the construction works executed on, over, under, in or through any land, and to occupy this land for the Works; and

(b) damage which is an unavoidable result of the Contractor's obligations to execute the Works.

**4. Insurance to be in joint names**

The insurance under paragraphs 1 to 3 above shall be in the joint names of the Contractor and the Authority.

## **Schedule-Q**

(See Clause 14.10)

### **Tests on Completion of Maintenance Period**

**1. Riding Quality test:**

Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a calibrated bump integrator and the maximum permissible roughness for purposes of this Test shall be 2,200 (two thousand and two hundred only) mm for each kilometre.

**2. Visual and physical test:**

The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include measurement of cracking, rutting, stripping and potholes and shall be as per the requirement of maintenance mentioned in Schedule-E.

**Schedule-R**

**(See Clause 14.10)**

**Taking Over Certificate**

I, ..... (Name and designation of the Authority's Representative) under and in accordance with the Agreement dated ..... (the "Agreement"), for Construction of 4 laning of Rishikesh Bypass from Design Chainage km 529+750 (Near Teenpani Flyover on NH-7) to Design Chainage km 542+420 (Near Kharasrote Bridge), passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km) on Engineering, Procurement and Construction (EPC) basis through ..... (Name of Contractor), hereby certify that the Tests on completion of Maintenance Period in accordance with Article 14 of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement and I hereby certify that the Authority has taken over the Project highway from the Contractor on this day.

SIGNED, SEALED AND  
DELIVERED

(Signature)

(Name and designation of Authority's  
Representative) (Address)

\*\*\*\*\* End of the Document \*\*\*\*\*

Project : Construction of 4 laning of Rishikesh Bypass from Design Chainage km 529+750 (Near Teenpani Flyover on NH-7) to Design Chainage km 542+420 (Near Kharasrote Bridge), passing through Bhattowala and Dhalwala Village in the State of Uttarakhand (Design Length - 12.670 Km). on EPC mode

Corrigendum for Draft Concession Agreement for EPC contract of Rishikesh project.

S. no	S. no.	Existing as per original DCA/ RFP	modified	Remarks						
1	8.3(iii) a Page No 46	In the event of withdrawal of Works under Clause 8.3 (iii) (a), the Contract Price shall be reduced by an amount equal to 90 (ninety) per cent of the value of the Works withdrawn and the Contractor shall not be entitled to any other compensation or Damages for the withdrawal of Works.	<p>(iv) In the event of withdrawal of Works under Clause 8.3 (iii) (a), the Contract Price shall be reduced by an amount equal to the percent of the value of the works withdrawn as mentioned in the table below and the Contractor shall not be entitled to any other compensation of Damages for the withdrawal of works.</p> <table border="1"> <thead> <tr> <th>Value of the Works withdrawn</th> <th>Percentage of value of works to be from Contract Price</th> </tr> </thead> <tbody> <tr> <td>upto Rs. 100 Crore</td> <td>90%</td> </tr> <tr> <td>More than Rs. 100 Crore</td> <td>Rs.90 Crore plus 95% of the greater than Rs. 100 Crore</td> </tr> </tbody> </table> <p>Provided that If any Works are withdrawn after commencement of the Construction of such works, the Authority shall pay to the Contractor 110% (one hundred and ten per cent) of the fair value of the work done, as assessed by the Authority Engineer.</p> <p>The parties expressly agree that the value of the Works withdrawn shall be determined from the details available in Schedule-H. In the event that it is impossible to determine the value from Schedule-H, then the value shall be determined in accordance with the provisions of Clause 13.2 (iii).</p>	Value of the Works withdrawn	Percentage of value of works to be from Contract Price	upto Rs. 100 Crore	90%	More than Rs. 100 Crore	Rs.90 Crore plus 95% of the greater than Rs. 100 Crore	Dughad DCA (Pg no. 57)
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upto Rs. 100 Crore	90%									
More than Rs. 100 Crore	Rs.90 Crore plus 95% of the greater than Rs. 100 Crore									
2	Annex-I Schedule E Page no. 216	[Note: Where necessary, the Authority may modify the time limit for repair/rectification, or add to the nature of Defect or deficiency before issuing the bidding document, with the approval of the competent authority.]	<p>[Note: 1. Where necessary, the Authority may modify the time limit for repair/rectification, or add to the nature of Defect or deficiency before issuing the bidding document, with the approval of the competent authority.]</p> <p>2. in case of minor damage (beyond 20%) to hill slope treatment work done as per s cope, timeline for rectification /repair to be decided by the authority which shall be final and binding</p>	<b>(from Paligad DCA P No. 202)</b>						
3	11.7 E Page no.63	(e) records of manpower and Contractor's equipment on the Site;	(e) records of manpower and Contractor's equipment on the Site; along with a detailed report indicating the locations and movements of all construction vehicles by way of installing a functional global positioning system (GPS) in each vehicle , which shall include, but not limited to the following informations	<b>P.No. 74 o Bhaniyawal DCA</b>						

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			<ul style="list-style-type: none"> <li>i. Real time location data of each construction vehicle</li> <li>ii. Timestamps indicating the start and end times of vehicle movements</li> <li>iii. Milage coverage by eac h vehicle.</li> </ul> <p>The Contractor shall be responsible for ensuring the accuracy and integrity of the GPS tracking data</p>	
4	11.16 Page No 66	<p><b>11.16 Video recording</b></p> <p>During the Construction Period, the Contractor shall provide to the Authority for every calendar quarter, a video recording, which will be compiled into a 3 (three)- hour compact disc or digital video disc, as the case may be, covering the status and progress of Works in that quarter. The video recording shall be provided to the Authority no later than 15 (fifteen) days after the close of each quarter after the Appointed Date.</p>	<p><b>11.16 Drone Video recording</b></p> <p>The Contractor shall carry out video recording of each project every month since award of the work till completion of construction and biannually during maintenance period.</p> <p>Authority has finalised specifications/ methodology for video recording and identified zone-wise agencies and rates for the same. The Contractor may use these agencies so as to ensure uniformity in data collection. Recording shall have to be done in the presence of Team Leader of AE. Recording of previous videos and the current running side by side shall be loaded on Data Lake (<a href="https://datalakeg.nhai.gov.in/nhai">https://datalakeg.nhai.gov.in/nhai</a>) for easily capturing various developments during the month (a sample screenshot is attached herewith and also loaded on Data Lake along with a sample video for guidance) before submission of their invoice. Capturing Ortho-image for approx. 10% equivalent length of critical structures or any other specific area should be decided by the ROs/PDs and be conveyed to the Drone Agency in the site-specific work order. Authority Engineer shall ensure that the features and quality of drone video is acceptable and video is not distorted/ tampered with.</p> <p>Authority Engineer shall analyses these drone videos and give their comments in its digital MPRs covering inter-alia but not limited to the encumbrances/lands not available, Yes of COS demands, progress of project, mobilization of plant &amp; equipment rehabilitation of camp site, progress on rectification of NCRs etc. along with the proposed action plan.</p> <p>Project Director of NHAI shall cross-check drone videos during the monthly physical inspections and notify the discrepancies noticed, if any, between drone video on Authority Engineer comments and ground reality. The discrepancies shall be examined and addressed through joint site inspections.</p> <p>As per the policy, the Network Survey Vehicle (NSV) survey</p>	<b>(bhaniaya wal DCA from paga eno 77-80</b>

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			<p>needs to be carried out twice in a year on completed project. Therefore, PDs should plan biannually drone based video recording during Maintenance period in such a manner so that there is no overlap and digital data of Maintenance period is available in regular intervals (quarterly) through NSV and drone videography.</p> <p>As the drone videos/ report will be permanent record on Data Lake and will be used as evidences during dispute resolution process before Arbitral Tribunals/ Court including Supreme Court, the drone video shall be carried out carefully and correctly without distortions/ tampering by all the parties concerned. The amount spent on recording shall be charged to Contractor to the extent covered in the agreement, (for detail refer Annexure -1)</p>	
5	19.1.2 of EPC Bhaniyawal p.no. 104		<p>Additional Para</p> <p><b>19.1.2</b> The Contract Price also includes the cost of shifting of obstructing utilities (including all centages as applicable by the utility owning department except supervision charges ) as given in clause 9.2 and schedule B.</p>	19.1.2 from Baniyawal add P. no. 104
6	19.11	Price adjustment shall be due and payable only in respect of the stages of Works for which the Stage Payment Statement has been submitted by the Contractor no later than 30 (thirty) days from the date of the applicable Project Milestone or the Scheduled Completion Date, as the case may be, including any Time Extension granted therefor in accordance with the provisions of this Agreement. For the avoidance of doubt, in the event of submission of any Stage Payment Statement after the period specified herein, price adjustment shall be applicable until the date of the respective Project Milestone or the Scheduled Completion Date, as the case may be.	<p>In continuation of existing, Additional para to the clause 19.11</p> <p>Price adjustment shall be due and payable only in respect of the stages of Works for which the Stage Payment Statement has been submitted by the Contractor no later than 30 (thirty) days from the date of the applicable Project Milestone or the Scheduled Completion Date, as the case may be, including any Time Extension granted therefor in accordance with the provisions of this Agreement. For the avoidance of doubt, in the event of submission of any Stage Payment Statement after the period specified herein, price adjustment shall be applicable until the date of the respective Project Milestone or the Scheduled Completion Date, as the case may be. Further, the Price Adjustment will be applicable only for Stage Payment Statements pertaining to the works executed after One year (365 days) from the Appointed Date.</p>	<b>(From Paligad DCA p. No. 105 )</b>
7	19.20 P.No.,102	Bonus for early completion	deleted	
	26.1.(iii)		<p>additional para</p> <p>(iii) Dispute Resolution board</p> <p>Failing mediation by the Authority's Engineer or without intervention of the the Authority's Engineer either party may</p>	<b>(from Bhaniya wala contract P No. 141, Dugadda DCA P .No. 134)</b>

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			require such dispute or to be referred to the Dispute Resolution Board ("DRB") in accordance with the procedure set forth in Schedule-S to the contract agreement, Decision(s) of the Dispute resolution board shall be binding on both parties who shall promptly give effect unless and until the same is revised/modified, as herein after provided, in Conciliation /Arbitral Tribunal	
	26.3	<p><b>26.3 Arbitration</b></p> <p>(i) Any dispute which remains unresolved between the parties through the mechanisms available/ prescribed in the Agreement, irrespective of any claim value, which has not 132 been agreed upon/ reached settlement by the parties, will be referred to the Arbitral Tribunal as per the Arbitration and Conciliation Act.</p> <p>(ii) Deleted.</p> <p>(iii) The Arbitral Tribunal shall make a reasoned award (the "Award"). Any Award made in any arbitration held pursuant to this Article 26 shall be final and binding on the Parties as from the date it is made, and the Contractor and the Authority agree and undertake to carry out such Award without delay.</p> <p>(iv) The Contractor and the Authority agree that an Award may be enforced against the Contractor and/or the Authority, as the case may be, and their respective assets wherever situated.</p> <p>(v) This Agreement and the rights and obligations of the Parties shall remain in full force and effect, pending the Award in any arbitration proceedings hereunder. Further, the parties unconditionally acknowledge and agree that notwithstanding any dispute between them, each Party shall proceed with the performance of its respective obligations, pending resolution of Dispute in accordance with this Article.</p> <p>(vi) In the event the Party against whom the Award</p>	<p><b>26.3.1</b> Any dispute which is not resolved amicably by conciliation as provided in clause 26.2 shall be finally settled by arbitration as set forth below:</p> <p>(i) The dispute shall be finally referred to Society for Affordable Resolution of Despute (herein after called as SAROD) , a society registered under Society act 1860 vide Registration no. S/RS/SW1049/2013 duly represented by Authority and National Highways Builders Federation (NHBF). The dispute shall be dealt with in terms of Rules of SAROD. The detailed procedure for conducting Arbitration shall be governed by the Rules of SAROD and provisions of Arbitration &amp; Conciliation Act, 1996, as amended from time to time. The Dispute shall be governed by Substantive Law of India.</p> <p>(ii) The appointment of Tribunal, Code of conduct for Arbitrators and fees and expenses of SAROD and Arbitral Tribunal shall also be governed by the Rules of SAROD as amended from time to time. The rules of SAROD are placed at Annexure to schedule S.</p> <p>(iii) Subject to the provisions of THE LIMITATION ACT, 1963, as amended from time to time, Arbitration may be commenced during or after the Contract Period, provided that the obligations of Authority and the Contractor shall not be altered by reason of the Arbitration being conducted during the Contract Period.</p> <p>(iv) The venue of Arbitration shall be New Delhi or a place selected by governing body of SAROD and the language for all documents and communications between the parties shall be English.</p> <p>(v) The expenses incurred by each party in connection with the preparation, presentation, etc., of arbitral</p>	<b>(Bhaninyawal Contract different from standard DCA P. No. 141 , Dugadda P.No. 135)</b>

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		<p>has been granted challenges the Award for any reason in a court of law, it shall make an interim payment to the other Party for an amount equal to 75% (seventy-five per cent) of the Award, pending final settlement of the Dispute. The aforesaid amount shall be paid forthwith upon furnishing an irrevocable Bank Guarantee for a sum equal to 120 % (one hundred and twenty per cent) of the aforesaid amount. Upon final settlement of the Dispute, the aforesaid interim payment shall be adjusted and any balance amount due to be paid or returned, as the case may be, shall be paid or returned with interest calculated at the rate of 10% (ten per cent) per annum from the date of interim payment to the date of final settlement of such balance</p>	<p>proceedings shall be shared by each party itself.</p> <p><b>26.3.2</b> The arbitrators shall make a reasoned award (the "Award"). Any Award made in any arbitration held pursuant to this Article 26 shall be final and binding on the Parties as from the date it is made, and the Contractor and the Authority agree and undertake to carry out such Award without delay.</p> <p><b>26.3.3</b> The Contractor and the Authority agree that an Award may be enforced against the Contractor and/or the Authority, as the case may be, and their respective assets wherever situated.</p> <p><b>26.3.4</b> This Agreement and the rights and obligations of the Parties shall remain in full force and effect, pending the Award in any arbitration proceedings hereunder. Further, the parties unconditionally acknowledge and agree that notwithstanding any dispute between them, each party shall proceed with the performance of its respective obligations, pending resolution of Dispute in accordance with this Article.</p>																
	Schedule G cl 12		<p><b>Additional Para for sub clause,</b></p> <p>12. This Guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.</p> <p>13 The Guarantor/ bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform and shall invariably send an advice of this Bank Guarantee to the Designated bank of MORTH , details of which as under:</p> <table border="1"> <thead> <tr> <th>S. no.</th> <th>Particular</th> <th>Details to be selected in Bharatkosh</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Ministry</td> <td>RO MINISTRY OF ROAD TRASPORT &amp; HIGHWAYS</td> </tr> <tr> <td>2</td> <td>Purpose</td> <td>Sale of Tender document</td> </tr> <tr> <td>3</td> <td>Pay &amp; Account Office (PAO)</td> <td>034415-PAO(NH), New Delhi</td> </tr> <tr> <td>4</td> <td>Drawing and Disbursing Office (DDO)</td> <td>234444- ENGINEER LIASON OFFICER.</td> </tr> </tbody> </table>	S. no.	Particular	Details to be selected in Bharatkosh	1	Ministry	RO MINISTRY OF ROAD TRASPORT & HIGHWAYS	2	Purpose	Sale of Tender document	3	Pay & Account Office (PAO)	034415-PAO(NH), New Delhi	4	Drawing and Disbursing Office (DDO)	234444- ENGINEER LIASON OFFICER.	<b>Bhaniaya wala DCA P.No. 313 (Cl 12&amp;13 )</b>
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